Duke Energy has already reduced its CO_2 emissions from electricity generation by 44% below 2005 levels through 2021.

Metrics and Targets

(TCFD: Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material. Disclose the targets used by the organization to manage climate-related risks and opportunities and performance against targets.)

Goals

Scope 1 goals

For our electric generation business, our updated Scope 1 goals are at least a 50% reduction in carbon emissions below 2005 levels by 2030, an 80% reduction by 2040, and to achieve net-zero carbon emissions by 2050. We have also established a goal for coal to represent 5% of our generation mix by 2030 and to exit coal generation by 2035.[34] For our natural gas distribution business, our goal is to achieve net-zero methane emissions by 2030.

Through 2021, we have reduced Scope 1 carbon emissions from electricity generation by 44% from 2005 levels, the equivalent of removing 13 million vehicles from the road.

Examples of actions we have taken to reduce Scope 1 emissions in our electricity business include:

- Retired 56 coal units, representing approximately 7,500 MW since 2010.
- Filed the Carolinas Carbon Plan in line with the North Carolina mandate to achieve a 70% reduction in carbon emissions by 2030 and carbon neutrality by 2050.
- Filed resource plans in the Midwest and Florida with preferred scenarios that support exiting coal generation by 2035.
- Submitted an application to the Nuclear Regulatory Commission for a subsequent license renewal for Oconee Nuclear Station to keep this carbon-free energy source running for an additional 20 years. We plan to pursue similar license renewals for each of our 11 nuclear units.
- Installed or contracted for significant renewable generation, with renewables projected to represent nearly 20% of generation by 2030 and to total, in our regulated utilities, 30,000 MW by 2035 (both utility-owned and under purchased power agreements).

34 Achieving these goals depends on necessary regulatory approvals (which will require demonstration of no adverse effect on grid reliability and reasonable and prudent costs), the ability to site and construct new generation and transmission facilities, available supply chains for new generation and transmission equipment and natural gas availability.

Our natural gas business has partnered with Microsoft and Accenture to pioneer a unique satellite-based methane leak detection system.

Our natural gas business continues to work to achieve its Scope 1 goal, with actions including:

- Replaced more than 1,400 miles of cast iron and bare steel pipe, resulting in the elimination of more than 95% of the methane emissions previously attributed to the cast iron and bare steel infrastructure.
- Partnered with Accenture and Microsoft on a unique satellite leak detection platform designed to measure actual baseline methane emissions from natural gas distribution systems.
- Accelerated efforts to reduce leak inventory using a "find it, fix it" approach. Under this program, we are fixing small leaks faster and, as new leak detection technology is added, we will be able to quickly address leaks as they are found. This has resulted in an 85% reduction in leaks since the beginning of 2021.
- Piloting new technologies to improve measurement and monitoring of methane emissions, including satellite technology and real-time measurement devices to pinpoint and repair leaks faster.
- Adopting cross compression technology to eliminate intentional emissions from blow-downs or flaring during operational activities when possible.
- Investing in RNG projects and continuing to work with our jurisdictions to expand RNG availability for our customers.
- Sourcing RNG for our compressed natural gas stations in Nashville and expanding the use of RNG to our other publicly accessible fueling stations, further increasing the environmental benefit of CNG.

Scope 2 and 3 goals and projections

This year we expanded our 2050 net-zero goals to include Scope 2 and certain Scope 3 emissions:

- In the electric business, our net-zero goal will include greenhouse gas emissions from the power we purchase for resale, from the procurement of fossil fuels used for generation, and from the electricity purchased for our own use.
- For the natural gas business, it includes upstream methane and carbon emissions related to purchased natural gas and downstream carbon emissions from customers' consumption of sold gas.

We have also analyzed our overall greenhouse gas emissions in more detail and disclose 2021 Scope 1, 2, and 3 emissions below. Our methodology and assumptions for calculating these emissions

were reviewed by a third party to provide additional confidence in the numbers. Our net-zero goals for Scopes 1, 2, and 3 now cover 95% of our calculated 2021 greenhouse gas emissions.

We have also projected our Scope 2 and 3 emissions over time through 2050 and have, based on this analysis, introduced interim targets to achieve a 50% emissions reduction by 2035 for the Scope 2 and Scope 3 emissions included in our net-zero by 2050 goal.

Several factors give us confidence that we can meet this Scope 2 and 3 interim goal:

- As we transition out of coal and away from geologic gases as sources of electricity generation, there will no longer be upstream emissions related to coal mining and transportation and reduced emissions related to gas procurement.
- We expect that emissions associated with purchases of electricity for resale (Scope 3) and our own use (Scope 2) will similarly decline as our industry peers reduce their emissions (for example, the majority of electric generators have net-zero goals for the 2040 to 2050 time frame).[35] Energy efficiency opportunities and, as noted above, the transition of our industry peers to net-zero carbon emissions will support the net-zero trajectory for Scope 2.
- And, as discussed above in the section on our natural gas business, we will continue to work upstream with suppliers to reduce emissions from geologic gas we procure, and will reduce downstream emissions through customer efficiency, the use of RNG and hydrogen, as well as offset program.

(TCFD: Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas emissions.)

Below is a summary of Duke Energy's Scope 1, 2, and relevant 3 emissions. All emissions in blue backgrounds are included in Duke Energy's goals.

Scope 1 Greenhouse Gas Emissions

Emissions from electric generation (thousand metric metric tons of CO_2 equivalent (or CO_2e))

	2005	2019	2020	2021
CO_2e	139,000	84,000	74,000	77,406

35 Scope 2 emissions associated with purchased power for Duke Energy facilities we do not serve and transmission line losses account for only 0.39% of Duke Energy's total emissions.

Methane emissions from natural gas distribution[36] (thousand metric tons)

	2018	2019	2020	2021
CH_4 (CO_2e) [37]	160	308	327	322

Sulfur Hexafluoride (SF_6) emissions from electric transmission and distribution[38] (thousand metric tons)

	2018	2019	2020	2021
SF_6 (CO_2e)	305	477	384	363

Other Scope 1 emissions[39] (thousand metric tons CO_2e)

	2021
Fleet (forklifts, cars, trucks)	110
Ancillary equipment	844
Refrigerants	80
Natural gas use at Duke Energy buildings	4

Scope 2 Greenhouse Gas Emissions

Scope 2 greenhouse gas emissions (thousand metric tons CO_2e)

	2021
Power purchases for Duke Energy facilities that are not served by Duke Energy itself	3
Transmission line losses	425

36 Methane emissions are calculated by applying EPA Subpart W emission factors to facility counts such as miles of pipeline, and the number of meters/services and adding component leaks based on survey data. This methodology does not provide for an accounting of emission reduction efforts; rather, the methodology reflects an increase due to greater miles of pipe and meters as the company grows the natural gas business. The eventual use of more direct measurement in the coming years will provide actual measured emissions and performance metrics.

37 2019, 2020, and 2021 values are based on Natural Gas Sustainability Initiative (NGSI) reporting; 2018 predates adoption of NGSI and represents EPA Subpart W reported emissions.

38 SF_6 emissions vary year to year due to maintenance, replacement and storm repair needs.

39 Note that emissions for which only 2021 values are reported have not been reported previously and were developed during 2022.

Over 95% of Duke Energy's calculated Scope 1, 2, and 3 emissions for 2021 fall into currently stated net-zero goals.

Relevant Scope 3 Greenhouse Gas Emissions

Relevant Scope 3 greenhouse gas emissions (CO_2e, thousand metric tons)

	2021[40]
Category 1 – purchased goods and services	2,800
Category 3 – fuel and energy-related activities not included in Scope 1 or 2 – upstream emissions from natural gas suppliers for natural gas distribution business	1,020
Category 3 – upstream emissions (extraction, production, & transportation) from purchased fossil fuels for electricity generation	5,500
Category 3 – emissions associated with power purchased for resale	13,300
Category 3 – emissions associated with other fuel purchases	280
Category 5 – waste	51
Category 6 – business travel	4
Category 7 – employee commuting	84
Category 10 – processing of sold products	346
Category 11 – use of sold products – emissions from the use of natural gas sold to customers	6,608

40 Some data shown are estimates based on the most recent data available.