



Southern Company continues to deliver clean, safe, reliable and affordable energy for our customers and communities.

Our commitment to delivering energy and energy solutions includes conserving and protecting the environment for today and for future generations. Southern Company has already made significant progress towards our goal to transition to low- to no-carbon operations by 2050.

We endeavor to actively engage all our stakeholders – including customers and shareholders – in a productive, transparent conversation about how we safely manage risk while delivering value and growth.

In that spirit of engagement and transparency, Southern Company participated in the CDP Climate Disclosure again for 2019.

We encourage everyone to use the resources below to learn more about our business and Southern Company's plans for achieving a low- to no- carbon future and for building a better energy future.

[Planning for the Low Carbon Future](#)
[Corporate Responsibility Report](#)
[EEl ESG Template](#)

The Southern Company - Climate Change 2019

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

The Southern Company (Southern, the Company, or SO) is a leading energy company, with 44,000 megawatts (MW) of generating capacity and 1,500 billion cubic feet of combined natural gas consumption and throughput volume serving 9 million customers. For more than a century, the Southern Company has been building the future of energy, delivering the energy resources and solutions our customers and communities need to drive growth and prosperity.

No U.S. utility is doing more than Southern Company to assure there is an affordable and reliable path to a low to no carbon future for the utility industry and for the U.S. economy as a whole. We are the only U.S. utility developing the full portfolio of generation resources, including carbon-free nuclear, advanced carbon capture technologies, natural gas, renewables such as wind and solar, and energy-efficiency and storage technologies. We are investing more than \$20 billion between 2010 and 2020 in this low and no carbon full-portfolio of generation resources and are the only U.S. utility engaged in a comprehensive research and development program that has a goal of enabling an affordable and reliable transition to low to no carbon operations.

Southern Company is committed to meeting customers' current and future energy needs, while setting a long-term goal to transition to low- to no-carbon operations by 2050 and an intermediate goal to reduce carbon emissions from 2007 levels by 50 percent by 2030.

Three key pillars support our approach to reducing carbon dioxide emissions:

- A diverse energy resource portfolio
- Industry-leading research and development (R&D), focusing on technologies that lower GHG emissions
- Constructive engagement with policymakers and others to support outcomes that lead to a low-carbon future

We are aggressively growing our investment in renewable energy, modernizing the grid, increasing the use of natural gas, building the first new nuclear generating units in a generation, solving difficult energy challenges through robust R&D, and investing in energy efficiency for savings on both sides of the meter.

We have already made significant progress with a full portfolio approach to electric generation resource diversity, focused on maintaining reliability and affordability while reducing carbon emissions. Since 2010, more than 5,200 MW of renewable generating capacity has been added across the system along with approximately 6,300 MW of coal- and oil- related retirements as of July 2019. Our current portfolio of more than 12,000 MW of carbon-free and carbon-neutral resource generation capacity has established a foundation enabling us to continue our carbon reduction efforts.

We've reduced nitrogen oxides emissions by 89 percent since 1990 and sulfur dioxide emissions by 98 percent – while serving a 30 percent greater demand. Since 2007, we have reduced mercury emissions by over 90 percent and GHG emissions by 35 percent.

Our Southern Company Gas subsidiary is a founding member in Our Nation's Energy (ONE) Future and for our natural gas distribution operations, we aspire to remain aligned with ONE Future's 2025 goal. Our natural gas distribution operation's intensity for 2017 using the ONE Future methodology is 0.134 percent, well below ONE Future's 2025 goal of 0.44 percent for local distribution companies.

Transitioning to a low-carbon future will require continued advancement in technology. Opportunities to reduce our carbon emissions include completing construction of Plant Vogtle units 3 and 4, seeking useful life extensions for our existing 3,700-MW nuclear fleet, continuing to grow our sizable renewable energy resources, deploying battery energy storage and continuing to modernize the power grid for greater resiliency. We also see potential to invest through our PowerSecure subsidiary in new technologies that may emerge.

Our dedicated R&D organization leverages a diverse research portfolio and collaborates with the U.S. government, other utilities, universities and industry in development of new technologies for energy production, delivery and end-use. This leadership is inventing innovative solutions for a low-carbon energy future.

We are engaging with policymakers, investors, customers and other stakeholders to help shape an energy policy that enhances optionality across the entire energy value chain and supports the development and deployment of more carbon-free energy sources, while ensuring that each state we serve retains the ability to adequately plan and deploy resources that meet the needs of its citizens and communities.

As we work to achieve a low- to no-carbon future, we remain committed to our core principles of providing clean, safe, reliable and affordable energy to our customers.

Our responses contain forward-looking information. For cautionary statements regarding forward-looking information, please go to www.southernco.com/legal/home.cshtml.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	January 1 2018	December 31 2018	No	<Not Applicable>

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Financial control

C-EU0.7

(C-EU0.7) Which part of the electric utilities value chain does your organization operate in? Select all that apply.

Row 1

Electric utilities value chain

Electricity generation

Transmission

Distribution

Other divisions

Gas storage, transmission and distribution

Smart grids / demand response

Battery storage

Micro grids

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board Chair	Our Chair, who serves as CEO, has direct responsibility for climate-related issues including setting strategy for carbon emission reductions and planning for a low-carbon future. Key elements include leading strategic resource planning and associated capital allocation, setting annual budgets, evaluating unregulated low-carbon investments, leading climate-related risk assessments, investing in R&D, and assessing climate-related controls and compliance. In 2018, the Chair, in conjunction with senior executives and in consultation with the Board, led the analysis, recommendation and decision to set enterprise-wide GHG reduction goals of 50% by 2030 and low- to no-GHG emissions by 2050. The Chair engages with investors and stakeholders on climate-related topics, including the Climate Action 100 investor initiative, which provides valuable insight into investors' climate-related priorities and positions. The Chair takes this input into consideration in evaluating strategic priorities.
Director on board	The Board's Lead Independent Director (LID) also served as the Chair of the Operations, Environmental and Safety (OES) Committee in 2018. Throughout 2018, the LID (and other members of the Board) received reports on a broad range of climate-related topics at each Board meeting. There is quarterly reporting on Plant Vogtle Units 3 and 4 construction progress (new carbon-free nuclear generation) and robust discussions around integrated resource planning, scenario planning and analysis and its underlying assumptions. Since April 2018, quarterly reports on progress in achieving our GHG emission reduction goals are provided and discussed. During 2018 and 2019, the LID has directly engaged with a number of our investors on climate-related topics, including investors representing the Climate Action 100 initiative, which provides valuable insight into climate-related priorities and positions. The LID takes this input into consideration in evaluating strategic priorities.
Chief Executive Officer (CEO)	Our CEO, who serves as Chair, has direct responsibility for climate-related issues including setting strategy for carbon emission reductions and planning for a low-carbon future. Key elements include leading strategic resource planning and associated capital allocation, setting annual budgets, evaluating unregulated low-carbon investments, leading climate-related risk assessments, investing in R&D, and assessing climate-related controls and compliance. In 2018, the CEO, in conjunction with senior executives and in consultation with the Board, led the analysis, recommendation and decision to set enterprise-wide GHG reduction goals of 50% by 2030 and low- to no-GHG emissions by 2050. The CEO engages with investors and stakeholders on climate-related topics, including the Climate Action 100 investor initiative, which provides valuable insight into investors' climate-related priorities and positions. The CEO takes this input into consideration in evaluating strategic priorities.
Board-level committee	The OES Committee oversees strategy on climate-related and environmental and safety policy and planning issues, including business strategies designed to reduce carbon emissions, as well as programs and policies to protect the environment for employees, customers, contractors, and the public. The Committee receives regular reports on a range of climate-related topics at each Board meeting. There is quarterly reporting on Plant Vogtle Units 3 and 4 construction progress (new carbon-free nuclear generation) and robust discussions around integrated resource planning, scenario planning and analysis and its underlying assumptions. The Committee receives regular reports on operating units' safety and environmental activities and engages in robust discussions about carbon emissions, carbon risks and strategic planning. Since April 2018, quarterly reports on progress in achieving our GHG emission reduction goals are provided and discussed.
Board-level committee	The Audit Committee oversees the Company's financial reporting, audit process, internal controls and legal, regulatory and ethical compliance, which encompasses climate-related controls and compliance issues. In this role, the Audit Committee reviews and guides risk management policies that include climate-related risks.
Board-level committee	The Finance Committee reviews the financial strategy of and the strategic deployment of capital by the Company, which includes the Company's carbon emissions reduction strategy and the associated use of capital to accomplish the 2030 and 2050 GHG emission reduction goals. In this role, the Finance Committee reviews and guides annual budgets and business plans and oversees major capital expenditures with respect to climate-related issues.
Board-level committee	The Compensation and Management Succession (CMS) Committee is responsible for reviewing and approving compensation plans and programs, including performance-based compensation awards that incorporate carbon reduction and other environmental-related metrics. Beginning in 2018, the CMS Committee worked directly with the OES Committee to establish a new CEO incentive compensation award that ties a significant portion of the CEO's long-term equity incentive compensation for 2019 to the achievement of the Company's 2030 and 2050 GHG emission reduction goals and support execution of the business strategy. Through the CEO's award, the CMS Committee has set performance objectives and monitors implementation and achievement of those objectives with respect to execution of our business strategy related to reducing GHG emissions.
Other, please specify (Board Directors - NGCR Committee)	The Nominating, Governance, and Corporate Responsibility (NGCR) Committee oversees and reports to the full Board on the composition and competencies of the Board and its corporate governance policies. The Committee oversees the Company's practices and positions to advance its corporate citizenship, including environmental, sustainability and corporate social responsibility initiatives. The Committee receives quarterly updates on Southern Company's ongoing shareholder engagement program and feedback received from shareholders on Environmental, Social, and Governance (ESG) topics, including climate-related risks and disclosures.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings <i>Climate-related issues are integrated into all of the governance mechanism listed.</i>	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<p>Climate-related issues are integrated into all of the governance mechanisms listed. The OES Committee oversees, reviews and guides strategy on climate-related issues and significant environmental and safety policy and planning issues relevant to Southern Company, including but not limited to business strategies designed to address the long-term reduction of carbon emissions and related risks and opportunities across the system, as well as programs, policies, and procedures to protect the environment and provide a healthy and safe environment for employees, customers, contractors, and the public. In 2018, the Committee was responsible for overseeing the setting of performance objectives with respect to the 2030 and 2050 GHG emission reduction goals. In order to monitor the implementation of performance objectives and progress against goals and targets for addressing climate-related issues, the OES Committee receives regular reports on and engages in robust discussion on a range of climate-related topics at each board meeting. For example, since April 2018 regular quarterly reports are provided to and discussed with the OES Committee on the Company's progress in achieving its GHG emission reduction goals for 2030 and 2050. Regular quarterly reporting and robust discussions on the Company's progress with respect to the construction of Plant Vogtle Units 3 and 4 (new carbon-free nuclear generation) are also undertaken, as are regular robust discussions around integrated resource planning, scenario planning and analysis and the underlying assumptions for the scenario analysis. In addition, the OES Committee receives regular reports on operating units' safety and environmental activities and engages in robust discussions about carbon emissions and carbon risks and strategic planning. Further, beginning in 2018, the OES Committee worked directly with the Compensation and Management Succession Committee to establish a new incentive compensation award that ties a significant portion of the CEO's long-term incentive compensation for 2019 to the achievement of the Company's 2030 and 2050 GHG emission reduction goals and support execution of the business strategy.</p>

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<p>The NGCR Committee oversees and reports to the full Board on the composition and competencies of the Board and its committees. Specifically, the Committee considers the qualifications, skills and attributes of the directors and the needs of the full Board to ensure that the skills represented on the Board allow the Board to review and guide strategy and risk management policies. Competencies considered by the Committee include expertise in climate-related matters and environmental policy and regulation, among others.</p> <p>The NGCR Committee also oversees corporate governance policies, including but not limited to, reviewing and making recommendations to the Board regarding Southern Company's practices and positions to advance its corporate citizenship, including environmental, sustainability and corporate social responsibility initiatives. The NGCR Committee receives quarterly updates about Southern Company's ongoing shareholder engagement program and feedback received from shareholders on ESG topics, including climate-related risks and disclosures.</p>

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	The Audit Committee oversees the Company's financial reporting, audit process, internal controls and legal, regulatory and ethical compliance, which encompasses climate-related controls and compliance issues. In this role, the Audit Committee reviews and guides risk management policies that include climate-related risks.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	The Finance Committee reviews the financial strategy of and the strategic deployment of capital by the Company, which includes the Company's carbon emissions reduction strategy and the associated use of capital to accomplish those goals. In this role, the Finance Committee reviews and guides annual budgets and business plans and oversees major capital expenditures with respect to climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<p>The CMS Committee is responsible for reviewing and approving compensation plans and programs, including performance-based compensation awards that incorporate GHG and other environmental-related metrics. Executive officer compensation, including the CEO, includes climate-related metrics. Beginning in 2018, the CMS Committee worked directly with the OES Committee to establish a new incentive compensation award that ties a significant portion of the CEO's long-term incentive compensation for 2019 to the achievement of the Company's 2030 and 2050 GHG emission reduction goals and support execution of the business strategy. Through the CEO's award, the CMS Committee has set performance objectives and monitors implementation and achievement of those objectives with respect to ensuring execution of our business strategy related to reducing GHG emissions. Additionally, the CMS Committee is responsible for evaluating the performance of the CEO at least annually, discussing this evaluation with the Independent Directors, and approving the CEO's compensation each year for ratification by the Independent Directors. The CMS Committee also oversees the evaluation and review of the compensation level for the other executive officers.</p>

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Chief Financial Officer (CFO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other C-Suite Officer, please specify (Executive VP of Operations)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify (Senior VP Environmental & System Planning)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other C-Suite Officer, please specify (Executive VP, Chief Legal Officer & Chief Compliance Officer)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other C-Suite Officer, please specify (Executive VP and Pres. of External Affairs)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other committee, please specify (Southern Company Management Council)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

Southern Company's Chairman/CEO has direct responsibility for climate-related issues including setting short-term and long-term strategy with respect to carbon emission reductions and planning for a low-carbon future, in light of the anticipated transition of the industry to a low-carbon future. Key elements of this responsibility include, for example, leading strategic resource planning and associated capital allocation, setting annual budgets, evaluating unregulated low-carbon investments, leading climate-related risk assessments, investing in research and development, and assessing climate-related controls and compliance.

The CEO leads a team of the most senior officers across the Southern Company system, called the Southern Company Management Council ("SCMC"). Other members of the SCMC include the Company's CFO; EVP of operations; EVP and president of external affairs; EVP, chief legal officer and chief compliance officer; and the CEOs of each operating company and Southern Company Services.

The SCMC meets monthly to discuss major business decisions with respect to operations, employees and customers. For example, in 2018, the Chairman/CEO, in conjunction with the SCMC and in consultation with the Board of Directors, led the analysis of, the recommendation for and the decision to set Southern Company's enterprise-wide GHG reduction goals of 50% reduction in GHG emissions by 2030 (as compared to 2007) and low- to no-GHG emissions by 2050. At SCMC meetings, there are regular discussions of climate-related issues, such as resource planning across the system and at each operating company and related capital allocation decisions. Federal and state environmental regulation and policy, and engagement with regulators, customers, stakeholders and stockholders on carbon emission risks and opportunities are also regularly discussed.

Additional roles and responsibilities in monitoring climate-related issues include the following.

- The CFO also serves as Southern Company's Chief Risk Officer. Responsibilities related to climate change include capital allocation for major projects, system-wide risk assessments and financial disclosures which include environmental risk and carbon-related risks. The Chief Risk Officer is accountable to the CEO and the Board for ensuring that enterprise risk oversight and management processes are established and operating effectively. Officers and senior managers are responsible for working across the business to manage enterprise-level risk, monitor the performance of risk mitigation strategies and identify emerging risks. They meet routinely and engage regularly with the Board and its committees throughout the year.
- The EVP of Operations and his direct report, the SVP of Environmental and System Planning, have primary responsibility for system planning, which includes a regular full-scale assessment of Southern Company's generation fleet, including long-term planning for generation resources. The EVP of Operations and SVP of Environmental and System Planning are responsible for monitoring and reporting on progress against the GHG reduction goals. The SVP, Environmental and System Planning is integral to shareholder outreach and regularly participates in shareholder engagement meetings to provide insight on and discuss the development of the Company's GHG reduction goals, the Company's integrated resource planning process, scenario planning and environmental policies, programs, and progress. Southern Company's environmental affairs managers are responsible for environmental programs, including carbon policy activities, for the Southern Company system. The environmental affairs managers report to the SVP, Environmental and System Planning.
- The EVP, Chief Legal Officer and Chief Compliance Officer's responsibilities include legal and ethical compliance programs, interaction with state and federal regulators, and engaging with stakeholder and shareholders to discuss climate-related issues such as the GHG emission reduction goals and the risks and opportunities to the Company in the transition to a low-carbon future.
- The EVP and President of External Affairs' responsibilities include climate-related outreach at the state and federal levels across regulatory and legislative agencies, oversight of the Company's Corporate Responsibility Report and engaging with stakeholder and shareholders on carbon and climate policy issues.
- Operating Company CEOs (Alabama Power, Georgia Power, Mississippi Power, Southern Company Gas) are a part of the Southern Company Management Council and are responsible for interfacing at the state level on resource planning proposals, and outreach to state and federal legislators and their regulators, and directly oversee safety, compliance and risk management programs at their individual utilities.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).**Who is entitled to benefit from these incentives?**

Chief Executive Officer (CEO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

The CEO's compensation includes a new 3-year incentive award that is aligned with our 50% reduction in GHG emissions by 2030 goal and our low- to no-carbon emissions by 2050 goal. To demonstrate commitment to the reduction goals and facilitate the execution of business strategy to address the long-term reduction of carbon emissions, the Board tied a significant portion of the CEO's long-term equity incentive compensation (LTI) award to achievement of the GHG reduction goals. Ten percent of the CEO's 2019 LTI award is aligned with the goals, equivalent to a potential payout of up to \$2 million based on achieving maximum performance through 2021. The CMS Committee worked closely with the OES Committee throughout 2018 to design the award. They shared a desire to implement a measurable, quantitative component aligned with the 2030 goal of 50% reduction in GHG emissions and a qualitative component to incentivize actions aimed to achieve the 2050 goal of low- to no-carbon emissions. --The quantitative metric is defined in terms of net MW change and is earned by putting new zero-carbon resources in service and placing coal in retirement status or inactive reserve during the 3-year period from 2019 through 2021. For a target payout, the system must achieve a 3,080 net MW change. For a maximum payout (150% of target), the system must achieve a 3,518 net MW change. No payout is received if the system's net MW change by 2021 is less than 2,204, and a 50% payout is received if the system's net MW change by 2021 is 2,641. Performance metrics over the 3-year period are aligned with a trajectory to our 2030 goal of 50% emission reduction. --The qualitative metric creates an incentive to achieve low- to no-carbon emissions by 2050 through the CEO's leadership in advancing the energy portfolio of the future. Factors to be considered include: leadership in energy policy, nationally and within the industry; R&D investment; and new business development (e.g., renewables, distributed generation, distributed infrastructure). Achievement is determined by the Board. For maximum performance, a 30% modifier is applied to the payout determined under the quantitative metric.

Who is entitled to benefit from these incentives?

Other, please specify (Most employees, CEO & Senior Management)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

We believe in pay for performance and design our compensation program to attract, engage, competitively compensate, and retain our employees through a mix of base pay and incentive pay. Incentive pay includes an annual incentive program that includes operational and financial goals. Nearly all our employees participate in our annual Performance Pay Program. - Operational Goals: Several operational goals are important to reducing carbon emissions. Nuclear energy is one of the cleanest, most reliable and cost-effective fuel sources available today. Its importance in our portfolio continues to grow with the two new nuclear units being constructed at Plant Vogtle. Annual assessments of nuclear construction progress are part of the operational goals for many of our senior management team, including our CEO, CFO, and other C-suite officers. Nuclear plant operations are also part of the operational goals' payout for many senior managers and for thousands of employees at key company subsidiaries. We measure safety, reliability, and availability of the nuclear fleet because those metrics are crucial for delivering clean energy at a reasonable price. Customer satisfaction is a key performance metric. Customer satisfaction includes customer feedback on local perceptions of utility service, including the balance between maintaining affordable prices and minimizing environmental impact. Local customer preferences also drive the regulatory process and implementation of renewable resources and energy efficiency programs that could reduce the environmental impact. Generation availability and reliability is a key performance metric. This is important because it allows us to track efficient usage of our entire fleet, which includes a mix of lower emission fuel alternatives. - Financial Goals: Achieving annual financial goals, including EPS and business unit net income goals, is crucial to executing on our customer-

centric business model. Maintaining this business model provides the opportunity to effectively respond to future carbon regulations and the potential to succeed in an accelerated transition to a low carbon business environment.

Who is entitled to benefit from these incentives?

Other, please specify (Most employees, CEO & Senior Management)

Types of incentives

Monetary reward

Activity incentivized

Energy reduction target

Comment

We believe in pay for performance and design our compensation program to attract, engage, competitively compensate, and retain our employees through a mix of base pay and incentive pay. Incentive pay includes an annual incentive program that includes operational and financial goals. Nearly all our employees participate in our annual Performance Pay Program. - Operational Goals: Several operational goals are important to reducing carbon emissions. Nuclear energy is one of the cleanest, most reliable and cost-effective fuel sources available today. Its importance in our portfolio continues to grow with the two new nuclear units being constructed at Plant Vogtle. Annual assessments of nuclear construction progress are part of the operational goals for many of our senior management team, including our CEO, CFO and other C-suite officers. Nuclear plant operations are also part of the operational goals' payout for many senior managers and for thousands of employees at key company subsidiaries. We measure safety, reliability, and availability of the nuclear fleet because those metrics are crucial for delivering clean energy at a reasonable price. Customer satisfaction is a key performance metric. Customer satisfaction includes customer feedback on local perceptions of utility service, including the balance between maintaining affordable prices and minimizing environmental impact. Local customer preferences also drive the regulatory process and implementation of renewable resources and energy efficiency programs that could reduce the environmental impact. Generation availability and reliability is a key performance metric. This is important because it allows us to track efficient usage of our entire fleet, which includes a mix of lower emission fuel alternatives. - Financial Goals: Achieving annual financial goals, including EPS and business unit net income goals, is crucial to executing on our customer-centric business model. Maintaining this business model provides the opportunity to effectively respond to future carbon regulations and the potential to succeed in an accelerated transition to a low carbon business environment.

Who is entitled to benefit from these incentives?

Other, please specify (Most employees, CEO & Senior Management)

Types of incentives

Monetary reward

Activity incentivized

Efficiency project

Comment

We believe in pay for performance and design our compensation program to attract, engage, competitively compensate, and retain our employees through a mix of base pay and incentive pay. Incentive pay includes an annual incentive program that includes operational and financial goals. Nearly all our employees participate in our annual Performance Pay Program. - Operational Goals: Several operational goals are important to reducing carbon emissions. Nuclear energy is one of the cleanest, most reliable and cost-effective fuel sources available today. Its importance in our portfolio continues to grow with the two new nuclear units being constructed at Plant Vogtle. Annual assessments of nuclear construction progress are part of the operational goals for many of our senior management team, including our CEO, CFO, and other C-suite officers. Nuclear plant operations are also part of the operational goals' payout for many senior managers and for thousands of employees at key company subsidiaries. We measure safety, reliability, and availability of the nuclear fleet because those metrics are crucial for delivering clean energy at a reasonable price. Customer satisfaction is a key performance metric. Customer satisfaction includes customer feedback on local perceptions of utility service, including the balance between maintaining affordable prices and minimizing environmental impact. Local customer preferences also drive the regulatory process and implementation of renewable resources and energy efficiency programs that could reduce the environmental impact. Generation availability and reliability is a key performance metric. This is important because it allows us to track efficient usage of our entire fleet, which includes a mix of lower emission fuel alternatives. - Financial Goals: Achieving annual financial goals, including EPS and business unit net income goals, is crucial to executing on our customer-centric business model. Maintaining this business model provides the opportunity to effectively respond to future carbon regulations and the potential to succeed in an accelerated transition to a low carbon business environment.

Who is entitled to benefit from these incentives?

Other, please specify (Almost all employees of So. Gas)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

For employees of our Southern Company Gas subsidiary, including the CEO of Southern Company Gas, operational goals under the annual Performance Pay Program include leak response performance and pipeline replacement projects that reduce methane emissions.

Who is entitled to benefit from these incentives?

Other, please specify (Almost all employees of Southern Company Gas)

Types of incentives

Monetary reward

Activity incentivized

Efficiency project

Comment

For employees of our Southern Company Gas subsidiary, including the CEO of Southern Company Gas, operational goals under the annual Performance Pay Program include leak response performance and pipeline replacement projects that reduce methane emissions.

Who is entitled to benefit from these incentives?

Other, please specify (Management group, including CEO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

Our management group, including our CEO, CFO, and other C-suite officers, has a portion of the annual Performance Pay Program incentive tied to the achievement of individual goals. - Depending on the individual's position, individual goals may include environmental matters, energy efficiency, expansion of low- and no-carbon resources, and progress in research and development related to emission reduction efforts, among others. For the CEO, individual performance considered by the CMS Committee of the Board in determining his 2018 annual incentive award (and disclosed in Southern Company's proxy statement) included • Setting strategy for long-term GHG Reductions, including implementing long-term strategy to migrate generation fleet and power delivery infrastructure from "Big Iron" (i.e., traditional delivery model) to diversified infrastructure • Making strides on expanding solar, wind and gas platforms as part of the Southern Company system's commitment to reduce GHG emissions • Advancing ongoing engagement with stockholders and environmental stakeholder groups on climate-related topics • Overseeing construction at Plant Vogtle Units 3 and 4 that resulted in achievement of our principal year-end construction targets • Maintaining pivotal national leadership roles in energy, economic and security advisory roles • Enhancing corporate culture and human capital, including a strong emphasis and engagement in culture, diversity and inclusion, equality and human capital matters and continuing to advance the workforce and Company culture through focus on safety, compensation and benefits, diversity and inclusion, succession planning and development for all employees

Who is entitled to benefit from these incentives?

Other, please specify (Management group, including CEO)

Types of incentives

Monetary reward

Activity incentivized

Energy reduction project

Comment

Our management group, including our CEO, CFO and other C-suite officers, has a portion of the annual Performance Pay Program incentive tied to the achievement of individual goals. - Depending on the individual's position, individual goals may include environmental matters, energy efficiency, expansion of low- and no-carbon resources, and progress in research and development related to emission reduction efforts, among others. For the CEO, individual performance considered by the CMS Committee of the Board in determining his 2018 annual incentive award (and disclosed in Southern Company's proxy statement) included • Setting strategy for long-term GHG reductions, including implementing long-term strategy to migrate generation fleet and power delivery infrastructure from "Big Iron" (i.e., traditional delivery model) to diversified infrastructure • Making strides on expanding solar, wind and gas platforms as part of the Southern Company system's commitment to reduce GHG emissions • Advancing ongoing engagement with stockholders and environmental stakeholder groups on climate-related topics • Overseeing construction at Plant

Vogtle Units 3 and 4 that resulted in achievement of principal year-end construction targets • Maintaining pivotal national leadership roles in energy, economic and security advisory roles • Enhancing corporate culture and human capital, including a strong emphasis and engagement in culture, diversity and inclusion, equality and human capital matters and continuing to advance the workforce and Company culture through focus on safety, compensation and benefits, diversity and inclusion, succession planning and development for all employees

Who is entitled to benefit from these incentives?

Other, please specify (Management group, including CEO)

Types of incentives

Monetary reward

Activity incentivized

Efficiency project

Comment

Our management group, including our CEO, CFO, and other C-suite officers, has a portion of the annual Performance Pay Program incentive tied to the achievement of individual goals. - Depending on the individual's position, individual goals may include environmental matters, energy efficiency, expansion of low- and no-carbon resources, and progress in research and development related to emission reduction efforts, among others. For the CEO, individual performance considered by the CMS Committee of the Board in determining his annual 2018 incentive award (and disclosed in Southern Company's proxy statement) included • Setting strategy for long-term GHG reductions, including implementing long-term strategy to migrate generation fleet and power delivery infrastructure from "Big Iron" (i.e., traditional delivery model) to diversified infrastructure • Making strides on expanding solar, wind and gas platforms as part of the Southern Company system's commitment to reduce GHG emissions • Advancing ongoing engagement with stockholders and environmental stakeholder groups on climate-related topics • Overseeing construction at Plant Vogtle Units 3 and 4 that resulted in achievement of principal year-end construction targets • Maintaining pivotal national leadership roles in energy, economic and security advisory roles • Enhancing corporate culture and human capital, including a strong emphasis and engagement in culture, diversity and inclusion, equality and human capital matters and continuing to advance the workforce and Company culture through focus on safety, compensation and benefits, diversity and inclusion, succession planning and development for all employees

Who is entitled to benefit from these incentives?

Other, please specify (Management group, including CEO)

Types of incentives

Monetary reward

Activity incentivized

Behavior change related indicator

Comment

Our management group, including our CEO, CFO, and other C-suite officers, has a portion of the annual Performance Pay Program incentive tied to the achievement of individual goals. - Depending on the individual's position, individual goals may include environmental matters, energy efficiency, expansion of low- and no-carbon resources, and progress in research and development related to emission reduction efforts, among others. For the CEO, individual performance considered by the CMS Committee of the Board in determining his 2018 annual incentive award (and disclosed in Southern Company's proxy statement) included • Setting strategy for long-term GHG Reductions, including implementing long-term strategy to migrate generation fleet and power delivery infrastructure from "Big Iron" (i.e., traditional delivery model) to diversified infrastructure • Making strides on expanding solar, wind and gas platforms as part of the Southern Company system's commitment to reduce GHG emissions • Advancing ongoing engagement with stockholders and environmental stakeholder groups on climate-related topics • Overseeing construction at Plant Vogtle Units 3 and 4 that resulted in achievement of principal year-end construction targets • Maintaining pivotal national leadership roles in energy, economic and security advisory roles • Enhancing corporate culture and human capital, including a strong emphasis and engagement in culture, diversity and inclusion, equality and human capital matters and continuing to advance the workforce and Company culture through focus on safety, compensation and benefits, diversity and inclusion, succession planning and development for all employees

Who is entitled to benefit from these incentives?

Other, please specify (Senior Management)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

Our strategy is to maximize long-term value to shareholders through a customer, community, and stakeholder focused business model that produces sustainable levels of return on energy infrastructure, and our long-term incentive program is intended to further this goal by directly tying a portion of compensation to the interests of stockholders. For senior management, including our CEO, CFO, and other C-suite officers, a substantial portion of their compensation is tied to the long-term incentive award, which includes measuring total shareholder return over a three-year period. Crucial to creating long-term shareholder value is the effective management of the risks and opportunities presented by carbon emission reductions and successfully sustaining and evolving our business as we transition to a low- to no-carbon future. Our strategy for reducing carbon emissions includes aggressively growing our investment in renewable energy generation, modernizing the grid to optimize technological advancements, increasing the use of natural gas, building new nuclear units, continuing our industry-leading research and development efforts and investing in energy efficiency for savings on both sides of the meter. While these monetary awards are not specifically tied to emission reductions, effective implementation of these strategies results in direct Scope 1 emission reductions.

Who is entitled to benefit from these incentives?

Other, please specify (Senior Management)

Types of incentives

Monetary reward

Activity incentivized

Energy reduction project

Comment

Our strategy is to maximize long-term value to shareholders through a customer, community, and stakeholder focused business model that produces sustainable levels of return on energy infrastructure, and our long-term incentive program is intended to further this goal by directly tying a portion of compensation to the interests of stockholders. For senior management, including our CEO, CFO and other C-suite officers, a substantial portion of their compensation is tied to the long-term incentive award, which includes measuring total shareholder return over a three-year period. Crucial to creating long-term shareholder value is the effective management of the risks and opportunities presented by carbon emission reductions and successfully sustaining and evolving our business as we transition to a low- to no-carbon future. Our strategy for reducing carbon emissions includes aggressively growing our investment in renewable energy generation, modernizing the grid to optimize technological advancements, increasing the use of natural gas, building new nuclear units, continuing our industry-leading research and development efforts and investing in energy efficiency for savings on both sides of the meter. While these monetary awards are not specifically tied to emission reductions, effective implementation of these strategies results in direct Scope 1 emission reductions.

Who is entitled to benefit from these incentives?

Other, please specify (Senior Management)

Types of incentives

Monetary reward

Activity incentivized

Efficiency project

Comment

Our strategy is to maximize long-term value to shareholders through a customer, community, and stakeholder focused business model that produces sustainable levels of return on energy infrastructure, and our long-term incentive program is intended to further this goal by directly tying a portion of compensation to the interests of stockholders. For senior management, including our CEO, CFO and other C-suite officers, a substantial portion of their compensation is tied to the long-term incentive award, which includes measuring total shareholder return over a three-year period. Crucial to creating long-term shareholder value is the effective management of the risks and opportunities presented by carbon emission reductions and successfully sustaining and evolving our business as we transition to a low- to no-carbon future. Our strategy for reducing carbon emissions includes aggressively growing our investment in renewable energy generation, modernizing the grid to optimize technological advancements, increasing the use of natural gas, building new nuclear units, continuing our industry-leading research and development efforts and investing in energy efficiency for savings on both sides of the meter. While these monetary awards are not specifically tied to emission reductions, effective implementation of these strategies results in direct Scope 1 emission reductions.

Who is entitled to benefit from these incentives?

Other, please specify (Almost all employees)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

Southern Excellence Awards are given to employees for immediate recognition of superior performance. Employees who work to further climate-related initiatives, including emission reductions, R&D that furthers carbon-free and carbon-neutral generation resources, energy efficiency programs, the electrification of transportation and the promotion of our environmental stewardship and sustainable business practices are eligible to receive these awards.

Who is entitled to benefit from these incentives?

Other, please specify (Almost all employees)

Types of incentives

Monetary reward

Activity incentivized

Energy reduction project

Comment

Southern Excellence Awards are given to employees for immediate recognition of superior performance. Employees who work to further climate-related initiatives, including emission reductions, R&D that furthers carbon-free and carbon-neutral generation resources, energy efficiency programs, the electrification of transportation and the promotion of our environmental stewardship and sustainable business practices are eligible to receive these awards.

Who is entitled to benefit from these incentives?

Other, please specify (Almost all employees)

Types of incentives

Monetary reward

Activity incentivized

Efficiency project

Comment

Southern Excellence Awards are given to employees for immediate recognition of superior performance. Employees who work to further climate-related initiatives, including emission reductions, R&D that furthers carbon-free and carbon-neutral generation resources, energy efficiency programs, the electrification of transportation and the promotion of our environmental stewardship and sustainable business practices are eligible to receive these awards.

Who is entitled to benefit from these incentives?

Other, please specify (Almost all employees)

Types of incentives

Monetary reward

Activity incentivized

Behavior change related indicator

Comment

Southern Excellence Awards are given to employees for immediate recognition of superior performance. Employees who work to further climate-related initiatives, including emission reductions, R&D that furthers carbon-free and carbon-neutral generation resources, energy efficiency programs, the electrification of transportation and the promotion of our environmental stewardship and sustainable business practices are eligible to receive these awards.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	2	
Medium-term	2	10	
Long-term	10	30	

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	We have a robust enterprise risk management program that facilitates identification, communication and management of the most significant risks in a formal process. Within this framework, risk governance and oversight are largely embedded in existing organizational and control structures. As part of the governance structure, the Chief Risk Officer is accountable to the CEO and the Board for ensuring that enterprise risk oversight and management processes are established and operating effectively. Officers and senior managers are responsible for working across the business to manage enterprise-level risk, monitor the performance of risk mitigation strategies & identify emerging risks. They meet routinely & engage regularly with the Board & its committees throughout the year. The OES Committee of the Board is charged with review & oversight of the significant operating segments & significant environmental and safety policies, including addressing long-term reduction of carbon emissions.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

Enterprise Risk Management, or ERM, generally refers to a comprehensive approach to risk management and oversight throughout an organization that is integrated with strategic planning activities (prioritize risks and allocate resource appropriately to better manage the business and mitigate risk). These risks include climate-related risks to the enterprise. While Southern Company has a group of employees designated to facilitate and implement its ERM program, it is generally understood that risk management is everyone's responsibility from the Board of Directors to each employee. The goal of ERM at Southern Company is to provide a clear understanding of the risks facing the Company and to ensure that oversight and accountability are appropriately defined. Risk governance and oversight is largely embedded in existing organization and control structure such as normal management oversight, project review processes, internal auditing, legal and regulatory compliance programs, and Sarbanes Oxley compliance programs. ERM governance provides structure to bring together these efforts in order to facilitate communications across entities and functions, promote consistency and the use of best practices, create a unified view of risk, and help incorporate risk into strategy considerations. The ERM program includes a risk profile process which is used to identify, assess, and plan for the mitigation of risks, including climate-related risks, throughout the Southern Company system and culminates in formal risk profiles for each participating entity. Participating entities are identified based on their ability to materially affect Southern Company. Southern Company's risk profile process is a bottom-up approach to risk identification and performed from a business unit and functional area perspective for robustness. This approach utilizes the expertise of our employees in identifying the major risks and promotes a risk aware culture across the Company. The risk profile process currently includes approximately 20 participating entities (operating companies, business units and functional areas) and risks of materiality which include climate-related risks, such as environmental regulations/legislations as well as grid and generation resiliency. Risks are identified based on potential financial impact to the business with levels of impact ranging from tens of millions of dollars to billions of dollars on the high end of the scale.

Additionally, information gathered through non-ERM processes, such as disclosures, auditing, and system and financial planning, are used for insight and monitoring of the ERM program. All risks are categorized and evaluated and ultimately the top risks are consolidated into a Southern Company profile which require the focused attention of the Board and management council. Profiles are used as inputs to various business processes at the entity, corporate, and Board of Director levels. Carbon related risk has been incorporated in Southern's ERM program's risk profile process since early 2000's with an initial focus on the risk of laws and regulations.

The Board of Directors is responsible for oversight of strategy and risk, including risks related to climate-related matters. The Board recognizes the potential impacts on our business and the transitional risks and opportunities the utility industry faces in a future that places additional pressure on carbon emissions. The Board regularly assesses the company's short- and long-term business strategy, including the long-term sustainability of its business, in light of these climate-related risks and opportunities. Issues that are the subject of active discussions at the Board and Board committee meetings include climate-related risks, regulatory compliance, energy efficiency, renewable energy generation, and emerging technology.

All Board members are actively involved in our risk oversight function. The Board reviews our risk profile and ensures that oversight of each risk is properly designated to an appropriate Board committee or the full Board. Each Board committee provides ongoing oversight for the risk designated to it, reports to the Board on their oversight activities and elevates review of risk issues to the Board as appropriate. Independent Directors chair each Board committee, and each committee has a designated member of executive management as the primary responsible officer for providing information and updates to the Board committee related to significant risks. There is regular, open communication between management and the Board on these topics throughout the year.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	All relevant environmental laws and regulations are incorporated and business risk evaluated in the semi-annual risk profile process.
Emerging regulation	Relevant, always included	All relevant environmental laws and regulations are incorporated and business risk evaluated in the semi-annual risk profile process.
Technology	Relevant, always included	R&D, cybersecurity, and generation technology risks are incorporated and business risk evaluated in the semi-annual risk profile process.
Legal	Relevant, always included	Litigation risks are incorporated and business risk evaluated in the semi-annual risk profile process.
Market	Relevant, always included	Financial reporting and controls, financial integrity, long-term growth, demand of securities, and industry transformation are incorporated and business risk evaluated in the semi-annual risk profile process.
Reputation	Relevant, always included	Corporate image, ethics and compliance incidents, safety, and workforce talent and culture are incorporated and business risk evaluated in the semi-annual risk profile process.
Acute physical	Relevant, always included	Infrastructure for generation, transmission, and distribution is exposed to physical risks. Preparation includes redundant and flexible operations functions and facilities, as well as coordinating drills for responding to risks such as storms. Business risks evaluated in the risk profile process.
Chronic physical	Relevant, always included	Hardening and resiliency efforts are a focus for generation facilities, the transmission system, and the distribution system. Preparation may include physical strengthening of structures, enclosing equipment, undergrounding of lines, and additional tie lines. Business risks evaluated in the risk profile process.
Upstream	Relevant, always included	Fuel price volatility is incorporated and business risk evaluated in the semi-annual risk profile process.
Downstream	Relevant, always included	Customer reputation is incorporated and business risk evaluated in the semi-annual risk profile process.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

For the energy industry, high-capital, long-life assets require long-term planning. The current transition in the energy industry along with the potential for a low- to no-carbon future is placing new and different pressures on the traditional energy production and delivery model, creating uncertainty and presenting challenges. The investor community recognizes this as potential risk.

Southern Company aims to minimize our exposure to climate-related risk across the energy value chain as we make, move and sell energy to a wide customer base. Our business model relies heavily on state-regulated electric and natural gas investments as well as long-term contracted energy infrastructure, which differentiates Southern Company from other businesses. We believe that operating a customer-centric business model provides the opportunity to effectively respond to future carbon regulations and the potential to succeed in an accelerated transition to a low carbon business environment.

By continuing to make major energy decisions that are in the best interest of customers, appropriately consider fuel and carbon risks, and are approved by our state regulators, we expect to continue to receive fair regulatory treatment of our state-regulated investments. We believe that investment risk to these rate-regulated assets is limited.

In addition, grid and generation resilience are focus areas for the Southern Company Board ensuring processes are in place to minimize physical risks to the Southern Company system.

We are managing our climate-related risks by aggressively growing our investment in renewable energy, modernizing the grid, increasing the use of natural gas, building the first new nuclear generating units in a generation, solving difficult energy challenges through robust R&D, and investing in energy efficiency for savings on both sides of the meter.

We have already made significant progress with a full portfolio approach to electric generation resource diversity, focused on maintaining reliability and affordability while reducing carbon emissions. Since 2010, through our subsidiaries, we have invested over \$20 billion in developing low-carbon and carbon-free energy assets and more than 5,200 MW of renewable generating capacity has been added across the system along with approximately 6,300 MW of coal- and oil- related retirements completed or announced as of July 2019. Our current portfolio of more than 12,000 MW of carbon-free and carbon-neutral resource generation capacity has established a foundation enabling us to continue our carbon reduction efforts.

We've reduced nitrogen oxides emissions by 89 percent since 1990 and sulfur dioxide emissions by 98 percent – while serving a 30 percent greater demand. Since 2007, we have reduced mercury emissions by over 90 percent and GHG emissions by 35 percent.

Our Southern Company Gas subsidiary is a founding member in Our Nation's Energy (ONE) Future and for our natural gas distribution operations, we aspire to remain aligned with ONE Future's 2025 goal. Our natural gas distribution operation's intensity for 2017 using the ONE Future methodology is 0.134, well below ONE Future's 2025 goal of 0.44 percent for local distribution companies.

Transitioning to a low-carbon future will require continued advancement in technology. Opportunities to reduce our carbon emissions include completing construction of Plant Vogtle units 3 and 4, seeking useful life extensions for our existing 3,700-MW nuclear fleet, continuing to grow our sizable renewable energy resources, deploying battery energy storage and continuing to modernize the power grid for greater resiliency. We also see potential to invest through our PowerSecure subsidiary in new technologies that may emerge.

Our dedicated R&D organization leverages a diverse research portfolio and collaborates with the U.S. government, other utilities, universities and industry in development of new technologies for energy production, delivery and end-use. This leadership is inventing innovative solutions for a low-carbon energy future.

We are engaging with policymakers, investors, customers and other stakeholders to help shape an energy policy that enhances optionality across the entire energy value chain and supports the development and deployment of more carbon-free energy sources, while ensuring that each state we serve retains the ability to adequately plan and deploy resources that meet the needs of its citizens and communities.

We believe we can successfully sustain and evolve our business as we transition to a low- to no-carbon future. Our carbon reduction goals are a critical step forward for Southern Company. As we work to achieve those goals, we remain committed to our core principles of providing clean, safe, reliable and affordable energy to our customers.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Mandates on and regulation of existing products and services

Type of financial impact

<Not Applicable>

Company- specific description

Costs associated with GHG policies could be significant to the utility industry and the Southern Company system. However, the ultimate impact of these potential policies will depend on various factors, such as the policy approach, framework and stringency, any state-level adoption and implementation requirements, the availability and cost of any deployed compliance strategies and associated technologies, and the outcome of any associated legal proceedings. Southern Company is engaged across the energy value chain as we make, move, and sell energy to a wide customer base. Southern Company's business model relies heavily on state-regulated electric and natural gas investments as well as long-term contracted energy infrastructure. Southern Company's portfolio includes: natural gas, coal, nuclear, and renewable electric generating assets and energy storage, electric transmission and distribution, local natural gas distribution, midstream natural gas transmission, and distributed energy infrastructure. In 2018, the generation mix was 27% coal, 47% natural gas, 15% nuclear, and 11% renewables/other. Future GHG policies, depending on the approach and structure, could present a range of risks and opportunities. Since the Southern Company system's current portfolio includes assets that rely upon the utilization of carbon-based fuels, future GHG policies could increase the Southern Company system's costs (e.g., operating costs) and, thus, increase customer prices associated with the ultimate delivery of energy. Opportunities include the increase in energy efficiency through electrification and natural gas utilization to reduce GHG emissions across the entire economy.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

2000000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

In 2018, the Southern Company system's Scope 1 GHG emissions were 102 million metric tons of CO₂e, representing the Company's direct & current exposure to future GHG policies, all things held constant. This exposure, however, is dynamic due to numerous factors – e.g. our electric generating fleet's ability to dynamically dispatch due to changing unit-level economics. Based on the Southern Company system's 2018 Scope 1 GHG emissions, a hypothetical GHG policy resulting in a \$20 per metric ton of CO₂e price would have exposed the Southern Company system's customers to approximately \$2 billion in higher operating costs in 2018; however, this cost does not account for any mitigation measures that could have materialized—e.g., dispatching our electric generating fleet to reduce GHG emissions—or any opportunities that might offset the higher operating costs. Other potential costs may arise that are not captured in this analysis – e.g., capital costs associated with deploying new assets.

Management method

Southern Company aims to minimize our exposure across the energy value chain as we make, move, and sell energy. We believe that operating a customer-centric business model provides the opportunity to effectively respond to future GHG policies and the potential to succeed in a transition to a low carbon business environment. Southern has been constructively engaging in GHG policy and rulemaking (see Section C12) and has anticipated and incorporated GHG risk into its scenario planning and enterprise risk management practices for some time. These practices have allowed Southern to evaluate and manage the risk around GHG emissions and make decisions that are in the best interest of the customers. Southern has also applied substantial resources to the technology necessary to move toward a low-carbon future and is committed to providing clean, safe, reliable and affordable energy, while transitioning to low- to no-carbon operations by 2050. Additional management cost would be anticipated; however, without details related to the policy, it is difficult to provide an estimate of the level of support necessary.

Cost of management

0

Comment

The potential financial impact of GHG policies depends on numerous unknowns – e.g., a policy's approach, framework, and stringency, any state-level adoption and implementation requirements, the availability and cost of any deployed compliance strategies and associated control technologies, and the outcome of any associated legal proceedings. Additionally, future GHG policies may present opportunities for Southern Company by incentivizing energy efficiency through electrification and natural gas utilization to reduce GHG emissions across the entire economy. The Southern Company system's financial exposure to future GHG policies will ultimately depend on the policy approach, framework, and stringency, any state-level adoption and implementation requirements, the availability and cost of any deployed compliance strategies and associated control technologies, and the outcome of any associated legal proceedings.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Market: Changing customer behavior

Type of financial impact

<Not Applicable>

Company- specific description

The energy sector is rapidly evolving, driven by customer preferences, technology advancements, commodity process, energy security and resiliency efforts, and environmental, social, and governance initiatives. Southern Company is committed to providing clean, safe, reliable and affordable energy, while transitioning to low- to no-carbon operations by 2050. Customers in the retail electric service territory of Georgia Power, Alabama Power, and Mississippi Power are increasingly conscious of their environmental impacts and are actively setting their own carbon reduction goals. There is a risk of reduced demand for retail electric services due to customer implementation of distributed generation.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

339000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

In 2018, PowerSecure, a Southern Company subsidiary, had annual revenue for energy efficiency and microgrid services of approximately \$339 Million. This value was used as a placeholder to estimate potential annual financial impact due to deployment of microgrids, or similar technologies, to meet customer demand in the retail electric service territory; actual impacts would be expected to vary from this value. Costs associated with a transition to low emission technologies could be significant to the utility industry and the Southern Company system along with our customers. The ultimate impact of this transition will depend on the development of new and more cost-effective energy conversion, delivery and use technologies. Southern Co. has actively engaged in robust, R&D that grows the value of energy services to customers since the 1960s.

Management method

In 2016, Southern Company acquired PowerSecure for \$425 million. PowerSecure is a premier provider of distributed infrastructure, offering primarily commercial and industrial customers innovative solutions to meet their individual reliability, energy efficiency or green objectives. Bringing this subsidiary into the Southern Company system enhances our ability to meet customer demands and provide services within the retail electric footprint and beyond. In addition, retail operating companies continue to work with customers to provide solutions which enhance reliability as well as sustainability, such as the solar panels installed by Georgia Power at the Atlanta Falcons stadium. The Southern Company system is continuing to gain expertise and drive down costs of distributed generation through R&D and practical applications.

Cost of management

425000000

Comment

In addition to PowerSecure's expertise in the distributed infrastructure arena, Southern Company's R&D strategy has a goal of at least 6 technological successes: • Beneficial electrification with newly developed & broadly deployed technologies including those for transportation, buildings, industrial processes & food production; • Solar, wind, energy storage & other carbon-free energy resources – supported by advancements in cost and efficiency through R&D - developed & operated in centralized & microgrid configurations & behind the meter as the lowest-cost energy sources; • Resilient, fully integrated energy delivery grids allowing increased renewables; • Cost-effective carbon capture use and storage (CCUS) technologies developed and operating on an efficient, reliable natural gas-fired generation fleet; • New utility business models created from hydrogen production, delivery and end-use technologies; and • Advanced nuclear power generation developed with superior safety benefits.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Market: Changing customer behavior

Type of financial impact

<Not Applicable>

Company- specific description

The energy sector is rapidly evolving, driven by customer preferences, technology advancements, commodity process, energy security and resiliency efforts, and environmental, social, and governance initiatives. Customers are actively seeking options to decrease their energy usage. This includes making their homes more energy efficient. Building codes are evolving, and new homes are constructed to be more energy efficient, decreasing the demand for electricity. There is potential for decrease in electricity usage by retail electric customers (customers of Alabama Power, Georgia Power, and Mississippi Power) in years to come.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

14000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The ultimate impact of this transition will depend on the level of uptake in the construction arena for new energy efficiency products and techniques which reduce the energy demand for a given home. The calculated value represents a single year's impacted revenue in the year 2039, assuming a constant level of adoption of energy efficiency features by the construction industry in the Southern Company system's service territory over the next 20 years. These new energy efficient homes are assumed to displace existing homes that lack the new energy efficient features in this high-level estimate. The actual financial impact would be expected to vary from this high-level estimated value.

Management method

Southern Company's R&D portfolio over the past decade has returned benefits exceeding 10 times our investment. The overall focus of this research is to provide a variety of future technology options for commercial, industrial and residential customers. In addition, Southern Company is a founding partner of Energy Impact Partners (EIP), a \$700 million venture capital fund that invests in early stage technology companies impacting the energy and utility industries. EIP has invested in 23 portfolio companies since its inception in 2016 and already has achieved several successful exits. These successes include Ring, the smart doorbell maker acquired in 2018 by Amazon, and Greenlots, the leading electric vehicle charging infrastructure company acquired by Shell in 2019. Collaborating with the EIP portfolio companies helps Southern Company remain on the cutting edge of disruptive technology while uncovering new revenue opportunities and identifying potential partnerships. This is just one of the ways we are working to shape the future of energy. By leveraging these partnerships and gaining a foothold in new revenue streams, the Southern Company system can then provide products and services to customers that go beyond meeting their electricity needs. The cost of management represents the 2018 budget in R&D areas related to end use technologies and distributed generation and storage. This is not a comprehensive representation of cost of management.

Cost of management

5100000

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.**Identifier**

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Type of financial impact

Increased revenue through demand for lower emissions products and services

Company-specific description

The transportation sector accounted for 29 percent of the total U.S. CO₂ emissions in 2017 according to EPA. Transitioning this sector from the heavy use of fossil fuels presents the largest opportunity in realizing a low-to no-carbon future. With overall carbon

reductions as the objective, emissions reductions in the electricity sector can provide important motivation for further electrification of the remaining end-use sectors. We are exploring opportunities for carbon reductions from the transportation sector through our electric vehicle (EV) and hydrogen research efforts. In the Southern Company retail electric service territory, there are estimated to be over 3.2 million vehicles based on state vehicle registrations from 2017, there is significant opportunity for increased electric vehicle adoption in our service territory.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

260000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The ultimate impact of electrifying the transportation sector will depend on various factors, such as state adoption and implementation of requirements, tax incentives, vehicle cost, and the advancement of electric vehicles and/or battery technology. The financial impact calculated here assumes a 10% adoption of electric vehicles across our territory which could increase electricity sales up to 2.5% across all sectors. The value provided represents an estimated annual value.

Strategy to realize opportunity

We are also actively engaged in advancing the electrification of transportation, which will reduce transportation costs for customers while reducing carbon emissions. This includes: Promoting customer education and awareness. Working with vehicle manufacturers and EPRI to bring viable on-road EV technologies to market. Helping develop charging infrastructure and improve vehicle/grid integration plans for efficient distribution. Offering lower electricity rates and programs for off-peak usage, which helps commercial and industrial customers reduce their operating costs and environmental impact. Accelerating the growth of the U.S. EV infrastructure as a member of the Alliance for Transportation Electrification.

Cost to realize opportunity

1000000

Comment

Cost is reflective only of annual dedicated R&D budget including funding of projects within the EPRI. There would be additional costs associated with realizing this opportunity that are not estimated here.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Type of financial impact

Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon

Company-specific description

To date, none of the three states where we operate electric utilities has enacted legislation or regulations to specifically regulate CO₂ emissions or mandates for certain levels of renewable resources. But we understand our customers' needs and preferences for clean, safe, reliable and affordable energy, as well as a continuing desire of many of our stakeholders to reduce our carbon emissions. We will work within each state's regulatory framework – with support from customers, state regulators, and environmental agencies – to ensure that our carbon reduction efforts are supportive of customers' needs and preferences. Our

subsidiaries are focused on strategically increasing the role of renewables in our generation mix. A pioneer in distributed power systems, PowerSecure, a subsidiary of Southern Company, has engineered and installed over 2 GW of distributed generation systems and is the market leader in microgrid solutions deployment with 85% of the U.S. market share as acknowledged by GreenTech Media Research. Additionally, as part of Georgia Power's 2016 Integrated Resource Plan, the Georgia Public Service Commission approved a Community Solar, Simple Solar, and C&I REDI Program. All of these programs allow customers the option to participate based on the various program requirements, which all support and contribute to the growth of solar in Georgia and allow the associated renewable energy credits (RECs) to be retired on the customer's behalf. Since 2010, Southern has added more than 5,200 MW of renewable generating capacity through our subsidiaries. As of July 2019, Southern Company subsidiaries have plans to install an additional 7,400 MW of renewable generating capacity and 80 MW of battery storage. When the Southern Company system's retail electric utility subsidiaries purchase energy from or build renewable generation sources, if they have the right to the RECs associated with these resources, they retain the ability to use the RECs to serve their customers with renewable energy or sell the RECs, either bundled with energy or separately, to third parties for the benefit of customers.

Time horizon

Current

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

339000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The 2018 annual revenue for energy efficiency and microgrid services for PowerSecure was used here as a placeholder for the potential financial impact from increased distributed generation in the Southern Company system. The opportunity for capital investment in low-emitting energy sources could be significant to the utility industry and the Southern Company system. The ultimate impact of low- to no-emission resources will depend on various factors, such as technology development and availability, cost and regulatory and tax drivers.

Strategy to realize opportunity

The energy sector is rapidly evolving, driven by customer preferences, technology advancements, commodity process, energy security and resiliency efforts, and environmental, social, and governance initiatives. Southern Company is committed to providing clean, safe, reliable and affordable energy, with a goal of transitioning to low- to no-carbon operations by 2050. We have partnered with the Army, Navy, Marine Corps and Air Force to develop innovative renewable energy generation projects on 33 Federal sites. Southern Company and its subsidiaries Alabama Power, Georgia Power, and Mississippi Power have military solar projects online or under contract totaling more than 400 MW as of July 2019. This partnership with the Department of Defense helps meet the military's goals to support the development of new renewable generation resources nationwide while the operating companies, generally, receive the energy and RECs from the projects which they may use to serve customers or sell to third parties for the benefit of customers. Through our planning process and customer partnerships, Southern Company and its subsidiaries will continue to evaluate and develop program designs to meet customers' renewable environmental goals. We also have numerous R&D projects underway to determine the potential of emerging cost-effective renewable resources and technologies.

Cost to realize opportunity

1800000

Comment

Cost shown is reflective of annual R&D budget dedicated to renewables, energy storage and distributed generation. There would be additional costs associated with realizing this opportunity that are not estimated here.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Type of financial impact

Better competitive position to reflect shifting consumer preferences, resulting in increased revenues

Company-specific description

We have more than 20 research and development projects underway across our system to determine the potential of different renewable resources and technologies. Research areas include solar photovoltaic (PV) deployment, operation and maintenance, solar resource forecasting, wind generation, biomass-fueled power generation and bulk-power system integration of variable generation sources. Over the past 10 years, we have made major investments in smart grid technologies including deploying approximately 4.6 million smart meters, or advanced metering infrastructure, helping customers better manage their energy use and save money. We are also conducting collaborative, industry-wide research with EPRI, for the ongoing development of transmission system monitoring, diagnostics and visualization tools that will facilitate decisions and mitigation measures to enhance system performance, efficiency and reliability. Our long and successful history of incorporating distributed generation into our energy mix began in the late 1970s and continues today. The integration of cost-effective energy storage with intermittent renewable generation is one of the key options that can help lower carbon emissions. Alabama Power and Georgia Power have developed Smart Neighborhoods in Birmingham and Atlanta to evaluate how high-performance homes operate and benefit both customers and the utility. These projects will help to develop new methods to integrate solar, battery storage and controllable devices and could provide a model for developing similar communities throughout the Southeast. Alabama Power's new Smart Neighborhood Builder Program partners with homebuilders to build energy efficient homes that feature advanced energy products and home automation.

Time horizon

Current

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

339000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The financial impact captured here is reflective of the 2018 revenues for energy efficiency and microgrid services from PowerSecure. The opportunity for capital investment in new products and services that meet customer preferences could be significant to the utility industry and the Southern Company system. Cost of capital investments is dependent on the speed new low- to no- emission resource development, installation costs, and customer preferences.

Strategy to realize opportunity

Southern subsidiary, PowerSecure, has cemented its reputation as a leader in the distributed infrastructure market. The company customizes advanced energy solutions that provide commercial, industrial, and institutional customers with resiliency, flexibility and cost efficiencies. Southern will also continue our industry-leading R&D, as well as active participation in the Electric Power Research Institute (EPRI), with particular focus on technologies that lower GHG emissions. A pioneer in distributed power systems, PowerSecure, has engineered and installed over 2 GW of distributed generation systems and is the market leader in microgrid solutions deployment with 85% of the U.S. market share as acknowledged by GreenTech Media Research. In addition, Gulf Power, which was a part of the Southern Company system through the end of 2018, is operating a 1 MWh Tesla lithium-ion battery energy storage system in a research demonstration with Southern Company R&D and EPRI.

Cost to realize opportunity

3900000

Comment

Cost shown is reflective of the 2018 R&D budget related to end-use technologies. There would be additional costs associated with realizing this opportunity that are not estimated here.

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted	Beyond providing clean, safe, reliable, and affordable energy to our customers, we are ensuring that our customers can efficiently use our product. In May 2016, we acquired PowerSecure, a proprietary distributed infrastructure, energy efficiency and utility infrastructure solutions company. With over 1.5 gigawatts (GW) of distributed energy resources under management, PowerSecure has a national footprint and continues to grow. In October 2016, PowerSecure and Bloom Energy formed a strategic venture where Bloom servers (fuel cells) are paired with PowerSecure's energy storage solutions. In June 2017, PowerSecure & Advanced Microgrid Solutions announced an alliance with the goal of accelerating the cost-effective deployment of distributed energy resources. We believe this positions us to serve a nationwide base of customers on both sides of the meter more reliably and efficiently. Southern Company is a primary partner in Energy Impact Partners (EIP). EIP is a private equity firm that strategically invests in innovative technologies, services & products throughout the electricity supply chain from generation to consumption. Through collaboration with its investors base, EIP seeks to bring the best companies' buying power & vision in the industry to bear on the emerging energy landscape. In 2018, PowerSecure completed the first-of-its-kind biogas microgrid at Butler Farms in rural Lillington, NC. The farm captures and burns methane gas from manure to create a renewable energy called biogas. We are a leader in offering innovative electric and natural gas efficiency programs that help our customers use energy more wisely. These programs have been successful across our state-regulated electric utilities, between 2000 and 2018, energy efficiency and demand response programs have helped reduce peak demand of electricity by more than 5,300 MW and avoid more than 3 billion kWh of energy use. Additionally, over the past 8 years, Southern Company Gas' energy efficiency programs have helped reduce demand by more than 130 million therms and reduced customers' emissions. Looking forward, we are on a path to finding more ways for our customers to save money while also reducing GHG emissions by investing in energy efficiency for electric customers and natural gas customers. Energy efficiency programs and associated customer savings will remain a focus of the Company.
Supply chain and/or value chain	Impacted	Southern Company's OES Board Committee reviews significant operations which include fuel cost and availability. Southern Company Gas has been actively investing in infrastructure modernization and improvements to replace aging natural gas pipelines. Generation plants have contracts in place with firm transportation requirements.
Adaptation and mitigation activities	Impacted	Southern Company is committed to providing clean, safe, reliable and affordable energy, with a goal of transitioning to low- to no-carbon operations by 2050. We have already made significant progress with an "all of the above" approach to electric generation resources diversity. For the first time, in 2018, we set enterprise-wide emissions reduction goals (50% GHG reduction by 2030 and low- to no-carbon operations by 2050) that are aligned with our long-term business strategy. Our path to 2050 includes the following actions: • We do not intend to invest further in our existing thermal coal fleet, unless the investment ensures safety, affordability or reliability to serve customers or to comply with federal or state laws • In each of our state-regulated jurisdictions, we will continue to propose and seek approval of low-carbon and carbon-free resources that are in the best interest of our customers as energy deployment options in the resource planning process • We will work within the regulatory framework in each of our states to ensure that our carbon reduction efforts support customers' needs and preferences • We will continue our industry-leading R&D efforts seeking to drive technology advancements that lead to GHG reductions across the energy value chain • As a consumer and distributor of natural gas, we will continue our participation in the ONE Future program with a goal to achieve an average rate of methane emissions across the entire natural gas value chain that is one percent or less of total natural gas production.
Investment in R&D	Impacted	Southern Company has actively engaged in robust, proprietary R&D that grows the value of energy services to customers since the 1960s. Nearly all our current R&D spend is focused on lower carbon-emitting technologies. We are also an active participant and a significant funder of EPRI, whose membership includes utilities throughout the world. Our R&D strategy seeks at least six revolutionary technological successes: • Beneficial electrification with newly developed and broadly deployed technologies including those for transportation, buildings, industrial processes and food production. • Solar, wind, energy storage and other carbon-free energy resources – supported by advancements in cost and efficiency through R&D – developed and operated in centralized and microgrid configurations, as well as behind the meter as the lowest-cost energy sources • Resilient, fully integrated energy delivery grids allowing increased use of low- to no-GHG emissions energy • Cost-effective carbon capture, use and storage technologies developed and operating an efficient, reliable natural gas-fired generation fleet • New utility business models created from hydrogen production, delivery and end-use technologies • Advanced nuclear power generation developed with superior safety benefits and polygeneration business opportunities that are cost-competitive with natural gas-fired generation.
Operations	Impacted	We are one of the few energy companies pursuing a full portfolio energy strategy. We believe developing and maintaining a diversified energy portfolio is essential to successfully reducing carbon emissions while maintaining reliability and affordability. Our portfolio was initially founded on hydroelectric generation and has grown to include coal, natural gas, nuclear, biomass, landfill gas, solar, wind, energy efficiency programs, demand response, and distributed resources. Over the last decade, we have significantly transformed our electricity generation mix. Recent generation decisions and environmental compliance strategies have led to the following as of July 2019: • Approximately 6,300 MW of coal- and oil-related retirements since 2010. • Approximately 3,300 MW of coal capacity switched to use natural gas as the primary fuel since 2015. We invest in a diverse portfolio of low-carbon and carbon-free energy assets to serve customers and communities with a focus on maintaining reliability and affordability while reducing carbon emissions. Through our subsidiaries we are investing \$20 billion in developing low-carbon and carbon-free resources, and more than 5,200 MW of renewable generating capacity has been added across the system between 2010 and July 2019. Our current portfolio of over 12,000 MW of carbon-free and carbon neutral resource capacity has established a foundation enabling us to continue our carbon reduction efforts. • Along with our partners, we are building the first new nuclear units in the U.S. in more than 30 years. The units will add 1,000 MW to our existing 3,700 MW portfolio of carbon-free nuclear generation. • Combined with our existing fleet of zero-carbon generation, we have commitments to grow our fleet of zero carbon generation to more than 20,000 MW by 2024 including an additional 7,400 MW of renewable generation capacity as of July 2019. The trends of additional natural gas-fired and renewable generation are projected to continue.
Other, please specify	Please select	

C2.6

(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	Our energy infrastructure portfolio of primarily rate-regulated assets and assets under long-term contracts is designed to produce regular, predictable and sustainable earnings. The Southern Company system has made significant investment over the past decade in low- and no-carbon resources. We expect that if our companies continue to make major energy decisions that are in the best interest of customers, that consider fuel and carbon risks, and that are approved by the state regulators, each company will receive fair regulatory treatment regarding its regulated assets. We will continue to seek out opportunities outside of our rate-regulated assets to grow our renewable portfolio.
Operating costs	Impacted	Our R&D spend, which is close to \$40 million dollars, including the EPRI applied dollars, continues to significantly increase its focus on lower carbon-emitting technologies, and we have expanded our products and services through PowerSecure's strategic partnerships with Bloom and Advanced Microgrid Solutions.
Capital expenditures / capital allocation	Impacted	As mentioned previously, through our subsidiaries we are investing \$20 billion in developing low-carbon and carbon-free resources and more than 5,200 MW of renewable generating capacity has been added across the system since 2010. As of July 2019, our current portfolio of over 12,000 MW of carbon-free and carbon neutral resource capacity has established a foundation enabling us to continue our carbon reduction efforts.
Acquisitions and divestments	Impacted	As mentioned previously, beyond providing clean, safe, reliable, and affordable energy to our customers, we are ensuring that our customers can efficiently use our product. In May 2016, we acquired PowerSecure, a proprietary distributed infrastructure, energy efficiency and utility infrastructure solutions company. With over 1.6 gigawatts (GW) of distributed energy resources under management, PowerSecure has a national footprint and continues to grow. Over the last decade, we have significantly transformed our electricity generation mix. As of July 2019, generation decisions and environmental compliance strategies have led to approximately 6,300 MW of coal- and oil-related retirements since 2010 and approximately 3,300 MW of coal capacity switched to use natural gas as the primary fuel switches since 2015.
Access to capital	Not impacted	Our investors are increasingly focused on ESG issues, including climate-related issues. We published our "Planning for a Low Carbon Future" report in 2018 to enhance the information for investors related to the risks and opportunities in a low-carbon transition.
Assets	Impacted	We have seen a positive impact to our assets. We invest in a diverse portfolio of low-carbon and carbon-free energy assets to serve customers and communities. Through our subsidiaries, we are investing \$20 billion in developing low-carbon and carbon-free resources since 2010.
Liabilities	Not impacted	While each electric utility company in the Southern Company system owns and operates its generating resources, Southern Company's retail electric generating fleet is economically dispatched centrally 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. A major goal of the resource planning process and environmental compliance strategy process is to maintain flexibility by including as much information as possible before making final decisions.
Other	Please select	

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b)

Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

Yes

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

Southern Company is committed to providing clean, safe, reliable, and affordable energy and reducing emissions of carbon dioxide (CO₂) and other greenhouse gases (GHG) by developing the full portfolio of energy resources. Southern Company understands that operating in a CO₂-constrained future will be a reality, and we have been planning over a decade for a CO₂-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.

As published in April 2018, we have, for the first time, set emission reduction goals that are aligned with strategies designed to address the long-term reduction of carbon emissions and our commitment to a leadership role in developing solutions that make technological and economic sense. The goals established in 2018 were to reduce GHG emissions by 50% (from 2007 levels) by 2030 and to achieve low-to-no GHG emissions by 2050. These are enterprise-wide goals that encompass our electric and natural gas operations. Our strategy to achieve these goals includes the continued development and deployment of a diverse portfolio of energy resources to reliably and affordably serve our customers and communities with a focus on reducing CO₂ emissions. To do this, we are aggressively growing our investment in renewable energy, modernizing the grid to optimize technology advancements, increasing the use of natural gas, building new nuclear generating units, continuing our industry-leading, robust research and development (R&D) efforts, and investing in energy efficiency for savings on both sides of the meter. Transitioning to a low-carbon future will require continued advancement in technology. We also see potential to invest appropriately in new technologies that may emerge, mature and come to market through our PowerSecure subsidiary. We are also engaging with policymakers, customers and other stakeholders to help shape an energy policy that enhances optionality across the entire energy value chain and supports the development and deployment of more carbon-free energy sources, while ensuring that each state that we serve retains the ability to adequately plan and deploy resources that meet the needs of its citizens and communities.

As we plan for a cleaner energy future, we recognize that our current electric generation portfolio consists of high-capital, long-life assets. Efforts to further diversify our portfolio should be achieved through an orderly transition that accounts for the economic value of our existing assets. Our robust scenario based integrated resource planning process occurs annually and is a key component that we use to ensure that the right resources are deployed at the right time to maintain safety, reliability and affordability for customers. The planning process allows for updates to a number of assumptions, inputs, and alternatives, including potential CO₂ prices, fuel and other commodity prices, as well as economic or other policy indicators. The annual process allows each of our state-regulated utilities to actively work within its regulatory framework to ensure that carbon reduction efforts are in customer's best interests over time.

Today, we are one of the few energy companies pursuing a full portfolio energy strategy. We believe developing and maintaining a diversified energy portfolio is essential to successfully reducing carbon emissions while maintaining reliability and affordability.

C3.1d

(C3.1d) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenarios	Details
Other, please specify (Internal Scenario Planning)	<p>Our integrated resource planning process occurs annually – allowing updates to the scenarios, which look out over a 30 year horizon, and associated CO2 prices, as well as incorporation of the most recent commodity, economic or policy indicators. We use a robust scenario planning process that has two primary components: energy economy modeling and integrated resource planning. This horizon is appropriate for our industry based on PSC requirements in our region and considering the life of assets, which exceed 60 years in many cases.</p> <ul style="list-style-type: none"> • Energy economy modeling, in collaboration with external industry experts, analyzes the implications of diverse futures on multiple sectors of the nation’s economy. The two central uncertainties analyzed at a macro, national-level are fuel (e.g., natural gas prices) and CO₂ (e.g., represented as a cost to emit CO₂). Understanding the impacts to individual sectors of the economy and the interaction between sectors at the macro-economy level provides significant insight to informing and identifying broad industry risks and potential business strategies. This scenario format also serves as a basis for integrated resource planning at the state-regulated electric operating companies, Georgia Power, Alabama Power, and Mississippi Power – and ultimately informs major generation retirement and capital investment decisions. We utilize scenarios that have \$10 / metric ton and \$20 / metric ton prices on carbon, with these prices escalating at a rate substantially greater than inflation. • Integrated resource planning provides an orderly and reasoned framework where generation supply and demand-side options are analyzed across the state-regulated electric operating companies with the objective of providing reliable and affordable energy that meets customers’ needs over the planning horizon. Southern Company’s recent scenario planning analysis of the overall U.S. economy shows a reduction in carbon emissions of approximately 70 percent in one of the scenarios. It should be noted that this reduction of approximately 70 percent in carbon emissions is close to the U.S. electric sector reductions modeled in IEA’s 2DS. However, our recent analysis does not achieve these reductions until 2050. So, while we don’t explicitly have a 2DS scenario, we do have a scenario that achieves similar reductions, albeit over a longer time horizon. Our goal of low- to no-carbon emissions by 2050 aligns with the modeled trajectories associated with the 2DS emissions trajectories. Between 2010 and July 2019, Southern’s subsidiaries added more than 5,200 MW of renewable generation capacity and retired approximately 6,300 MW of coal and oil-fired generation as part of its Integrated Resource Planning process.

C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e

(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e)
Disclose details of your organization's low-carbon transition plan.

Decisions made by an electric operating company regarding its assets, including those requiring state regulator (i.e., Public Service Commission or PSC) approval, must be made in the best interest of its customers, taking into consideration a wide variety of factors, and based on the best information available at the time the decisions are made. Our state-regulated electric operating companies are committed to proposing and seeking approval of resource deployment options, in each state jurisdiction's resource planning process, that considers the costs and benefits associated with a transition to a low- to no carbon future. These resources, for example, may include: advanced natural gas generating units, nuclear, renewables, energy efficiency, and demand response. Each state-regulated electric operating company will work within its state's regulatory framework to ensure that resource deployment decisions are supportive of customers' needs and preferences. To date, none of the four states where we operate, or have operated, regulated electric utilities has enacted legislation or regulations to specifically regulate CO2 emissions or mandates for certain levels of renewable resources. However, we understand our customers' needs and preferences for clean, safe, reliable and affordable energy, as well as a continuing desire of many of our stakeholders to reduce our carbon emissions. We will work within each state's regulatory framework - with support from customers, PSCs, and environmental agencies to ensure that our carbon reduction efforts are supportive of customers' needs and preferences. We invest in a diverse portfolio inclusive of low-carbon and carbon-free energy assets to serve customers and communities with a focus on maintaining reliability and affordability while reducing carbon emissions. Through our retail and wholesale subsidiaries we have invested \$20 billion in developing low-carbon and carbon free resources and more than 5,200 MW of renewable generating capacity has been added across the system since 2010. Our current wholesale and retail portfolio of over 12,000 MW of carbon-free and carbon neutral resource capacity has established a foundation enabling us to continue our carbon reduction efforts.

Along with our partners, we are building the first new nuclear units in the U.S. in more than 30 years. These units will add 1,000 MW to our existing 3,700 MW portfolio of carbon-free nuclear generation. We are among the largest solar owner-operators in the U.S. Our state-regulated electric operating companies renewable resource portfolio includes approximately 650 MW of wind, 1,200 MW of solar, 3,000 MW of hydroelectric, and over 300 MW of biomass. Generally, with respect to renewable energy generated or purchased by the state-regulated electric operating companies, the state-regulated electric operating companies retain the right to use the renewable energy to serve customers or to sell the energy and associated renewable energy credits, together or separately, to third parties for the benefit of customers. Our competitive generation subsidiary, Southern Power, owns approximately 1,200 MW of solar and 1,800 MW of wind; the 100 MW biomass plant was sold in early 2019. Our future energy mix is expected to include more low- and no-carbon resources, particularly if natural gas prices remain low and technology costs associated with renewables and storage continue to decrease.

Overall trends for carbon reduction are expected to continue amongst the entirety of the Southern Co system's generation fleet. As of July 2019, we expect to add an additional 7,400 MW of renewable generating capacity by 2024 along with 80 MW of battery storage. Nuclear energy is one of the cleanest, most reliable and cost-effective fuel sources available today. It currently accounts for about 15 percent of our electricity generation mix, and its importance in our portfolio continues to grow. As we transition to a low-carbon energy future, we are preparing to bring Georgia Power's Vogtle Units 3 and 4 into operation in 2021 and 2022. We expect to own or otherwise control approximately 20,000 MW of carbon-free and carbon neutral generating capacity by 2024.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Scope

Scope 1

% emissions in Scope

100

Targeted % reduction from base year

50

Base year

2007

Start year

2018

Base year emissions covered by target (metric tons CO2e)

156650363

Target year

2030

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

% of target achieved

35.4

Target status

New

Please explain

This is an enterprise wide goal.

Target reference number

Abs 2

Scope

Scope 1

% emissions in Scope

100

Targeted % reduction from base year

80

Base year

2007

Start year

2018

Base year emissions covered by target (metric tons CO2e)

156650363

Target year

2050

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

% of target achieved

35.4

Target status

New

Please explain

In 2018, Southern Co established a goal of low to no GHG emissions by 2050. We view "low" as approximately an 80% reduction and "no" as a 100% reduction. Achievement of this goal will be dependent on many factors, including natural gas prices and the

pace and extent of improvement in energy technology. Southern Company will work within state regulatory frameworks to ensure that carbon reduction efforts continue to align with our customers' need for clean, safe, reliable, and affordable energy.

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

Target

Methane reduction target

KPI – Metric numerator

methane leak rate from gas distribution

KPI – Metric denominator (intensity targets only)

throughput of natural gas

Base year

2012

Start year

2017

Target year

2025

KPI in baseline year

0.52

KPI in target year

0.44

% achieved in reporting year

100

Target Status

Achieved

Please explain

Southern Company Gas is a founding member of the ONE Future program, a coalition of companies across the natural gas value chain focused on identifying policy and technical solutions that yield continuous improvement in the management of methane emissions associated with the production, processing, transmission, and distribution of natural gas. If adopted widely, their system of emissions management could lower total methane emissions to less than one percent of gross production and delivery – the point of which the use of natural gas for any purpose provides a clean and immediate GHG-reduction benefit as compared to any other fossil fuel in any other application.

Part of emissions target

The methane reduction target is a part of the overall target set in 2018.

Is this target part of an overarching initiative?

Other, please specify (ONE Future Program)

Target

Energy productivity

KPI – Metric numerator

Individual Unit Heat Rate

KPI – Metric denominator (intensity targets only)**Base year****Start year****Target year****KPI in baseline year**

KPI in target year

% achieved in reporting year

Target Status

Underway

Please explain

The Southern Company system's electric generating units have annual goals related to heat rate of the individual units. Baselines are based on the previous year's operation, and goals are established per unit. Employees responsible for heat rate are incentivized to meet these goals as they are a part of annual performance pay goals. Striving to meet these operational goals ensure the units are operated efficiently.

Part of emissions target

Efficient operation and continued maintenance of the units assists in meeting the Southern Company system's overarching target of 50% reduction in GHG emissions by 2030.

Is this target part of an overarching initiative?

Other, please specify (Part of Overall Reduction Goals)

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	9	0
Implementation commenced*	1	4200000
Implemented*	25	7069312
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative type

Low-carbon energy installation

Description of initiative

Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)

1805467

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

370000000

Payback period

No payback

Estimated lifetime of the initiative

>30 years

Comment

In 2018, the Southern Co. system completed 6 solar projects across the country. The energy from some of these solar projects, which are a part of Southern Power's wholesale portfolio, is sold to other companies for resale or delivery to their customers. Generally, with respect to renewable energy generated or purchased by the state-regulated electric operating companies, the state-regulated electric operating companies retain the right to use the renewable energy to serve customers or to sell the energy and associated renewable energy credits, together or separately, to third parties for the benefit of customers. For the wholesale projects, Southern Power sells the renewable energy credits generated by the projects to 3rd parties. Southern Company receives regulatory & program approvals through Public Service Commissions in respective retail operating company states prior to entering into any agreements to build or purchase renewable energy. While "voluntary" was selected, it should be noted that in some cases builds & purchases were developed as projects in conjunction with the respective PSCs Retail operating companies continue to pursue the development of low carbon solar PV installations.

Initiative type

Low-carbon energy purchase

Description of initiative

Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)

733222

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

0

Payback period

No payback

Estimated lifetime of the initiative

>30 years

Comment

In 2018, Southern subsidiaries had Power Purchase Agreements for multiple solar projects in their retail service territories. Generally, with respect to renewable energy generated or purchased by the state-regulated electric operating companies, the state-regulated electric operating companies retain the right to use the renewable energy to serve customers or to sell the energy and associated renewable energy credits, together or separately, to third parties for the benefit of customers. The ultimate purchasers of the renewable energy credits receives the right to claim all associated emission reductions. Retail operation companies continue to seek suppliers and purchase low carbon energy to diversify to companies fuel portfolio and create cost savings for customers where possible. New capacity is contracted for on a nearly annual basis, based upon regulatory approval. The purchase of this energy results fewer purchases from and dispatch of carbon-emitting generation resources, for the life of the power purchase agreements.

Initiative type

Low-carbon energy installation

Description of initiative

Wind

Estimated annual CO2e savings (metric tonnes CO2e)

2878531

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

92000000

Payback period

No payback

Estimated lifetime of the initiative

>30 years

Comment

In 2018, Southern Power completed a wind project for 248 MW as wholesale projects. The energy from these wind projects is sold to other companies for resale or delivery to their customers. Because this project does not supply energy to the Southern Company system in its regulated jurisdictions, it does not result in a reduction in the Southern Company system's CO2 emissions associated with retail load service. They do however result in avoided emissions for the retail load of the ultimate purchasers of the renewable energy credits.

Initiative type

Low-carbon energy purchase

Description of initiative

Wind

Estimated annual CO2e savings (metric tonnes CO2e)

1652092

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

0

Payback period

No payback

Estimated lifetime of the initiative

>30 years

Comment

In 2018, Southern subsidiaries had Power Purchase Agreements for wind projects in their retail service territories. Generally, with respect to renewable energy generated or purchased by the state-regulated electric operating companies, the state-regulated electric operating companies retain the right to use the renewable energy to serve customers or to sell the energy and associated renewable energy credits, together or separately, to third parties for the benefit of customers. The ultimate purchasers of the renewable energy credits receives the right to claim all associated emission reductions. Retail operation companies continue to seek suppliers and purchase low carbon energy to diversify to companies fuel portfolio and create cost savings for customers where possible. New capacity is contracted for on a nearly annual basis, based upon regulatory approval. The purchase of this energy results fewer purchases from and dispatch of carbon-emitting generation resources, for the life of the power purchase agreements.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	Decisions made by an electric and gas operating company regarding its assets, including those requiring specific state regulatory (i.e., public service commissions) approval, must be made in the best interest of its customers, taking into consideration a wide variety of factors, and based on the best information available at the time of the decision. EPA regulations governing emissions from existing electric generators could drive investment in the future.
Dedicated budget for energy efficiency	Across our state-regulated electric utilities, since 2000, energy efficiency and demand response programs have helped reduce peak demand for electricity by more than 5,300 MW and avoid more than 3 billion Wh of energy use. Additionally, over the past 8 years, Southern Company Gas' energy efficiency programs have helped reduce demand by more than 130 million therms and reduced customers' emissions. Looking forward, we are on a path to finding more ways for our customers to save money while also reducing GHG emissions by investing more than \$1 billion in energy efficiency for electric customers between 2010 and 2020 and more than \$16 million in energy efficiency for natural gas customers by 2021.
Dedicated budget for low-carbon product R&D	Southern Company has actively engaged in robust, proprietary R&D that grows the value of energy services to customers since the 1960s. Nearly all of our current R&D spend is focused on lower carbon-emitting technologies.
Internal price on carbon	Our integrated resource planning process occurs annually – allowing updates to the scenarios and associated CO2 prices, as well as incorporation of the most recent commodity, economic or policy indicators. We use a robust scenario planning process that has two primary components: energy economy modeling and integrated resource planning.
Internal incentives/recognition programs	Southern Company's CEO has a new GHG emission reduction metric that is part of the CEO's equity incentive compensation for 2019 and is aligned with Southern Company's absolute GHG emission reduction goals of reducing emissions 50% by 2030 (as compared to 2007) and low- to no-carbon emissions by 2050. The GHG reduction goals were set in April 2018. To demonstrate its commitment to the reduction goals and facilitate the execution of our business strategy to address the long-term reduction of carbon emissions, in 2018 the Board decided that it would tie a significant portion of the CEO's long-term equity incentive compensation (LTI) award for 2019 to the achievement of the goals. Ten percent of the CEO's 2019 LTI award is aligned with the GHG reduction goals, equivalent to a potential payout of up to \$2 million of incentive compensation.
Partnering with governments on technology development	Southern Company R&D has worked for almost 50 years to develop new technologies across the production, delivery, and end-use of energy. Since its formation, the U.S. Departments of Energy (DOE) has been a major research partner with Southern Company in defining R&D needs, leveraging public-private funding, and understanding and implementing results. In addition to DOE and its national laboratories, Southern Company R&D actively collaborates with other utilities, universities, technology developers and industry organizations, highly leveraging both funding and expertise. These long-standing partnerships address the industry's most significant challenges – including the reduction of carbon emissions – and advance the most promising technology options for the energy sector. Furthermore, this collaborative model allows the matching of internal research investments- on average, dollar for dollar – through public-private partnerships and other forms of external cost-sharing. As a result, Southern Company's R&D organization has delivered significant benefits across the enterprise that, over the last 10 years, have averaged at least 10 times its investment.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

Residential and commercial energy efficiency programs offered by retail electric operating companies which reduce electricity usage and therefore reduce emissions. These services include incentives to increase use of high efficiency appliances, home improvement incentives, energy check-up services and many other programs.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Reduction in peak and overall demand)

% revenue from low carbon product(s) in the reporting year

0

Comment

These programs have helped avoid more than 3 billion kWh of energy use since 2010.

Level of aggregation

Product

Description of product/Group of products

Our primary product is electricity sold to customers. To the extent that we lower our total system emissions and emissions rate, our customers also directly lower their total emissions.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Reduction in economy wide carbon emissions)

% revenue from low carbon product(s) in the reporting year

0

Comment

By electrifying other sectors of the economy, we are able to reduce net carbon emissions. Focus areas of our Research and Development include technologies related to transportation, building, industrial processes, and food production. Southern Company's retail operating companies have built, own and operate a fleet of low-carbon facilities and also purchase energy and renewable energy credits (RECs) from low-carbon facilities owned by third parties. The retail operating companies are able to use the RECs from these facilities to offer their customers the option to match some or all of their retail load with RECs, a low-carbon product. The retail operating companies can also sell the unused RECs to third parties for the benefit of customers. Because these resources (both owned and purchased) are part of each company's wholesale portfolio and the sale of energy and RECs (both to retail customers and wholesale customers) are comingled with all other wholesale sales, the Companies do not have a percentage of revenues that can be claimed for these activities for any specific set of customers. These activities are not, however, being pursued or implemented to satisfy any regulatory or other reporting requirements but rather as a means to satisfy customer demand and as a means to achieve Company-wide goals to reduce carbon emissions and diversify fuel sources to the benefit of customers.

Level of aggregation

Product

Description of product/Group of products

Southern Company and its subsidiaries offer specific customer programs in states where there is interest to support development of renewable generation assets including wind and solar generation.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Carbon Free/Distributed Generation Programs)

% revenue from low carbon product(s) in the reporting year

0

Comment

Southern's retail operating companies give customers the option to support new renewable generation development through a number of programs like Georgia Power's Renewable Energy Development Initiative (REDI). The REDI, along with other programs and projects, was proposed by Georgia Power as a part of its 2016 IRP and approved by the Georgia PSC. Alabama Power's Greener State program began in 2017 with 303 customers and in one year grew to 1712 customers. This program offers customers an economical way to support renewable energy by choosing among three pre-built plans, or creating their own custom plan. The program helps customers power their homes with renewable energy through the purchase of Renewable Energy Certificates, or RECs.

(C-EU4.6) Describe your organization's efforts to reduce methane emissions from your activities.

Southern Company Gas is a founding member of ONE Future. The ONE Future Coalition is a group of natural gas companies working together to voluntarily reduce methane emissions across the natural gas supply chain. It is a unique coalition of leading companies who recognize that excessive methane emissions can potentially erode the benefits of natural gas relative to other fossil fuels and therefore prudent development and operations are vital to ensuring the industry can support the energy needs of the nation and the world in a sustainable manner. With operations across every part of the natural gas value chain, ONE Future is focused on identifying policy and technical solutions that yield continuous improvement in the management of methane emissions associated with the production, processing, transmission and distribution of natural gas. ONE Future was formed when 8 companies came together in 2014 with a focus to collectively achieve a science-based average rate of methane emissions across our facilities equivalent to one percent (or less) of total natural gas production. Since its formation, it has grown to 17 companies accounting for the some of the largest natural gas producers, transmission and distribution companies in the U.S. ONE Future members operate in many of the production basins and other segments of the value chain operate in multiple regions of the country, hence ONE Future's data represent a geographically diverse and material share of the U.S. natural gas supply chain. Its members beyond Southern Company Gas include Antero Resources, Apache, BHE Pipeline Group, BHP, Dominion Energy, Equinor, EQT, Hess, Kinder Morgan, National Grid, New Jersey Natural Gas, Noble Energy, Southwestern Energy, Summit Utilities, TransCanada, and Williams. Southern Company is focused on increasing membership in the ONE Future Coalition. By increasing suppliers involved in the initiative, Southern Company can increase availability of suppliers in our service territory. If adopted widely, our system of emissions management could lower total methane emissions to less than one percent of gross production - the point at which the use of natural gas for any purpose provides clear and immediate GHG reduction benefits as compared to any other fossil fuel.

The improvements put into place across the whole value chain will positively influence the supply side for our electric utilities. To achieve ONE Future's collective one percent target, ONE Future has identified sectoral performance targets for each of the four major industry sectors (Exploration & Production; Gathering & Processing; Transmission & Storage, and Distribution & Retail) that would cumulatively add up to the overall one percent goal. ONE Future has worked to set these performance targets in rough proportion to each industry sectors' respective share of current emissions, considering reduction potentials given current regulatory barriers. These sectoral targets serve both to benchmark company progress toward goals, but also to facilitate comparisons amongst diverse companies as each strives for optimal performance.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1 2007

Base year end

December 31 2007

Base year emissions (metric tons CO2e)

156650362.8

Comment

Estimated GHG emissions for the Electricity Sector. No gas sector emissions are included. Calculation includes CO2, CH4, N2O, and SF6. Electricity sector baseline includes leveraged leases and all emissions required to be tracked for EPA's GHG reporting program.

Scope 2 (location-based)

Base year start

January 1 2007

Base year end

December 31 2007

Base year emissions (metric tons CO2e)

3508184

Comment

Estimated GHG emissions for the PPA non-affiliates (5,950,951 MWhr). Applied a RY2007 eGRID US National Emission Factor to determine CO2e. Provided link to eGRID tables: (<https://www.epa.gov/energy/emissions-generation-resource-integrated-database-egrid-questions-and-answers#egrid1>)

Scope 2 (market-based)

Base year start

January 1 2007

Base year end

December 31 2007

Base year emissions (metric tons CO2e)

771382

Comment

Estimated GHG emissions for the PPA non-affiliates (1,708,147 MWhr). Applied a RY2007 eGRID reported emission factor for each facility under PPA with SoCo.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

US EPA Mandatory Greenhouse Gas Reporting Rule

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

102232275

Start date

January 1 2018

End date

December 31 2018

Comment

Based on Financial Control for tracked and reported facilities. Includes Electricity and Gas business divisions (APC, GPC, MPC, Gulf, SPC, SNC (Wilson), SEGCO, T&D, leveraged leased facilities, PowerSecure, GAS, SoNatGas, & Williams)

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

The methodology used to calculate Scope 2 emissions is a combination of location-based methodology using national EPA eGRID emissions factors (to calculate emissions from spot purchases and null energy for renewables) as well as a market-based methodology for PPAs.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

2832305.92

Scope 2, market-based (if applicable)

2142130.48

Start date

January 1 2018

End date

December 31 2018

Comment

This total only considers Electricity business. Total Includes non-associated power purchases which is combination of market-based (fossil PPAs) and location-based (renewable PPAs in which the RECs are retained or sold) and Spot purchases (location-based)

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

The Scope 1 Emissions from company vehicles are not included.

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

No emissions from this source

Relevance of market-based Scope 2 emissions from this source (if applicable)

No emissions from this source

Explain why this source is excluded

Scope 1 emissions include all tracked emissions under the GHGRP (40CFR98). Southern Company does not currently have tracking systems in place to calculate emissions from company vehicles. Emissions from these sources would be considered minimal compared to Southern Company's overall Scope 1 emissions and therefore would not materially change the company's GHG emissions profile.

Source

The Scope 2 emissions provided only include emissions from non-associated long-term power purchase agreements (PPAs) and spot market purchases for the SoCo retail territory. Purchased electricity for power needs outside of our retail territory are not included in the Scope 2 emissions.

Relevance of Scope 1 emissions from this source

No emissions from this source

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why this source is excluded

Purchased electricity for power needs outside of our retail territory are not included in the Scope 2 emissions due to systems not currently being in place to track those electricity purchases and evaluate those emissions. Emissions from these sources would be considered minimal compared to Southern Company's overall Scope 2 emissions and therefore would not materially change the company's GHG emissions profile.

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Scope 1 and Scope 2 emissions have been reported. No material emissions from other purchased goods and services.

Capital goods

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Scope 1 and Scope 2 emissions have been reported. Any relevant emissions related to capital goods is reflected by those emissions or is otherwise not material.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

Emissions calculation methodology

Any relevant emission related to fuel and energy related activities is included in the Scope 1 and 2 emissions provided.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Explanation

Upstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Southern does not currently have a way to collect meaningful corporate data related to upstream transportation and distribution.

Waste generated in operations

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Compared to Southern Company Scope 1 and Scope 2 emissions. Emissions related to Waste Generated in Operations is not material.

Business travel

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Southern does not currently have a way to collect meaningful corporate data related to business travel. When compared to Scope 1 emissions, emissions related to travel are not material.

Employee commuting

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Southern does not currently have a way to collect meaningful corporate data related to employee commuting. Compared to Scope 1 emissions provided the emissions related to employee commuting are not material. In addition, there are opportunities for employees to participate in ride share programs. Charging stations for EVs are also provided free of charge at company locations.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Any meaningful leased equipment fuel consumption is included in Scope 1 emissions already provided.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

37299499

Emissions calculation methodology

As reported under 40CFR98, subpart NN

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

These are end user / customer emissions from combusted natural gas.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Electricity is not processed by customers, and emissions from gas distribution are included above.

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

The use of electric energy does not cause any further GHG emissions and the emissions from the gas distribution are included above.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Electricity and gas require no end of life treatment.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Any meaningful fuel consumption from leased equipment is included in Scope 1 emissions already reported.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Southern does not own any franchises.

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

Investments are included in Scope 1 emissions as leveraged leases.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

No other relevant upstream emissions as compared to Scope 1 emissions.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Explanation

There are no downstream emissions resulting from the use of electricity. Gas emissions are provided above.

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.487

Metric numerator (Gross global combined Scope 1 and 2 emissions)

102147363.4

Metric denominator

megawatt hour generated (MWh)

Metric denominator: Unit total

209708814

Scope 2 figure used

Location-based

% change from previous year

1.06

Direction of change

Decreased

Reason for change

Text field [maximum 2,400 characters] % Change from 2017 to 2018 indicates an increase (+1.06%), however the intensity actually decreased. A different source of generation data was used in 2017 CDP than in 2018 CDP. Intensity actually decreased when comparing intensity using the same data source for 2017 and 2018 data. Overall, generation increased from 2017 to 2018 but intensity decreased, meaning we generated more electricity using lower emitting resources. We expect the intensity to fluctuate year to year based on generation needs and fuel cost.

Intensity figure

0.006

Metric numerator (Gross global combined Scope 1 and 2 emissions)

102147363

Metric denominator

unit total revenue

Metric denominator: Unit total

1773800000

Scope 2 figure used

Location-based

% change from previous year

0

Direction of change

No change

Reason for change

Metric tons of CO2e per unit of revenue was not provided for 2017

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CH4	643186.32	Other, please specify (Table A-1 to Subpart A of Part 98- Global Warming Potentials (GWP100yr) GWP CH4: 25)
N2O	334187.17	Other, please specify (Table A-1 to Subpart A of Part 98—Global Warming Potentials (GWP100 yr) Chemical Specific GWPs are: N2O: 298)
CO2	101166222.04	Other, please specify (Table A-1 to Subpart A of Part 98—Global Warming Potentials (GWP100 yr))
SF6	88680	Other, please specify (Table A-1 to Subpart A of Part 98—Global Warming Potentials (GWP100 yr); GWP SF6: 22800)

C-EU7.1b

(C-EU7.1b) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	0	0	3.89	88680	
Combustion (Electric utilities)	100612476	7894	0	101142782	
Combustion (Gas utilities)	0	0	0	0	
Combustion (Other)	0	0	0	0	
Emissions not elsewhere classified	0	0	0	0	

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	102232275

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

- By business division
- By facility

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Alabama Power Company	35982644
Georgia Power Company	30434073
Mississippi Power Company	7753805
Gulf Power Company	7354123
SEGCO	2035976
Southern Power Company	13507207
T & D	88680
Power Secure	16418
GAS	602753
SoNat Gas	381375
Williams	16688
Leveraged Leases	4058532

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Barry	7327725	31.0069	-88.0103
Gadsden	180549	34.0128	-85.9708
Gorgas	5691756	33.6446	-87.2003
Green Co.	701169	32.6017	-87.7811
Miller	17677711	33.6319	-87.0597
Theodore	669286	30.5248	-88.1289
Washington Co.	498653	31.2622	-88.0052
SABIC	345750	32.3102	-86.5242
Boulevard	201	32.0111	-81.1385
Bowen	13437168	34.1256	-84.9192
Hammond	250355	34.2533	-85.3456
McDonough	6187322	33.8244	-84.475
McIntosh	71048	32.3558	-81.1683
McIntosh CCs	3416979	32.3478	-81.1828
McManus	11935	31.2125	-81.5458
Robins	23955	32.5806	-83.5831
Scherer	4398163	33.0583	-83.8072
Wansley	1912974	33.4124	-85.0345
Yates	716168	33.4622	-84.8986
Wilson	7805	33.138	-81.748
Crist	3161769	30.5661	-87.2289
Pea Ridge	77704	30.7357	-87.0134
Perdido	70	30.57	-87.39
Scholz	0.6	30.6689	-84.8869
Smith	1511857	30.2689	-85.7003
Daniel	5838229	30.5335	-88.5574
Watson	832910	30.4408	-89.0265
Chevron	788201	30.34	-88.492
Sweatt	4872	32.2925	-88.7461
Ratcliffe	1439412	32.6538	-88.7574
Addison	212896	32.911	-84.3059
Cleveland	435045	35.1706	-81.4161
Dahlberg	291294	34.0386	-83.3972
Franklin	4557933	32.6094	-85.0961
Harris	2199764	32.3814	-86.5736
Mankato	220705	44.1965	-94.0099
Nacogdoches	1619	31.8326	-94.9006
Oleander	74781	28.3661	-80.7947
Stanton	432334	28.4881	-81.1675
Rowan	1857186	35.7325	-80.6019
Wansley CCs	3223652	33.4063	-85.0373
Gaston	5183819	33.2442	-86.4567

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions, metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility generation activities	101231459	<Not Applicable>	Based on Financial Control for tracked and reported facilities. Includes Electricity business division only (APC, GPC, MPC, Gulf, SPC, SEGCO T&D, PowerSecure, leveraged leases)
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
United States of America	2832205.9	2142130.48	11505540	0

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Alabama Power Company	772738.73	84709.39
Georgia Power Company	763293.64	348605.5
Mississippi Power Company	89199.76	0
Gulf Power Company	0	1708815.59
Southern Company System	1207073.8	0

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Increased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	Renewables have no emissions.
Other emissions reduction activities		<Not Applicable>		
Divestment	46735	Decreased	0.05	Sold 3 gas facilities – Elizabethtown Gas, Elkton Gas, & Florida City Gas
Acquisitions	0	No change	0	
Mergers	0	No change	0	
Change in output	1375045	Increased	1.4	Compared total 2017 emissions to total 2018 emissions. Generation increased resulting in emissions increase; however, due to deployment of lower emitting resources, intensity decreased.
Change in methodology	3291413	Increased		Included leveraged leases in 2018
Change in boundary	0	No change	0	
Change in physical operating conditions	0	No change	0	
Unidentified	0	No change	0	
Other	0	No change	0	

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 55% but less than or equal to 60%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	No
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	15580106	190464425	206044531
Consumption of purchased or acquired electricity	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	15580106	190464425	206044531

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Coal

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

61141708

MWh fuel consumed for self-generation of electricity

4919866

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Fuels (excluding feedstocks)

Landfill Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

106704

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Fuels (excluding feedstocks)

Light Distillate

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

186450

MWh fuel consumed for self-generation of electricity

3710

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

97290443

MWh fuel consumed for self-generation of electricity

1938773

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Fuels (excluding feedstocks)

Wood Waste

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

181007

MWh fuel consumed for self-generation of electricity

16639

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Fuels (excluding feedstocks)

Other, please specify (Solar)

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

2997963

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Fuels (excluding feedstocks)

Other, please specify (Wind)

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

5806830

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Fuels (excluding feedstocks)

Other, please specify (Hydro)

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

6487603

MWh fuel consumed for self-generation of electricity

21232

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Fuels (excluding feedstocks)

Other, please specify (Nuclear)

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

31845824

MWh fuel consumed for self-generation of electricity

1432960

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Coal

Emission factor

93.28

Unit

kg CO2 per million Btu

Emission factor source

40 CFR Appendix Table C-1 to Subpart C of Part 98

Comment

bituminous coal 93.28 kg CO2/MMBtu; subbituminous coal 97.17 kg CO2/mmBtu

Landfill Gas

Emission factor

52.07

Unit

kg CO2 per million Btu

Emission factor source

40 CFR Appendix Table C-1 to Subpart C of Part 98

Comment

Light Distillate

Emission factor

73.96

Unit

kg CO2 per million Btu

Emission factor source

40 CFR Appendix Table C-1 to Subpart C of Part 98

Comment

Natural Gas

Emission factor

53.06

Unit

kg CO2 per million Btu

Emission factor source

40 CFR Appendix Table C-1 to Subpart C of Part 98

Comment

Wood Waste

Emission factor

93.8

Unit

kg CO2 per million Btu

Emission factor source

40 CFR Appendix Table C-1 to Subpart C of Part 98

Comment

Other

Emission factor

Unit

Please select

Emission factor source

Comment

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	206044531	8333180	15580106	37871
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C-EU8.2e

(C-EU8.2e) For your electric utility activities, provide a breakdown of your total power plant capacity, generation, and related emissions during the reporting year by source.

Coal – hard

Nameplate capacity (MW)

13456.85

Gross electricity generation (GWh)

61141.71

Net electricity generation (GWh)

56221.84

Absolute scope 1 emissions (metric tons CO2e)

57972661.6

Scope 1 emissions intensity (metric tons CO2e per GWh)

1028.72

Comment

Capacity of units is included based on their primary fuel type. Some units may have dual fuel capability.

Lignite

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

NA

Oil

Nameplate capacity (MW)

1809.32

Gross electricity generation (GWh)

186.45

Net electricity generation (GWh)

182.74

Absolute scope 1 emissions (metric tons CO2e)

36846.6

Scope 1 emissions intensity (metric tons CO2e per GWh)

201.63

Comment

Capacity of units is included based on their primary fuel type. Some units may have dual fuel capability.

Gas

Nameplate capacity (MW)

22235.88

Gross electricity generation (GWh)

97290.44

Net electricity generation (GWh)

95351.6

Absolute scope 1 emissions (metric tons CO2e)

39209089.9

Scope 1 emissions intensity (metric tons CO2e per GWh)

411.21

Comment

Capacity of units is included based on their primary fuel type. Some units may have dual fuel capability.

Biomass

Nameplate capacity (MW)

115.5

Gross electricity generation (GWh)

181.01

Net electricity generation (GWh)

164.37

Absolute scope 1 emissions (metric tons CO2e)

1619

Scope 1 emissions intensity (metric tons CO2e per GWh)

9.85

Comment

Waste (non-biomass)

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Nuclear**Nameplate capacity (MW)**

3836.36

Gross electricity generation (GWh)

31845.82

Net electricity generation (GWh)

30412.86

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment**Geothermal****Nameplate capacity (MW)**

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment**Hydroelectric****Nameplate capacity (MW)**

2758.01

Gross electricity generation (GWh)

6487.6

Net electricity generation (GWh)

6466.37

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

The information provided in response to this question and question C2.8e reflects Southern Company's total generation based upon financial control only, not upon load service by any retail operating companies. To the extent that there are renewable energy credits or other environmental attributes (collectively "RECs") associated with generation reported, the contracted owner of the RECs (whether a Southern Company affiliate or a third party) maintains all rights and ownership including the right to claim the RECs, utilize the RECs for purposes of associating the environmental benefits of such generation with its electric load or sell such RECs to third parties.

Wind

Nameplate capacity (MW)

1590.63

Gross electricity generation (GWh)

5806.83

Net electricity generation (GWh)

5806.83

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

The information provided in response to this question and question C2.8e reflects Southern Company's total generation based upon financial control only, not upon load service by any retail operating companies. To the extent that there are renewable energy credits or other environmental attributes (collectively "RECs") associated with generation reported, the contracted owner of the RECs (whether a Southern Company affiliate or a third party) maintains all rights and ownership including the right to claim the RECs, utilize the RECs for purposes of associating the environmental benefits of such generation with its electric load or sell such RECs to third parties.

Solar

Nameplate capacity (MW)

1894.91

Gross electricity generation (GWh)

2997.96

Net electricity generation (GWh)

2997.96

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

The information provided in response to this question and question C2.8e reflects Southern Company's total generation based upon financial control only, not upon load service by any retail operating companies. To the extent that there are renewable energy credits or other environmental attributes (collectively "RECs") associated with generation reported, the contracted owner of the RECs (whether a Southern Company affiliate or a third party) maintains all rights and ownership including the right to claim the RECs, utilize the RECs for purposes of associating the environmental benefits of such generation with its electric load or sell such RECs to third parties.

Other renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Other non-renewable

Nameplate capacity (MW)

13.19

Gross electricity generation (GWh)

106.7

Net electricity generation (GWh)

106.7

Absolute scope 1 emissions (metric tons CO2e)

146.2

Scope 1 emissions intensity (metric tons CO2e per GWh)

1.37

Comment

Total

Nameplate capacity (MW)

47710.66

Gross electricity generation (GWh)

206044.53

Net electricity generation (GWh)

197711.35

Absolute scope 1 emissions (metric tons CO2e)

97084260.4

Scope 1 emissions intensity (metric tons CO2e per GWh)

491.73

Comment

C-EU8.4

(C-EU8.4) Does your electric utility organization have a transmission and distribution business?

Yes

C-EU8.4a

(C-EU8.4a) Disclose the following information about your transmission and distribution business.

Country/Region

United States of America

Voltage level

Transmission (high voltage)

Annual load (GWh)

206670

Scope 2 emissions (basis)

Location-based

Scope 2 emissions (metric tons CO2e)

0

Annual energy losses (% of annual load)

4.42

Length of network (km)

43991

Number of connections

61

Area covered (km2)

320345

Comment

The Southern Company system's transmission system has no Scope 2 emissions (purchased or acquired electricity). All the Southern Company system's Scope 2 emissions (purchased electricity) reported in prior question. The annual load (206,670 GWh) provided is for the Southern Company system's combined transmission and distribution system. Transmission Scope 1 emissions are incorporated in Question C6. Number of connections (61) represents the total number transmission tie lines to the system Area covered (320,345 km2) represents the total Southern Company system's regulated electric utility footprint

Country/Region

United States of America

Voltage level

Distribution (low voltage)

Annual load (GWh)

206670

Scope 2 emissions (basis)

Location-based

Scope 2 emissions (metric tons CO2e)

0

Annual energy losses (% of annual load)

2.89

Length of network (km)

264157

Number of connections

4588710

Area covered (km2)

320345

Comment

The Southern Company system's transmission system has no Scope 2 emissions (purchased or acquired electricity). All the Southern Company system's Scope 2 emissions (purchased electricity) reported in prior question. The annual load (206,670 GWh) provided is for the Southern Company system's combined transmission and distribution system. Transmission Scope 1 emissions are incorporated in Question C6. Number of connections (61) represents the total number transmission tie lines to the system Area covered (320,345 km2) represents the total Southern Company system's regulated electric utility footprint

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C-EU9.5a

(C-EU9.5a) Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation.

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Coal – hard	2800000000	23	2023	Since 2010, we have retired approximately 6,300 MW of coal and oil-fired generating units as of July 2019. We do not intend to invest further in our existing thermal coal fleet, unless the investment ensures safety, affordability or reliability to serve customers or to comply with federal or state laws. Most of the capital expenditure shown here is related to compliance with environmental regulations.
Gas	1800000000	14.8	2023	
Nuclear	6400000000	52.4	2023	
Hydroelectric	600000000	4.9	2023	
Wind	230000000	1.9	2023	Since 2010, Southern Power's growth focus has been primarily on renewable investment, creating a premier renewable portfolio with operating assets from coast to coast.
Solar	370000000	3	2023	From 2010-2018, Southern Power has invested more than \$10.5 billion in capital investments related to its renewable portfolio. Southern is among the largest solar owner-operators in the U.S.

C-EU9.5b

(C-EU9.5b) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
Distributed generation	Distributed generation such as, but not limited to, distributed solar	500000	0.06	2023
Home storage systems	Surge protection	11000000	1.22	2023
Charging networks	Electric transport initiatives	20000000	2.22	2023
Lighting	Outdoor lighting	565000000	62.84	2023
Micro-grid	Solar / Batteries	550000	0.06	2023
Large-scale storage	Battery technology	125000000	13.9	2023
Other, please specify (Camera & other equip. for power delivery)	Cameras and other equipment related to power delivery	177000000	19.69	2023

C-CO9.6/C-EU9.6/C-OG9.6

(C-CO9.6/C-EU9.6/C-OG9.6) Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Carbon capture and storage/utilisation

Investment maturity

Pilot demonstration

Investment figure

6359791

Low-carbon investment percentage

81-100%

Please explain

This program supports the research, development and demonstration of cost-effective carbon capture technologies for fossil-based power generation, demonstrates secure CO2 storage within the Southern Company territory, engages in stakeholder outreach to ensure support for technology deployment, and promotes the development of new technologies, processes, systems, tools, modeling capabilities and business models to support commercial deployment. The focal point of these efforts is the U.S. Department of Energy's National Carbon Capture Center (NCCC), a neutral research facility working to advance technologies to reduce greenhouse gas emissions from natural gas- and coal-based power plants. Located in Wilsonville, Alabama, USA, the NCCC has worked with over 30 government, industry and university organizations from seven countries. Through pilot testing of more than 60 technologies, the NCCC has directly participated in reducing the projected cost of carbon capture from fossil-based power generation by one-third. While its technology development has focused on post-combustion carbon capture for coal-fired power plants, new infrastructure is being added to significantly expand testing of carbon capture technologies for natural gas power generation. Future projects will also explore carbon capture technologies for carbon utilization. Other projects in this program area include geologic resource assessments for commercial storage and fundamental science and pilot demonstrations to clarify the economics, technologies and risks associated with underground CO2 storage and the use of CO2 for EOR.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (Power Delivery)

Investment maturity

Applied research and development

Investment figure

3029238

Low-carbon investment percentage

81-100%

Please explain

This program focuses on power delivery technology issues and improvements, including next-generation transmission technologies to improve reliability, reduce cost and modernize the grid; innovative substation technology to enable more reliable, secure and cost-effective design, construction, operation and maintenance of transmission substations; and new distribution grid technologies that increase safety, reliability and efficiency. Projects include deploying a sensor suite, tools and devices to monitor power delivery assets; developing technologies to increase transmission and distribution situational awareness; addressing needs for condition-based maintenance; providing greater visualization for grid modernization efforts; and reducing operations and maintenance costs. Examples include: edge of network grid optimization (ENGO) and radio frequency identification sensors and the new Schatz Grid Visualization and Analytics Center, which offers a variety of capabilities to advance the assessment, adoption and integration of emerging power delivery processes, tools and protocols.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (Grid R&D)

Investment maturity

Basic academic/theoretical research

Investment figure

346297

Low-carbon investment percentage

81-100%

Please explain

This grid operations research is focused on supporting transmission owners in planning and operating the bulk power system reliably and economically to provide safe and environmentally responsible sources of electric power.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (End Use Technologies)

Investment maturity

Applied research and development

Investment figure

3942278

Low-carbon investment percentage

61-80%

Please explain

End-use R&D focuses on identifying and hardening technologies that meet industrial, commercial and residential customers' evolving energy needs. Initiatives in this research program include: the Alabama Power and Georgia Power Smart Neighborhoods, electric transportation, market opportunities for electric alternatives, advanced HVAC technologies, indoor agriculture evaluations, industrial and additive manufacturing, as well as energy efficiency and demand management tools and programs.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (Generation Fleet Modernization)

Investment maturity

Applied research and development

Investment figure

1313198.73

Low-carbon investment percentage

81-100%

Please explain

This R&D is focused on improving all components of the existing fossil generation fleet, with primary work in areas that include natural gas turbines, cooling systems, advanced materials and instruments and controls. Projects work to maximize fleet flexibility, availability and performance; analyze, develop and demonstrate advanced generation concepts with lower carbon footprints for retrofit or greenfield applications; and provide generation technology assessment for system planning.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (Generation Fleet Environmental Compliance & Sustainability)

Investment maturity

Applied research and development

Investment figure

2122501

Low-carbon investment percentage

21-40%

Please explain

Southern Company R&D is exploring new technologies to improve reliability and efficiency of environmental controls on fossil plants, leading to decreased material usage and higher reliability. Activities focus on wastewater, solid waste, advanced particulate, sulphur oxides (SOx), nitrogen oxides (NOx), CO₂, mercury and air toxics management technologies. R&D is also working on developing technologies that ensure water and fuel resources are utilized as efficiently as possible.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (Advanced Energy Systems & Next Gen Nuclear)

Investment maturity

Basic academic/theoretical research

Investment figure

5761434

Low-carbon investment percentage

81-100%

Please explain

Southern Company is engaged in efforts to advance zero-carbon Generation IV nuclear technologies in reaching carbon reduction goals. Southern Company's primary advanced nuclear project is a collaborative with TerraPower, the U.S. Department of Energy, Electric Power Research Institute and others, which is focused on development of the Molten Chloride Fast Reactor (MCFR). The MCFR has the potential to produce high-quality, carbon-free energy at low cost with inherent safety and reliability, a low waste profile, polygeneration benefits and enhanced security. Southern Company is also engaging domestically and internationally through hydrogen R&D projects and collaboration. Focus areas include hydrogen production and markets, liquid hydrogen carrier to meet system hydrogen needs and meeting hydrogen energy needs of emerging markets.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (Renewables, Storage, and Distributed Generation)

Investment maturity

Pilot demonstration

Investment figure

1999903

Low-carbon investment percentage

81-100%

Please explain

Southern Company's renewables, storage, and distributed generation R&D portfolio represents a collaborative effort between the Generation and Retail Marketing business units of the Southern Company system to develop and advance emerging technologies associated with renewable resources (wind, solar, biomass), energy storage and distributed generation. Objectives include providing technical, economic and operational research to evaluate, develop and demonstrate future technology options for the company and its customers. Key current projects include fuel cell, battery energy storage and microgrid demonstrations, as well as research into tools and techniques to optimize solar generation forecasting and operations and maintenance.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (R&D / Cross-Cutting Technologies)

Investment maturity

Applied research and development

Investment figure

971980

Low-carbon investment percentage

41-60%

Please explain

This program area facilitates enhanced R&D value through internal and external collaboration across strategic areas by leveraging funds, finding and exploiting synergies, and applying common results. R&D is conducted into instrumentation, controls, advanced materials, analytics, sensors and unmanned aircraft systems, which can lead to more efficient operation of generating units and the grid and subsequently lower carbon emissions.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (R&D Portfolio Management)

Investment maturity

Basic academic/theoretical research

Investment figure

1894290.23

Low-carbon investment percentage

61-80%

Please explain

Southern Company's research and development organization has worked for 50 years to develop new technologies across the production, delivery and use of energy. Founded in 1969, this R&D organization manages a diverse research portfolio to ensure that Southern Company, its subsidiaries and the energy industry have the capabilities and knowledge to successfully deploy technologies to meet customers' needs while planning for a low- to no-carbon future. Current research areas include carbon capture, utilization and storage (CCUS); renewables, storage and distributed generation; advanced nuclear and hydrogen-based energy systems; energy end-use; generating fleet; and smart power delivery systems. Southern Company's unique, centralized R&D organization provides industry-leading expertise, strategic planning, budgeting and leadership to accomplish the internal and external goals of Southern Company. The organization works with experts from across the Southern Company system to identify, evaluate and demonstrate future technology options, and quantify their value in anticipation of the changing business needs of the company and industry. Results of the R&D program are routinely applied in decision-making for the deployment of new technologies into the Southern Company system's future portfolio. Southern Company R&D also actively collaborates with other utilities, universities, technology developers and industry organizations, highly leveraging both funding and expertise. These long-standing partnerships allow the matching of internal research investments (on average, dollar for dollar) through public-private partnerships and other forms of external cost-sharing. As a result, Southern Company's R&D organization has delivered significant benefits across the enterprise that, over the last 10 years, have averaged at least 10 times its investment.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (Industry R&D Collaborations)

Investment maturity

Applied research and development

Investment figure

15513672

Low-carbon investment percentage

61-80%

Please explain

Southern Company's model for R&D includes active collaboration with the U.S. government, other utilities, universities and technology developers - a strategy that highly leverages both funding and expertise. Through these long-standing partnerships, Southern Company advances the most promising technology options for the energy sector in a low- to no-carbon future. Furthermore, this collaborative approach allows the matching of internal research investments – on average, dollar for dollar – through public-private partnerships and other forms of external cost-sharing. As a result, Southern Company's R&D organization has delivered significant benefits across the enterprise that, over the last 10 years, have averaged at least 10 times its investment. This program includes Southern Company's membership in the Electric Power Research Institute. Through EPRI, Southern Company collaborates with the entire electricity sector and its stakeholders to solve significant industry issues. Southern Company is a founding member of EPRI, with more than 80 employees from across the Southern Company system engaged at all levels, including advisory, council and board positions. Southern Company's annual membership in EPRI gains access to the institute's entire research portfolio. EPRI member benefits include best practices, better operations, reliability and customer service, access to white papers, as well as independent third-party data for regulators and stakeholders.

Investment start date

January 1 2018

Investment end date

December 31 2018

Investment area

R&D

Technology area

Other, please specify (Industry R&D Collaborations)

Investment maturity

Applied research and development

Investment figure

970000

Low-carbon investment percentage

61-80%

Please explain

In addition, Southern Company Gas (Nicor Gas) is a member of the Gas Technology Institute: Utilization Technology Development; Emerging Technology Program; and Operation Technology Development Programs. GTI collaborates with gas utilities in North America, leading researchers, government agencies, manufacturers and distributors to create and advance new technologies and products to save consumers money, enable efficient fuel choices, minimize environmental impacts, further integrating natural gas with renewable energy. Nicor Gas allocates funding to GTI's Carbon Management Information Center. Employees from Nicor Gas hold GTI board and advisory positions. GTI's R&D impacts and benefits ratepayers, utilities, other stakeholders, and our planet. Southern Company Gas is a member of the NYSEARCH organization. Similar to the Gas Technology Institute, NYSEARCH collaborates across gas utilities to develop new products and technologies for the betterment of the natural gas industry and consumers. Southern Company Gas employees hold board position and serve as technical industry leaders within the organization.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	No third-party verification or assurance
Scope 2 (location-based or market-based)	No third-party verification or assurance
Scope 3	No third-party verification or assurance

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

No, but we are actively considering verifying within the next two years

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, and we do not anticipate being regulated in the next three years

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

- Navigate GHG regulations
- Stakeholder expectations
- Change internal behavior
- Drive low-carbon investment
- Stress test investments
- Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Application

The Southern Company system applies its CO₂ price paths in its analyses supporting investment decision-making for the current and future generating plants of all its retail electricity businesses.

Actual price(s) used (Currency /metric ton)

20

Variance of price(s) used

The Southern Company system considers three different paths of future CO₂ price. One path maintains the current \$0 price; one path has a price that starts at \$10; and one path starts at \$20. The latter two paths increase at a rate above inflation.

Type of internal carbon price

Other, please specify (CO₂ price paths in scenario analysis)

Southern Company uses its CO₂ price paths in scenario analyses. The analyses consider both the evolution of the US energy economy and the least-cost evolution of the Southern Company generating portfolio. In different scenarios, different paths for future CO₂ prices are assumed. The price path is assumed to arise from a future market-based CO₂ control policy such as a carbon tax or cap-and-trade program.

Impact & implication

The Southern Company system's annual integrated resource planning process, which includes two primary components: energy economy modeling and integrated resource planning, provides for an understanding of the impacts to individual sectors of the economy and the interaction between sectors at the macro-economy level which provides significant insight to informing and identifying broad industry risks and potential business strategies. This scenario format also serves as a basis for integrated resource planning at the state regulated electric operating companies – and ultimately informs major generation retirement and capital investment decisions. As of July 2019, the comprehensive scenario planning process has resulted in 6,300 MW of coal and oil-fired retirements since 2010. In addition, because of the projected energy benefit realized by renewable energy resources and the ability to use the energy to serve customers with renewables or sell the renewable energy or associated RECs to third parties for the benefit of customers, as of July 2019 more than 5,200 MW of renewable generation has been added since 2010.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Innovation & collaboration (changing markets)

Details of engagement

Other, please specify (Work with industry to reduce emissions)

% of suppliers by number

18

% total procurement spend (direct and indirect)

18

% Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

Southern Company Gas is a founding member of ONE Future. ONE Future was formed with a focus to collectively achieve a science-based average rate of methane emissions across our facilities equivalent to one percent (or less) of total natural gas production. With operations across every part of the natural gas value chain, we are focused on identifying policy and technical solutions that yield continuous improvement in the management of methane emissions. ONE Future members are a target for engagement as they have all made commitments to reduce methane emissions. Southern Company, along with other ONE Future members, hopes to increase membership in ONE Future to include additional natural gas suppliers and producers which would increase reductions across the entire value chain.

Impact of engagement, including measures of success

The % of suppliers and % of total procurement spend is reflective of spend by the Southern Company electric operations with companies that are either members of ONE Future or part of companies that are engaged in ONE Future. In some cases, an affiliate company is the participating member for a supplying company, and the supplier itself is not a named member of ONE Future. To achieve ONE Future's collective one percent target, ONE Future has identified sectoral performance targets for each of the four major industry sectors (Exploration and Production; Gathering and Processing; Transmission and Storage, and Distribution and Retail) that would cumulatively add up to its overall one percent goal. ONE Future has worked to set these performance targets in rough proportion to each industry sectors' respective share of current emissions, considering reduction potentials given current regulatory barriers. These sectoral targets serve both to benchmark company progress toward their goals, but also to facilitate comparisons amongst diverse companies as each strives for optimal performance. Success of these engagement efforts will be demonstrated a more companies become a part of ONE Future and as member companies reach their methane reduction goals.

Comment

ONE Future's members begin with a focus on the outcome they want to achieve. In the case of methane emissions, our desired outcome is to collectively achieve an average rate of emissions across all facilities that is equivalent to one percent (or less) of total produced and delivered natural gas. With one goal in mind, each member company has the flexibility to deploy their capital where it will be maximally effective in reducing emissions. For one company that may be deploying an innovative technology, for another modifying a work practice, or another retiring an asset. To demonstrate credible and measurable results, ONE Future companies agree to measure their emissions and track their progress over time according to uniform, EPA-approved reporting protocols. This is effective, because most studies demonstrate that the majority of methane emissions come from a small fraction of sources. This approach allows companies to focus their resources on identifying and addressing those sources. The percentage of total procurement spend of Southern Company Gas (direct and indirect, but excluding procurement by its subsidiary SouthStar Energy Services LLC) on natural gas commodity, transportation and storage with companies that are either members of ONE Future or part of companies that are engaged in ONE Future is 15%. In some cases, an affiliate company is the participating member for a supplying company, and the supplier itself is not a named member of ONE Future.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Education/information sharing

Details of engagement

Share information about your products and relevant certification schemes (i.e. Energy STAR)

% of customers by number

100

% Scope 3 emissions as reported in C6.5

0

Please explain the rationale for selecting this group of customers and scope of engagement

Energy efficiency programs and products are made available to all customers served by each of the electric operating companies. There are specific programs and products targeted at residential and commercial customers to increase the efficiencies of their homes and businesses and ultimately decrease energy usage. Programs include appliance incentives for upgrading to new more efficient models, home energy check-ups, Home Energy Improvement Programs, and behavior analysis programs focused on reducing energy usage and available to all customers. Southern Company Gas natural gas energy efficiency programs offer customers a wide array of energy saving measures and incentives. These programs are designed and implemented to help customers conserve energy and save money, without sacrificing comfort, style or convenience.

Impact of engagement, including measures of success

The programs are all facilitated by individual retail operating companies, and success is measured in various ways for each program including but not limited to tracking of rebates for appliance installations and tracking participation in auditing and behavioral programs. The most telling measure of success is the reduction in electricity usage of 3 billion kWh of energy from our electric utility. Since 2011, energy efficiency programs have helped Southern Company Gas' natural gas system reduce demand and customers' emissions from natural gas by more than 130 million therms through July 2019, or the equivalent of approximately 689,000 metric tons of CO2.

Type of engagement

Education/information sharing

Details of engagement

Share information about your products and relevant certification schemes (i.e. Energy STAR)

% of customers by number

100

% Scope 3 emissions as reported in C6.5

0

Please explain the rationale for selecting this group of customers and scope of engagement

Southern Company electric operating companies each have programs and services available to all customers related to renewable generation including but not limited to programs such as Community Solar and Simple Solar programs offered by Georgia Power and the Greener State Program offered by Alabama Power. Due to multiple program offerings, Georgia Power, for example, offers solar education and analysis to assist all customers in determining which solar option is best for them.

Impact of engagement, including measures of success

The programs are all facilitated by individual retail operating companies, and success is measured in various ways for each program. As a result of the 2016 IRP, Georgia Power came out with multiple new solar program offerings for customers. More than 2,000 customers are now participating in one or more programs.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

- Direct engagement with policy makers
- Trade associations
- Funding research organizations
- Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Energy efficiency	Support with minor exceptions	Southern Company actively seeks direct, open communication with various policymakers, regulators, and stakeholders. Southern Company has a presence in Washington, D.C., that enables a constructive dialogue with policymakers in the federal government. The company attempts to ensure policymakers are provided accurate information that leads to appropriate discussions, debates and decisions on policy issues that could impact the Southern Company system's business units and customers.	Southern Company will continue to support energy efficiency policies where cost effective measures can be achieved.
Clean energy generation	Support with minor exceptions	Southern Company actively seeks direct, open communication with various policymakers, regulators, and stakeholders. Southern Company has a presence in Washington, D.C., that enables a constructive dialogue with policymakers in the federal government. The company attempts to ensure policymakers are provided accurate information that leads to appropriate discussions, debates and decisions on policy issues that could impact the Southern Company system's business units and customers.	Southern Company will continue to support growth in lower-emitting generation and continued development and deployment of a diverse portfolio of energy resources to reliability and affordably serve customers with a focus on reducing CO2 emissions.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

Edison Electric Institute (EEI)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

EEI is supportive of regulating greenhouse gases under the Clean Air Act absent any federal climate legislation. <http://www.eei.org/issuesandpolicy/environment/climate/Pages/dompolicyinitiatives.aspx>

How have you influenced, or are you attempting to influence their position?

Southern Company serves on multiple committees and in leadership positions in EEI.

Trade association

American Gas Association (AGA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

AGA advocates for government rules and policies that protect the environment while allowing its natural gas utility members to continue to deliver clean, affordable natural gas to customers, safely and reliably. <https://www.aga.org/policy/environment/>

How have you influenced, or are you attempting to influence their position?

Southern Company serves on the Board of Directors

Trade association

Nuclear Energy Institute (NEI)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

NEI promotes a low-carbon economy using clean energy sources, such as nuclear energy, which produces carbon free electricity along with being supportive of advanced technologies.

How have you influenced, or are you attempting to influence their position?

NA

Trade association

U.S. Chamber of Commerce

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The U.S. Chamber of Commerce supports the reduction of greenhouse gases through technology and innovation.
<https://www.uschamber.com/>

How have you influenced, or are you attempting to influence their position?

Southern Company is a member of the U.S. Chamber of Commerce and actively engages on multiple issues taken up by the membership. Southern Co. may not agree with the U.S. Chamber on every issue or have influence over various issues but we find it valuable to continue our participation.

Trade association

Business Roundtable

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Business Roundtable is made up of member company CEOs of leading U.S. companies that promote access to reliable affordable energy, national and economic security and a clean, healthy environment. Business Roundtable supports policies that capitalize on America's strengths in technology and energy diversity to maximize U.S. energy options and preserve environmental quality and believes the business community has a special obligation to step forward and help build an environmentally and economically sustainable future.

How have you influenced, or are you attempting to influence their position?

Southern Company's CEO is a member of the Business Roundtable.

Trade association

American Coalition for Clean Coal Electricity (ACCCE)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

ACCCE advocates at the federal and state levels on behalf of coal-fueled electricity and the coal fleet and supports regulating greenhouse gases under the Clean Air Act where it does not threaten the reliability and resiliency of the electric grid.

How have you influenced, or are you attempting to influence their position?

Southern Company is a member of the ACCCE and actively engages on multiple issues taken up by the membership. Southern Co. may not agree with the ACCCE on every issue or have influence over various issues but we find it valuable to continue our participation.

Trade association

Alliance to Save Energy

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Alliance to Save Energy focuses on using energy more productively to achieve economic growth, a cleaner environment and greater energy security, affordability and reliability.

How have you influenced, or are you attempting to influence their position?

As a member, Southern Company is actively engaged on energy efficiency issues and serves at the board level.

Trade association

Alliance for Transportation Electrification

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Alliance for Transportation Electrification advocates the acceleration of transportation electrification nationwide. The Alliance believes that a multi-stakeholder coalition educating and promoting the benefits of transportation electrification is necessary and will benefit the public welfare in the States for many reasons. Alliance for Transportation Electrification supports increased electrification measures that ultimately result in reduced greenhouse gas emissions.

How have you influenced, or are you attempting to influence their position?

As a member, Southern Company is actively engaged on electric transportation issues and serves at the board level.

Trade association

Electric Drive Transportation Association (EDTA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Electric Drive Transportation Association focuses on investing in energy and economic security with a consistent policy environment for electric vehicles and infrastructure. Increased electrification measures ultimately result in reduced greenhouse gas emissions.

How have you influenced, or are you attempting to influence their position?

As a member, Southern Company is actively engaged on electric transportation issues and serves at the board level.

Trade association

Interstate Natural Gas Association of America (INGAA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

INGAA promotes low-carbon emissions through reduced methane leaks in the natural gas pipeline system to deliver clean, abundant, affordable natural gas.

How have you influenced, or are you attempting to influence their position?

Southern Company is a member of INGAA and actively engages on multiple issues taken up by the membership.

Trade association

Southeast Energy Efficiency Alliance (SEEA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

SEEA provides regional context and technical expertise to advance energy efficiency policy. SEEA serves as a resource to state energy offices, public service commissions, environmental agencies and other state-based stakeholders, providing technical expertise on priority issue areas within our states.

How have you influenced, or are you attempting to influence their position?

As a member, Southern Company is actively engaged on energy efficiency issues and serves at the board level.

Trade association

Consortium for Energy Efficiency

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Consortium for Energy Efficiency promote programs that involve seeding the market with a mix of financial incentives, technical assistance, product or service promotion, and other innovative means to encourage energy saving design strategies, affect purchasing decisions, and shape consumer behaviors. Support of increased energy efficiency measures ultimately result in reduced greenhouse gas emissions.

How have you influenced, or are you attempting to influence their position?

As a member, Southern Company is actively engaged on energy efficiency issues to accelerate the development and availability of energy efficient products and services for our customers.

Trade association

American Wind Energy Association (AWEA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

AWEA is the premier national trade association that represents the interests of America's wind energy industry representing hundreds of member organizations that drive wind energy demand and to make it as cost-competitive as possible.

How have you influenced, or are you attempting to influence their position?

As a member, Southern Company is actively engaged on wind energy issues to implement policies that help with deployment and operations. Southern Co. served at the board level.

Trade association

Energy Storage Association (ESA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The ESA believes that energy storage is a fundamental part of a secure energy future and an effective, "all-of-the-above" national energy strategy support of energy storage tax incentives, research and development, and broader awareness campaigns.

How have you influenced, or are you attempting to influence their position?

As a member, Southern Company is actively engaged in energy storage issues.

Trade association

American Council on Renewable Energy

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

American Council on Renewable Energy's policy work focuses on key tax, finance, grid modernization and other issues that are important for renewable energy expansion that ultimately result in reduced greenhouse gas emissions.

How have you influenced, or are you attempting to influence their position?

As a member, Southern Company is actively engaged on renewable energy investment and deployment.

Trade association

Smart Electric Power Alliance (SEPA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

SEPA focuses on clean energy (solar, demand response, energy storage and electric transportation) and grid modernization that ultimately result in reduced greenhouse gas emissions.

How have you influenced, or are you attempting to influence their position?

As a member, Southern Company is actively engaged on energy efficiency issues and serves on the advisory board.

Trade association

Southeastern Wind Coalition

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Southeastern Wind Coalition focuses on education and outreach to advance the wind industry in the Southeast U.S.

How have you influenced, or are you attempting to influence their position?

As a member, Southern Company is actively engaged on wind energy issues to implement policies that help with deployment and operations. Southern Company serves at the board level.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

No

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

Southern Company places great importance on consistent dialogue with all our stakeholders, including customers, employees, and investors. We regularly engage in discussions with, and provide comprehensive information for, constituents interested in our corporate governance citizenship, stewardship and environmental compliance. We are receptive to stakeholder concerns, and we are committed to transparency and proactive interactions with our investors. We regularly communicate with our stakeholders to better understand their viewpoints, gather input on our business strategy and execution and obtain feedback regarding other matters of interest. The feedback received from our outreach efforts informs discussions in the boardroom.

Since 2011, we have held regular environmental stakeholder forums, webinars, calls and meetings covering a range of topics, including regulatory and policy issues, system risk and planning related to renewables, energy efficiency and GHG matters. Members of senior management participate in these events, including the Chairman and CEO; CFO; Chief Legal Officer; SVP of Operations and SVP of Environmental and System Planning. At the annual environmental stakeholder forum in May 2018, topics included carbon reduction strategies, understanding global sustainability goals and advancing energy policy. Webinars that followed the annual stakeholder meeting included one discussing natural gas in which the Southern Company Gas environmental team and the research and development team from the National Carbon Capture Center participated, and one discussing our CDP Climate Disclosure for 2018.

The Board of Directors places great importance on regularly communicating with our stockholders to better understand their viewpoints and gather feedback. The NGCR Committee of the Board oversees our stockholder engagement efforts on behalf of the Board.

In 2018 and early 2019, we reached out to our 100 largest stockholders representing more than 50% of our outstanding shares and offered to engage on ESG topics, among others. We also reached out to stockholders that are not among our 100 largest but expressed an interest in engaging with us. We received positive responses from, and had more than 60 engagements with, 40 stockholders or stockholder advisors representing 35% of our outstanding shares. We engaged with a broad range of stockholders, including index funds, union and public pension funds, actively-managed funds and socially-responsible investment funds, as well as stockholder advisory firms. Key topics for stockholder engagement included environmental matters, cybersecurity, executive compensation, leadership development, human capital management, corporate culture, Board leadership structure, on-boarding of new Directors and Board risk oversight, and how these topics tie to our long-term strategic thinking. Participants in these engagements included independent directors (Lead Independent Director, Chair of NGCR Committee, Chair of CMS Committee and Chair OES Committee); Chairman and CEO; CFO; Chief Legal Officer; SVP of Environmental and System Planning; SVP of Human Resources/Total Rewards; VP, Corporate Governance; and Director, Investor Relations.

In addition, our investor relations group leads our management team in hundreds of investor meetings throughout the year to discuss our business, our strategy and our financial results. These meetings include in-person, telephone and webcast conferences.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

To ensure consistency, Southern Company's policy organizations evaluate our membership and/or funding of relevant organizations through regular and consistent communication with our individual operating companies' management and staff. In addition to serving at the leadership level in multiple organizations, many Southern Company subject matter experts advise the organizations in multiple instances.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In voluntary sustainability report

Status

Complete

Attach the document

2018_Corporate_Responsibility_Report.pdf

Page/Section reference

Content elements

Governance

Emissions figures

Emission targets

Other metrics

Comment

Publication

Other, please specify (Communications regarding carbon issues)

Status

Complete

Attach the document

Planning-for-a-low-carbon-future.pdf

EEl-ESG-Sustainability-Reporting-Template.pdf

Page/Section reference

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

Comment

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chairman, President, & CEO Southern Company	Board chair

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

No

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges

Please explain what would help you overcome these challenges

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

National customers can receive state specific emission factors by reaching out to their nSouthern Company ational accounts representatives. Local customers can receive state specific emission factors by reaching out to the marketing representative at each Operating Company.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC3.1

(SC3.1) Do you want to enroll in the 2019-2020 CDP Action Exchange initiative?

No

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2018-2019 Action Exchange initiative?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Public	Investors Customers	Yes, submit Supply Chain Questions now

Please confirm below

I have read and accept the applicable Terms