Emissions Reduction Progress and Reporting

Company Overview

Southern Company[1] is a leading energy company, providing clean, safe, reliable and affordable energy to customers and communities through our electric and natural gas subsidiaries. We remain focused on building a diverse energy portfolio, developing innovative programs and services for our customers and researching new clean energy technologies.

Customer demand for energy is growing rapidly across the United States, including in the Southern Company service territory. To meet this demand, our companies are hard at work expanding capacity and infrastructure to strengthen and secure the energy grid. Through our investments, we aim to enhance reliability and national security and build a more resilient, cleaner energy future — without compromising on affordability.

Our traditional electric operating companies make recommendations to their state regulatory agencies that appropriately consider costs to serve customers with reliable energy while recognizing potential future environmental and fuel supply pressures. It is important that we, with oversight from state regulators and input from local stakeholders, retain the ability to plan and deploy infrastructure that affordably and reliably meets the needs of all customers and communities. Our infrastructure investment analyses and system expansion strategies include:

- → Efficient use of natural gas
- → Continued assessment of coal-fired generating assets, with the use of environmental control technologies
- → Further growth in our portfolio of clean energy resources, including nuclear energy, renewables, hydroelectric power, renewable natural gas and energy storage
- → Continued deployment of modern energy distribution systems that adapt to changing conditions to serve customer needs
- → Enhanced demand response, energy efficiency initiatives and distributed energy resources
- → Continued investment in research and development of emerging clean energy technologies, including carbon capture, storage and sequestration and advanced nuclear

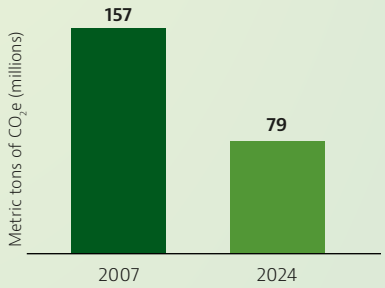
The natural gas distribution utilities also engage in long-term planning in accordance with their state regulatory processes and are investing in programs and efforts to reduce greenhouse (GHG) emissions associated with the delivery and use of natural gas, such as advanced leak detection and repair and renewable natural gas.

Scope 1 Emissions Reduction Progress

We have established a GHG reduction goal to reach net zero by 2050. This goal is enterprise-wide, encompassing our equity-share Scope 1 emissions from all our electric and natural gas operations. Since 2007, we have economically transitioned our generating fleet to include lower-carbon and carbon-free fuel sources, reducing our Scope 1 GHG emissions.

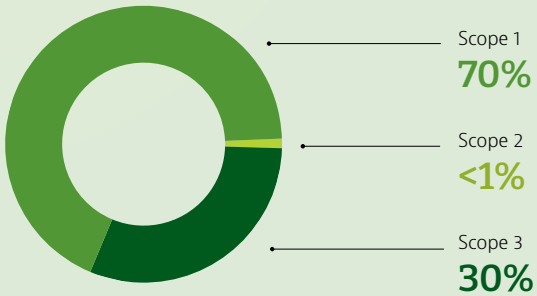
In 2024, we reduced our Scope 1 GHG emissions by 49% from 2007 levels, decreasing to 79 million metric tons of CO_2e from 157 million metric tons of CO_2e in 2007. The data presented below are enterprise-wide emissions and do not reflect any particular business unit or customer's emissions. Our Scope 1 emissions comprised 70% of our gross global emissions, followed by Scope 3 at 30% and Scope 2 at <1%. Our ability to reduce our GHG emissions is dependent on many factors, many of which are outside our control, including load growth, energy policy and regulations, natural gas prices, customer demand for carbon-free energy, and the development and deployment of low- to no-GHG energy technologies.

2024 Total Scope 1 GHG Emissions
based on equity share



▼ 49% reduction since 2007

2024 GHG Emissions by Scope
% of total



Southern Company's GHG emissions are calculated using the equity share approach presented in the WRI/WBCSD GHG Protocol for all its owned assets.

Emissions Reporting

Southern Company regularly discloses climate-related information, including GHG emission reduction progress, which provides transparency related to our performance and strategy. We annually report all relevant sources of Scope 1, Scope 2 and Scope 3 emissions in the Southern Company Data Table. We also have obtained limited assurance from Deloitte & Touche LLP for Scope 1 and 2 emissions for 2024, 2023, 2022, 2021 and 2020, as well as for Scope 1 emissions for the 2007 baseline.

Scope 1

Scope 1 includes direct GHG emissions from sources that are owned or controlled by the reporting company. For example, emissions from combustion in owned or controlled boilers, furnaces, or vehicles.[2]

Scope 2

Scope 2 includes GHG emissions from the generation of purchased electricity consumed by the reporting company. Purchased electricity is electricity to be consumed that is purchased or otherwise brought into the organizational boundary of the company.[2]

Scope 3

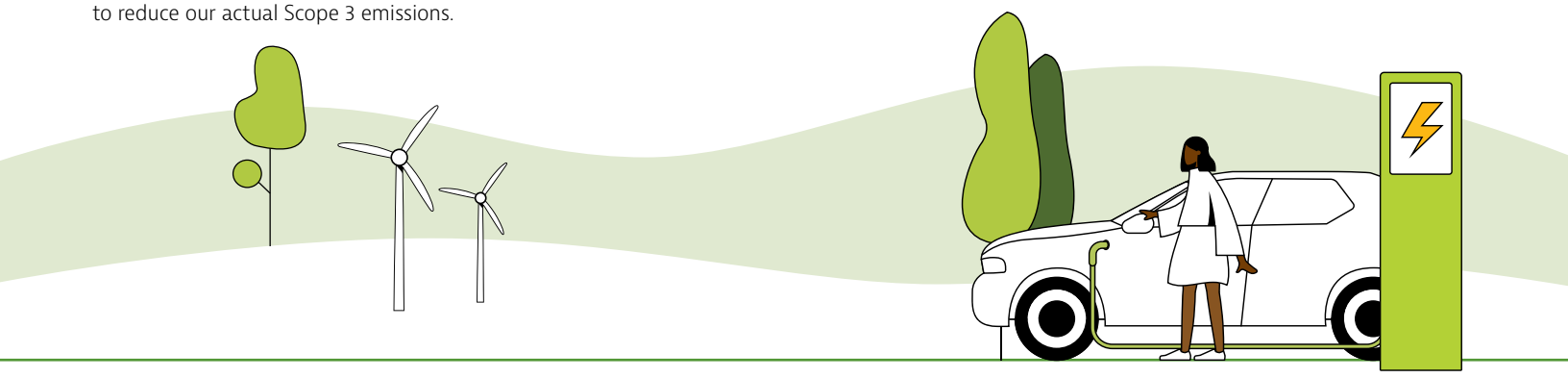
Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.[3]

Scope 3 Relevant Emissions

Southern Company annually discloses emissions for all relevant Scope 3 emissions categories. For 2024, Category 11: Use of sold products (50%) and Category 3: Fuel-and-energy-related activities (42%) contributed the most to the Scope 3 emissions total for our company.

- **Purchased goods and services and Capital goods:** emissions associated with Southern Company's supply chain purchases.
- **Fuel-and-energy-related activities:** emissions from purchased electricity for resale and upstream emissions from the extraction, production, and transportation of purchased fuel (coal, natural gas, fuel oil, and nuclear fuel).
- **Upstream transportation and distribution:** emissions associated with transporting purchased goods from supplier to Southern Company.
- **Waste generated in operations:** emissions from mixed solid waste, paper, wood, metals, electronics and other recyclables, wastewater treatment, and spent nuclear fuel management.
- **Business travel:** emissions associated with air, hotel, and rental car travel.
- **Employee commuting:** emissions associated with travel to work in employee-owned vehicles.
- **Upstream leased assets:** emissions from fuel combustion in leased vehicles and aircraft and electricity purchased for leased assets outside of the Southern Company retail service territory.
- **Use of sold products:** emissions from combustion of natural gas sold directly to end users.
- **Investments:** emissions from Southern Company's investments with Energy Impact Partners.

Given the lack of standardization and accuracy of measurement methodologies and protocols for reporting Scope 3 emissions, as well as other factors, Southern Company has not established a target for Scope 3 emissions. We are actively supporting efforts to standardize methane emissions measurement, engaging in efforts to standardize reporting of Scope 3 emissions, including related mitigation approaches, and taking tangible action to reduce our actual Scope 3 emissions.



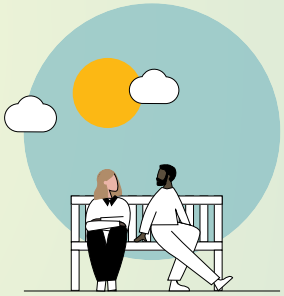
Air Quality

Southern Company has a long history of reducing emissions from our power plants, while meeting the growing energy needs of some of the fastest-growing states in the United States. We have invested over $15 billion in environmental controls on our power plants to reduce emissions of nitrogen oxides (NO_x), sulfur dioxide (SO_2), mercury and other air pollutants, and we have converted many of our coal generating facilities to natural gas.

Nitrogen oxides emissions result from the combustion of any material, including coal, gasoline and natural gas. We have made significant investments to reduce our emissions of NO_x through the use of various technologies, including low NO_x burners, and emissions controls, such as selective catalytic reduction (SCR) systems. SCRs work by adding ammonia to the flue gas exiting the boiler, where a catalyzed chemical reaction between ammonia and NO_x is converted to harmless nitrogen and water. An SCR can reduce NO_x emissions by up to 80 percent on coal units and up to 95 percent on gas units.

Sulfur dioxide comes from the sulfur found naturally in coal when it is burned in a boiler to produce electricity. We have installed "scrubbers," which are systems that remove SO_2 from the flue gas exhaust of coal-fired units via a chemical reaction with limestone that produces gypsum, a material used for the production of wallboard and fertilizer. Our scrubbers are designed to remove up to 98 percent of SO_2.

Mercury is a trace impurity in coal that is released when coal is burned. The combination of scrubbers (to reduce SO_2) and SCRs (to remove NO_x) also removes significant amounts of mercury at coal-fired power plants. We also operate additive injection systems and baghouses to reduce mercury emissions, acid gases and dust particulate matter emissions. Baghouses can occupy 2 million cubic feet, filtering emission gases through, for example, 20,000 fabric bags that are 26 feet long and approximately 5 inches around.



We have significantly reduced NO_x and SO_2

from 1990 levels and mercury emissions from 2005 levels.

NO_x emissions
93%

SO_2 emissions
99%

Mercury emissions
97%

To learn more about our air quality efforts for the electric operations, please visit:

Alabama Power | Georgia Power | Mississippi Power

[1] In this fact sheet, the terms "we", "us" and "our" all refer to Southern Company. Southern Company is a holding company that conducts its business through its subsidiaries. Accordingly, unless the context otherwise requires, references in this document to Southern Company's operations, such as generating activities, greenhouse gas emissions and employment practices, refer to those operations conducted through its subsidiaries.

[2] World Resources Institute (WRI) Sustainability Dashboard Methodology

[3] Greenhouse Gas Protocol Scope 3 Emissions FAQ