Alphabet

CDP Climate Change Response 2024

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C1. Introduction

(1.1) In which language are you submitting your response?

Select from:
☑ English

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

Select from:
☑ USD

(1.3) Provide an overview and introduction to your organization.

(1.3.2) Organization type

Select from:
☑ Publicly traded organization

(1.3.3) Description of organization

Alphabet is a collection of businesses—the largest of which is Google. We report Google in two segments, Google Services and Google Cloud, and all non-Google businesses collectively as Other Bets. Our mission to organize the world's information and make it universally accessible and useful is as relevant today as it was when we were founded in 1998. Since then, we've evolved from a company that helps people find answers to a company that also helps people get things done. Google Services' core products and platforms include ads, Android, Chrome, devices, Gmail, Google Drive, Google Maps, Google Photos, Google Play, Search, and YouTube, with broad and growing adoption by users around the world. Google Cloud includes infrastructure and platform services, collaboration tools, and other services for enterprise customers. Our headquarters are located in Mountain View, California. We own and lease office facilities and data centers around the world, primarily in Asia, Europe, and North America. We own and operate data centers in Asia, Europe, North America, and South America. As of December 31, 2023, Alphabet had 182,502 employees. Our revenues for the fiscal year ended on December 31, 2023 were $307.4 billion, approximately 99% of which came from the Google Services and the Google Cloud segments. As used herein, "Alphabet," "the company," "we," "us," "our," and similar terms include Alphabet Inc. and its subsidiaries, unless the context indicates otherwise. Throughout this report, we use the term "sustainability" to refer to environmental sustainability. We use energy and natural resources to build and operate our data centers and offices around the world, and to power the many products and services that our customers and users rely on. Our main sources of GHG emissions include: natural gas use, refrigerant leakage in our data centers and offices, fuel use from back-up generators, and transportation (i.e., company vehicles and aircraft) for Scope 1 emissions; purchased electricity for our data centers and offices for Scope 2 emissions; and the majority of our Scope 3 emissions are generated from the production of goods and services purchased for our operations, including the upstream manufacturing and assembly of servers and networking equipment used in our technical infrastructure. References to information throughout this CDP response should not be construed as a characterization regarding the materiality of such information to our financial results or our operations. While certain matters discussed throughout this CDP response may be significant, any significance should not be read as necessarily rising to the level of materiality used for the purposes of complying with applicable securities laws and regulations. The information throughout this CDP response may contain projections, future estimates, plans, expectations, goals, and other forward-looking statements. Forward-looking statements are based on current expectations and assumptions that are subject to certain risks and uncertainties, which could cause our actual results to differ materially from those reflected in the forward-looking statements. Any changes in methodology may result in material changes to our calculations and may result in the current and previous periods, including our base year, to be adjusted. Except as required by law, we undertake no obligation to correct, revise, or update any information included throughout this CDP response. All reported values represent the best data available at the time of our CDP response. Where actual data isn't available, we may use estimates. We base our estimates and methodologies on historical experience, available information, and on various other assumptions that we believe to be reasonable. All environmental data found throughout this CDP response is subject to measurement uncertainties resulting from limitations inherent in the nature and the methods used for determining such data. The selection of different but acceptable measurement techniques can result in materially different measurements. The precision of different measurement techniques may also vary. Some of our environmental metrics have been rounded.
[Fixed row]

(1.4) State the end date of the year for which you are reporting data. For emissions data, indicate whether you will be providing emissions data for past reporting years.

	End date of reporting year	Alignment of this reporting period with your financial reporting period	Indicate if you are providing emissions data for past reporting years
	12/31/2023	*Select from:* ☑ Yes	*Select from:* ☑ No

[Fixed row]

(1.4.1) What is your organization's annual revenue for the reporting period?

307394000000

(1.5) Provide details on your reporting boundary.

	Is your reporting boundary for your CDP disclosure the same as that used in your financial statements?
	Select from: ☑ Yes

[Fixed row]

(1.6) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

	Does your organization use this unique identifier?	Provide your unique identifier
Ticker symbol	*Select from:* ☑ Yes	*GOOG, GOOGL*

[Add row]

(1.7) Select the countries/areas in which you operate.

Select all that apply

- ☑ Peru
- ☑ Chile
- ☑ China
- ☑ Ghana
- ☑ India
- ☑ Canada
- ☑ France
- ☑ Greece
- ☑ Israel
- ☑ Mexico
- ☑ Belgium
- ☑ Croatia
- ☑ Czechia
- ☑ Denmark
- ☑ Finland
- ☑ Colombia
- ☑ Malaysia
- ☑ Portugal
- ☑ Slovakia
- ☑ Thailand
- ☑ Netherlands
- ☑ New Zealand
- ☑ Philippines
- ☑ Switzerland
- ☑ South Africa
- ☑ United Kingdom of Great Britain and Northern Ireland
- ☑ Italy
- ☑ Japan
- ☑ Kenya
- ☑ Spain
- ☑ Brazil
- ☑ Norway
- ☑ Poland
- ☑ Sweden
- ☑ Turkey
- ☑ Austria
- ☑ Germany
- ☑ Hungary
- ☑ Ireland
- ☑ Nigeria
- ☑ Romania
- ☑ Argentina
- ☑ Australia
- ☑ Indonesia
- ☑ Lithuania
- ☑ Singapore
- ☑ Taiwan, China
- ☑ Republic of Korea
- ☑ Hong Kong SAR, China
- ☑ United Arab Emirates
- ☑ United States of America

(1.24) Has your organization mapped its value chain?

(1.24.1) Value chain mapped

Select from:

- ☑ Yes, we have mapped or are currently in the process of mapping our value chain

(1.24.2) Value chain stages covered in mapping

Select all that apply

- ☑ Upstream value chain

(1.24.3) Highest supplier tier mapped

Select from:

- ☑ Tier 1 suppliers

(1.24.4) Highest supplier tier known but not mapped

Select from:

- ☑ Tier 2 suppliers

(1.24.7) Description of mapping process and coverage

For the purpose of our CDP report, the selections in this question are based on an example of supplier mapping conducted to determine the hardware suppliers we engaged via CDP Supply Chain in 2023, which was primarily based on procurement spend. This is an example, and is not representative of other supplier mapping efforts.
[Fixed row]

(1.24.1) Have you mapped where in your direct operations or elsewhere in your value chain plastics are produced, commercialized, used, and/or disposed of?

	Plastics mapping
	Select from: ☑ Yes, we have mapped or are currently in the process of mapping plastics in our value chain

[Fixed row]

C2. Identification, assessment, and management of dependencies, impacts, risks, and opportunities

(2.1) How does your organization define short-, medium-, and long-term time horizons in relation to the identification, assessment, and management of your environmental dependencies, impacts, risks, and opportunities?

Short-term

(2.1.1) From (years)

1

(2.1.3) To (years)

8

(2.1.4) How this time horizon is linked to strategic and/or financial planning

Our climate risk assessment considers short-term climate projections (2022 - 2030), which is aligned with the time frame for our goal to achieve net-zero emissions across our operations and value chain by 2030.

Medium-term

(2.1.1) From (years)

9

(2.1.3) To (years)

18

(2.1.4) How this time horizon is linked to strategic and/or financial planning

Our climate risk assessment considers medium-term climate projections through 2040, which is aligned with the interim time frame between our net-zero emissions by 2030 goal and the 2050 target date for net-zero emissions (as established by the IPCC).

Long-term

(2.1.1) From (years)

19

(2.1.2) Is your long-term time horizon open ended?

Select from:
☑ No

(2.1.3) To (years)

28

(2.1.4) How this time horizon is linked to strategic and/or financial planning

Our climate risk assessment considers long-term climate projections through 2050, which is aligned with the time frame established by the IPCC to reach net-zero emissions by 2050.
[Fixed row]

(2.2) Does your organization have a process for identifying, assessing, and managing environmental dependencies and/or impacts?

	Process in place	Dependencies and/or impacts evaluated in this process
	Select from: ☑ Yes	*Select from:* ☑ Both dependencies and impacts

[Fixed row]

(2.2.1) Does your organization have a process for identifying, assessing, and managing environmental risks and/or opportunities?

	Process in place	Risks and/or opportunities evaluated in this process	Is this process informed by the dependencies and/or impacts process?
	Select from: ☑ Yes	*Select from:* ☑ Both risks and opportunities	*Select from:* ☑ Yes

[Fixed row]

(2.2.2) Provide details of your organization's process for identifying, assessing, and managing environmental dependencies, impacts, risks, and/or opportunities.

Row 1

(2.2.2.1) Environmental issue

Select all that apply

☑ Climate change

(2.2.2.2) Indicate which of dependencies, impacts, risks, and opportunities are covered by the process for this environmental issue

Select all that apply

☑ Dependencies
☑ Impacts
☑ Risks
☑ Opportunities

(2.2.2.3) Value chain stages covered

Select all that apply

☑ Direct operations
☑ Upstream value chain
☑ Downstream value chain

(2.2.2.4) Coverage

Select from:

☑ Full

(2.2.2.5) Supplier tiers covered

Select all that apply

☑ Tier 1 suppliers

(2.2.2.7) Type of assessment

Select from:

☑ Qualitative and quantitative

(2.2.2.8) Frequency of assessment

Select from:

☑ Annually

(2.2.2.9) Time horizons covered

Select all that apply

☑ Short-term
☑ Medium-term
☑ Long-term

(2.2.2.10) Integration of risk management process

Select from:

☑ Integrated into multi-disciplinary organization-wide risk management process

(2.2.2.11) Location-specificity used

Select all that apply

☑ Site-specific

(2.2.2.12) Tools and methods used

Commercially/publicly available tools
☑ Other commercially/publicly available tools, please specify**:** WRI Aqueduct

Enterprise Risk Management
☑ Enterprise Risk Management
☑ Internal company methods
☑ Risk models

International methodologies and standards
☑ IPCC Climate Change Projections

Other
☑ Partner and stakeholder consultation/analysis
☑ Scenario analysis

(2.2.2.13) Risk types and criteria considered

Acute physical
☑ Drought
☑ Flood (coastal, fluvial, pluvial, ground water)
☑ Wildfires
☑ Other acute physical risk, please specify: Extreme weather events
☑ Heat waves
☑ Cyclones, hurricanes, typhoons
☑ Heavy precipitation (rain, hail, snow/ice)

Chronic physical
☑ Heat stress
☑ Changing temperature (air, freshwater, marine water)
☑ Water stress
☑ Changing precipitation patterns and types (rain, hail, snow/ice)
☑ Sea level rise
☑ Other chronic physical driver, please specify: Groundwater depletion
☑ Coastal erosion
☑ Increased severity of extreme weather events

Policy
☑ Carbon pricing mechanisms
☑ Other policy, please specify: Increased pricing of water

Market
☑ Availability and/or increased cost of raw materials
☑ Changing customer behavior
☑ Uncertainty in the market signals

Reputation
☑ Increased partner and stakeholder concern and partner and stakeholder negative feedback
☑ Stigmatization of sector
☑ Other reputation, please specify**:** Shifts in consumer preferences

Technology
☑ Transition to lower emissions technology and products
☑ Unsuccessful investment in new technologies

Liability
☑ Exposure to litigation

(2.2.2.14) Partners and stakeholders considered

Select all that apply
☑ Customers
☑ Employees
☑ Investors
☑ Suppliers
☑ Other, please specify**:** Energy utilities, Water utilities at a local level

(2.2.2.15) Has this process changed since the previous reporting year?

Select from:
☑ No

(2.2.2.16) Further details of process

Our Enterprise Risk Management (ERM) team works with subject matter experts across the enterprise to identify, assess, and report risks related to the company's operations, financial performance, and reputation. As with financial, operational, and strategic risks, the team assesses environmental risks as part of the company's overall risk management framework. The risks and opportunities identified through this process support public disclosures and inform Google's environmental sustainability strategy. Our CSO and sustainability teams work to address risks by identifying opportunities to reduce the company's environmental impact from its operations and value chain, and by improving climate resilience. The results of the annual risk assessment are shared with key executives from the Sustainability Focus Area (an internal management team led by our SVP of Learning and Sustainability that provides centralized management oversight of sustainability and climate-related issues). Results are also reported to the CFO, and to the Audit and Compliance Committee of Alphabet's Board of Directors on an as needed basis. We've increased our efforts to align our climate risk assessment process more closely with the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD), leveraging the TCFD categories of risks and opportunities and conducting climate scenario analyses. In an effort to drive completeness and consistency when reviewing these categories, we adopted our ERM rating scales (i.e., impact, frequency, likelihood, control effectiveness) to identify and prioritize areas of focus. Beginning in 2022, an updated climate-related risks and opportunities analysis was conducted across three time horizons—short term (through 2030), medium term (through 2040), and long term (through 2050)—for financial, operational, legal, and strategic risks. Climate risks were modeled under two scenarios aligned with the IPCC: SSP 1-2.6 and SSP 5-8.5. The assessment considered potential risks across our data centers (both Google-owned and third-party operated), offices, supply chain, as well as certain renewable energy procurement projects. We considered acute and chronic physical risks (e.g., heat stress, water stress, and extreme weather events), as well as risks associated with transitioning to a low-carbon economy (e.g., energy costs, future regulations, and technology). We also assessed climate-related opportunities (e.g., developing low-carbon products and services, improving energy efficiency, and advancing energy technologies). For more details, see Question 2.2.7.
[Add row]

(2.2.7) Are the interconnections between environmental dependencies, impacts, risks and/or opportunities assessed?

(2.2.7.1) Interconnections between environmental dependencies, impacts, risks and/or opportunities assessed

Select from:
☑ Yes

(2.2.7.2) Description of how interconnections are assessed

As we assess environmental risks, we work to identify opportunities to reduce our impact and improve resilience. One example of this is in how we assess water. Water is a key natural resource for our operations. It plays an important role in our data centers—cooling our servers, regulating indoor temperatures, and keeping our products up and running. To ensure we're managing water responsibly, we assess our water use and related potential risks and impacts, as well as opportunities to enhance water stewardship. To assess water stress—one of the physical climate risks considered for our climate risk

assessment—we considered aspects of our data center water risk framework. Our data center water risk framework enables us to evaluate if a watershed's risk level is high enough that we should consider alternative solutions like reclaimed water or air-cooling technology, which uses minimal water but consumes more energy—presenting a tradeoff between water and energy consumption. We designed this framework to take a comprehensive look at the water-related risks for each potential data center location. The results provide context for locally relevant watershed challenges and how our own investments in improved or expanded infrastructure or replenishment projects can help support local watershed health. For more details, see https://cloud.google.com/blog/topics/sustainability/assessing-watershed-health-in-data-center-host-communities.
[Fixed row]

(2.4) How does your organization define substantive effects on your organization?

Risks

(2.4.1) Type of definition

Select all that apply
☑ Qualitative
☑ Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:
☑ Other, please specify**:** Indicators may vary

(2.4.3) Change to indicator

Select from:
☑ Absolute increase

(2.4.5) Absolute increase/ decrease figure

1000000000

(2.4.6) Metrics considered in definition

Select all that apply
☑ Time horizon over which the effect occurs
☑ Likelihood of effect occurring

(2.4.7) Application of definition

We define "substantive effect" for the purpose of CDP reporting as climate-related risks and/or opportunities that have a strong possibility of occurring and would be important to our business, reputation, financial condition, and/or operating results. Examples of factors that could have a "substantive effect" include macroeconomic, political, and event-related risks/opportunities, as well as business-specific risks and opportunities related to strategy and competition, all of which can be influenced by climate change. In determining whether a climate-related risk and/or opportunity is substantive for the purpose of CDP reporting, one quantitative metric we may consider is a potential financial effect of more than $1 billion in a single year. Assessing the potential financial effect of any risk or opportunity involves various qualitative considerations and is subject to considerable uncertainty regarding future scenarios and related projections. *This and other potential financial effects discussed throughout this CDP response may be adjusted as needed. These should not be construed as a characterization regarding the materiality of such information to our financial results or our operations, and should not be read as necessarily rising to the level of materiality used for the purposes of complying with applicable securities laws and regulations.*

Opportunities

(2.4.1) Type of definition

Select all that apply
☑ Qualitative
☑ Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:
☑ Other, please specify**:** Indicators may vary

(2.4.3) Change to indicator

Select from:
☑ Absolute increase

(2.4.5) Absolute increase/ decrease figure

1000000000

(2.4.6) Metrics considered in definition

Select all that apply
☑ Time horizon over which the effect occurs
☑ Likelihood of effect occurring

(2.4.7) Application of definition

We define "substantive effect" for the purpose of CDP reporting as climate-related risks and/or opportunities that have a strong possibility of occurring and would be important to our business, reputation, financial condition, and/or operating results. Examples of factors that could have a "substantive effect" include macroeconomic, political, and event-related risks/opportunities, as well as business-specific risks and opportunities related to strategy and competition, all of which can be influenced by climate change. In determining whether a climate-related risk and/or opportunity is substantive for the purpose of CDP reporting, one quantitative metric we may consider is a potential financial effect of more than $1 billion in a single year. Assessing the potential financial effect of any risk or opportunity involves various qualitative considerations and is subject to considerable uncertainty regarding future scenarios and related projections. *This and other potential financial effects discussed throughout this CDP response may be adjusted as needed. These should not be construed as a characterization regarding the materiality of such information to our financial results or our operations, and should not be read as necessarily rising to the level of materiality used for the purposes of complying with applicable securities laws and regulations.*
[Add row]

C3. Disclosure of risks and opportunities

(3.1) Have you identified any environmental risks which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?

Climate change

(3.1.1) Environmental risks identified

Select from:
☑ Yes, only within our direct operations

(3.1.2) Primary reason why your organization does not consider itself to have environmental risks in your direct operations and/or upstream/downstream value chain

Select from:
☑ Environmental risks exist, but none with the potential to have a substantive effect on our organization

(3.1.3) Please explain

As part of our climate risk assessment, we identified risks to our direct operations with the potential to have a substantive effect. While climate risks were also identified for our value chain, they did not exceed the threshold for potential substantive effect. [Fixed row]

(3.1.1) Provide details of the environmental risks identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future.

Climate change

(3.1.1.1) Risk identifier

Select from:
☑ Risk1

(3.1.1.3) Risk types and primary environmental risk driver

Technology
☑ Transition to lower emissions technology and products

(3.1.1.4) Value chain stage where the risk occurs

Select from:
☑ Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply
☑ Chile
☑ Japan
☑ Belgium
☑ Denmark
☑ Finland
☑ Ireland
☑ Singapore
☑ Netherlands
☑ Taiwan, China
☑ United States of America

(3.1.1.9) Organization-specific description of risk

We use energy to operate our data centers and offices around the world. As we transition to a net-zero future, there is the potential for increased GHG emissions pricing, including implementation of a carbon tax. We have a goal to run on 24/7 CFE on every grid where we operate by 2030. While successfully achieving 24/7 CFE would help mitigate this risk, there may be risks and costs related to the transition to lower emissions technology and achieving our goal. These risks are inclusive of CFE challenges, such as: project terminations, interconnection delays, higher development costs, supply chain issues, regulatory tariffs, natural variability in generation, and certain regions with CFE market constraints. We performed scenario analysis to assess climate-related risks. Scenarios are not predictions or forecasts, but a way for us to examine a range of potential outcomes. Determining the anticipated financial effect of the risk described above is difficult given climate risks have long time horizons with high uncertainty regarding how policy and socio-economic factors might emerge and develop. Our scenario analysis centered around the potential future incremental costs associated with achieving our 24/7 CFE goal and is not inclusive

of all potential related costs. This risk description represents a point-in-time assessment of fiscal year 2023 and is a discussion of certain environmental risk drivers. It is subject to change and not intended to be a complete risk disclosure.

(3.1.1.11) Primary financial effect of the risk

Select from:
☑ Increased direct costs

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply
☑ Short-term
☑ Medium-term
☑ Long-term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:
☑ Likely

(3.1.1.14) Magnitude

Select from:
☑ Unknown

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

This risk could have effects across multiple time horizons. As we work toward our 24/7 CFE goal, this risk has the potential to increase costs due to various factors, such as additional procurement of carbon-free energy to keep up with growing data center electricity demand, changes to clean energy technology costs, etc.

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:
☑ No

(3.1.1.26) Primary response to risk

Infrastructure, technology and spending
☑ Other infrastructure, technology and spending, please specify**:** Examples of activities related to achieving 24/7 CFE include purchasing carbon-free energy, accelerating new and improved technologies (e.g., demand response at our data centers), and transforming the energy system through partnerships and advocacy.

(3.1.1.27) Cost of response to risk

16000000

(3.1.1.28) Explanation of cost calculation

There are various costs related to our response to this risk. One of the costs is the time related to FTEs managing key sustainability initiatives, which can include efforts related to clean energy, including CFE procurement, partnerships, and policy advocacy. As a rough estimate, this may be approximately $16 million per year. This was calculated by multiplying the median employee total compensation for the year ended December 31, 2023 by a hypothetical estimated number of full-time employee equivalents that would manage sustainability initiatives. This hypothetical cost figure may vary over time and may not be

representative of the workload resources currently dedicated to these initiatives. This figure is not representative of all potential costs of response to this risk.

(3.1.1.29) Description of response

We're working to achieve 24/7 CFE through three main initiatives: purchasing carbon-free energy, accelerating new and improved technologies, and transforming the energy system through policy, partnerships, and advocacy. In 2023, we signed contracts to purchase approximately 4 GW of clean energy generation capacity—more than in any prior year—including contracts in Texas and Arizona in the U.S., in Europe (Poland, Ireland, Belgium, and the Netherlands), and in Australia. Additionally, we're using Google's engineering expertise and purchasing power to accelerate the commercialization of a wide range of CFE technologies. Some of the highlights of our work from 2023 include: Driving the development of advanced methods for tracking and validating clean energy, including time-based energy attribute certificates (T-EACs); and partnering with a clean-energy startup to develop a geothermal power project in Nevada that is now contributing carbon-free energy to the electric grid. In 2023, we piloted a new demand response capability. By shifting some non-urgent compute tasks to other times and locations, we work with local utilities to reduce our data centers' power consumption during high-stress periods to help grids operate more reliably and meet the needs of local communities. We also published a paper that highlights the importance of quickly commercializing advanced clean electricity technologies and outlines how corporate clean energy buyers can drive this progress by supporting favorable policies, signing long-term purchase agreements, and providing early-stage project funding.

Climate change

(3.1.1.1) Risk identifier

Select from:
☑ Risk2

(3.1.1.3) Risk types and primary environmental risk driver

Chronic physical
☑ Sea level rise

(3.1.1.4) Value chain stage where the risk occurs

Select from:
☑ Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply
☑ China
☑ Japan
☑ Brazil
☑ Sweden
☑ Ireland
☑ Indonesia
☑ Singapore
☑ United Kingdom of Great Britain and Northern Ireland
☑ Netherlands
☑ Taiwan, China
☑ Hong Kong SAR, China
☑ Nigeria
☑ Portugal
☑ Thailand
☑ Argentina
☑ Australia
☑ United States of America

(3.1.1.9) Organization-specific description of risk

In 2023, Google had offices and data centers on six continents, in over 200 cities, across nearly 60 countries. As part of our climate risk assessment, we considered the impact of sea level rise (SLR) across our global assets. Some of our operations are located near areas that could be impacted by sea level rise, high tides, and storm surge events. For example, the adjacency of our Bay View office in Mountain View, California to the San Francisco Bay makes water an important focus. This risk description

represents a point-in-time assessment of fiscal year 2023 and is a discussion of certain environmental risk drivers. It is subject to change and not intended to be a complete risk disclosure.

(3.1.1.11) Primary financial effect of the risk

Select from:
☑ Increased indirect [operating] costs

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply
☑ Short-term
☑ Medium-term
☑ Long-term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:
☑ Likely

(3.1.1.14) Magnitude

Select from:
☑ High

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

This risk could have effects across multiple time horizons. This risk has the potential to increase operating expenditures associated with damages to property and equipment at certain data centers and offices exposed to sea-level rise and associated events, such as storm surges.

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:
☑ No

(3.1.1.26) Primary response to risk

Infrastructure, technology and spending
☑ Other infrastructure, technology and spending, please specify**:** As an example, we're working to enhance water infrastructure innovation in our offices and design for resilience.

(3.1.1.27) Cost of response to risk

16000000

(3.1.1.28) Explanation of cost calculation

There are various costs related to our response to this risk. One of the costs is the time related to FTEs managing key sustainability initiatives, which can include efforts related to real estate sustainability and resilience. As a rough estimate, this may be estimated to be approximately $16 million per year. This was calculated by multiplying the median employee total compensation for the year ended December 31, 2023 by a hypothetical estimated number of full-time employee equivalents that would manage sustainability initiatives. This hypothetical cost figure may vary over time and may not be representative of the workload resources currently dedicated to these initiatives. This figure is not representative of all costs of response to this risk.

(3.1.1.29) Description of response

Of the locations assessed, sea level rise (SLR), considered alongside storm surge events and high tides, was determined to have the highest potential to impact our offices in the San Francisco Bay Area and in Dublin, Ireland. Although SLR is gradual, acute events, such as storm surges, can be impactful. One aspect of our response to this risk is to improve the resiliency of our buildings. As an example of how we've worked to mitigate against this risk, we designed for 100-year flood scenarios at our prominent Bay View campus in Mountain View, California, to lessen the impact of potential water incursion and prevent potential losses of equipment. This includes site design elements such as landscape mounds, driveway slopes, deployable barriers, and sealed foundations. We're also working on efforts to support longer term regional solutions, including restoration of the baylands, building a nature-based shoreline levy, and increasing flood protection and ecological resilience along channels and creeks that connect to the Bay. As an example, the water retention ponds at Bay View not only collect water for reuse, but also provide nature restoration and sea level rise protection. Additional mitigation options are being evaluated and implemented.
[Add row]

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

Select from:
☑ Yes

(3.5.1) Select the carbon pricing regulation(s) which impact your operations.

Select all that apply
☑ EU ETS

(3.5.2) Provide details of each Emissions Trading Scheme (ETS) your organization is regulated by.

EU ETS

(3.5.2.1) % of Scope 1 emissions covered by the ETS

0.47

(3.5.2.2) % of Scope 2 emissions covered by the ETS

0

(3.5.2.3) Period start date

01/01/2023

(3.5.2.4) Period end date

12/31/2023

(3.5.2.5) Allowances allocated

374

(3.5.2.6) Allowances purchased

329

(3.5.2.7) Verified Scope 1 emissions in metric tons CO2e

374

(3.5.2.8) Verified Scope 2 emissions in metric tons CO2e

0

(3.5.2.9) Details of ownership

Select from:
☑ Facilities we own and operate

(3.5.2.10) Comment

Allowances allocated in 2023 were met with allowances on stock and allowances purchased in 2023.
[Fixed row]

(3.5.4) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

Strategy for compliance: Members of Google's data center Environmental Health and Safety, Energy, and Public Policy teams monitor current and emerging energy- and emissions-related regulations related to the EU ETS. The scope of the revised EU ETS legislations covered small emitters and, as a result, our EU data centers were required to apply for ETS Permits. In 2023, Google had owned- and operated- data centers in Belgium, Denmark, Finland, Ireland, and the Netherlands. Based on the regulation, the teams determined which data centers would participate in the EU ETS in 2023. The EU ETS directive requires operators of installations, which are included in the scope to hold a valid GHG emission monitoring plan issued by the relevant Competent Authority, to monitor and report their emissions, to have the reports verified by an independent and accredited verifier, and to purchase and surrender the equivalent number of allowances on an annual basis through approved operators holding accounts on the Union Registry. Our strategy is to continue to follow these directives of the EU ETS. Results: In 2023, after determining which data centers were applicable for participation, we purchased allowances to remain in compliance with the EU ETS. We were in compliance with the EU ETS in 2023. Timescale of implementation: In 2023, we followed the annual compliance cycle of the EU ETS. The team reviews current and emerging energy- and emissions-related regulations related to the EU ETS each year. For more information, see https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/monitoring-reporting-and-verification-eu-ets-emissions_en

(3.6) Have you identified any environmental opportunities which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?

	Environmental opportunities identified
Climate change	*Select from:* ☑ Yes, we have identified opportunities, and some/all are being realized

[Fixed row]

(3.6.1) Provide details of the environmental opportunities identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future.

Climate change

(3.6.1.1) Opportunity identifier

Select from:
☑ Opp1

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Products and services
☑ Other products and services opportunity, please specify**:** Development and/or expansion of low emission goods and services

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:
☑ Downstream value chain

(3.6.1.5) Country/area where the opportunity occurs

Select all that apply
☑ United States of America

(3.6.1.8) Organization specific description

While many of our products focus on reducing emissions within their respective sectors, others offer a more holistic approach. These solutions empower our customers and partners to make climate-conscious decisions that support both adaptation and mitigation across various industries. As one example of this opportunity, Google Cloud offers organizations solutions to drive impact for their business and sustainability. We help organizations harness AI for improved sustainability measurement to build resilience, AI-powered insights to use energy and resources more efficiently in operations and supply chains to reduce costs, and AI tools to unlock new growth opportunities and markets while accelerating sustainability impact. We offer solutions to customers around the world, and are seeing key opportunities to partner on sustainability solutions across North America, Europe, the Middle East, Latin America, and Asia Pacific.

(3.6.1.9) Primary financial effect of the opportunity

Select from:
☑ Increased revenues resulting from increased demand for products and services

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply
☑ Long-term

(3.6.1.11) Likelihood of the opportunity having an effect within the anticipated time horizon

Select from:
☑ Very likely (90–100%)

(3.6.1.12) Magnitude

Select from:
☑ High

(3.6.1.14) Anticipated effect of the opportunity on the financial position, financial performance and cash flows of the organization in the selected future time horizons

This opportunity has the potential to increase customer demand to leverage Google Cloud sustainability and AI solutions.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:
☑ Yes

(3.6.1.21) Anticipated financial effect figure in the long-term - minimum (currency)

33100000

(3.6.1.22) Anticipated financial effect figure in the long-term – maximum (currency)

165500000

(3.6.1.23) Explanation of financial effect figures

It is difficult to predict the magnitude and likelihood of this opportunity given considerable uncertainty regarding future scenarios and related projections. For one example of this opportunity, if sustainability solutions resulted in a hypothetical advantage for Google Cloud due to increased demand and yielded an unpredictable 0.1-0.5% increase in Google Cloud revenue, based on our FY2023 Google Cloud revenue of approximately $33.1 billion, this would equate to approximately $33.1 - $165.5 million. *These and other potential financial effects discussed throughout this CDP response may be adjusted as needed. These should not be construed as a characterization regarding the materiality of such information to our financial results or our operations, and should not be read as necessarily rising to the level of materiality used for the purposes of complying with applicable securities laws and regulations.*

(3.6.1.24) Cost to realize opportunity

16000000

(3.6.1.25) Explanation of cost calculation

One of the costs is the time related to FTEs managing key sustainability initiatives, which can include efforts related to cloud sustainability solutions. As a rough estimate, this may be estimated to be approximately $16 million per year. This was calculated by multiplying the median employee total compensation for the year ended December 31, 2023 by a hypothetical estimated number of full-time employee equivalents that would manage sustainability initiatives. This hypothetical cost figure may vary over time and may not be representative of the workload resources currently dedicated to these initiatives. This figure may not be representative of all costs of this opportunity.

(3.6.1.26) Strategy to realize opportunity

Google Cloud offers organizations solutions to drive impact for their business and sustainability. We help organizations work more efficiently by using AI to streamline energy and resource usage across their operations and supply chains. For example, Google Cloud, in partnership with NGIS (a geospatial solutions company), is helping brands gain a deeper understanding of sustainable sourcing practices across supplier networks. We also help developers reduce the carbon footprint of their cloud-based applications. We've created a suite of products in our Carbon Sense Suite so customers can accurately measure, report, and reduce their cloud carbon emissions (through Carbon Footprint) with recommendations for carbon reduction actions (through Region Picker and Active Assist). We've also put together the Go Green Software guide, which provides a comprehensive overview of how to build software that uses energy more efficiently. For more details about our Cloud sustainability offerings, see: https://cloud.google.com/sustainability
[Add row]

(3.6.2) Provide the amount and proportion of your financial metrics in the reporting year that are aligned with the substantive effects of environmental opportunities.

Climate change

(3.6.2.1) Financial metric

Select from:

☑ Other, please specify: Financial metrics vary.

(3.6.2.2) Amount of financial metric aligned with opportunities for this environmental issue (unit currency as selected in 1.2)

165500000

(3.6.2.3) % of total financial metric aligned with opportunities for this environmental issue

Select from:
☑ Less than 1%

(3.6.2.4) Explanation of financial figures

*The financial metrics are based on the illustrative "Anticipated financial effect figure in the long-term" figures from Question 3.6.1, representing a range of $33.1 - $165.5 million. It is difficult to predict the magnitude and likelihood of this opportunity given considerable uncertainty regarding future scenarios and related projections. *This and other potential financial effects discussed throughout this CDP response may be adjusted as needed. These should not be construed as a characterization regarding the materiality of such information to our financial results or our operations, and should not be read as necessarily rising to the level of materiality used for the purposes of complying with applicable securities laws and regulations.*
[Add row]

C4. Governance

(4.1) Does your organization have a board of directors or an equivalent governing body?

(4.1.1) Board of directors or equivalent governing body

Select from:
☑ Yes

(4.1.2) Frequency with which the board or equivalent meets

Select from:
☑ More frequently than quarterly

(4.1.3) Types of directors your board or equivalent is comprised of

Select all that apply
☑ Executive directors or equivalent
☑ Independent non-executive directors or equivalent

(4.1.4) Board diversity and inclusion policy

Select from:
☑ Yes, and it is publicly available

(4.1.5) Briefly describe what the policy covers

Given the global and complex nature of our business, our Board believes it is important to consider diversity of race, ethnicity, gender, age, education, skills, cultural background, and professional experiences in evaluating candidates. Accordingly, when evaluating candidates for nomination as new directors, the Nominating and Corporate Governance Committee will consider (and will ask any search firm that it engages to provide) a set of candidates that includes both underrepresented people of color and different genders. For more details, see the Board Membership Criteria in our Corporate Governance Guidelines (https://abc.xyz/investor/board-and-governance/corporate-governance-guidelines/).

[Fixed row]

(4.1.1) Is there board-level oversight of environmental issues within your organization?

	Board-level oversight of this environmental issue
Climate change	*Select from:* ☑ Yes

[Fixed row]

(4.1.2) Identify the positions (do not include any names) of the individuals or committees on the board with accountability for environmental issues and provide details of the board's oversight of environmental issues.

Climate change

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply
☑ Board-level committee

(4.1.2.2) Positions' accountability for this environmental issue is outlined in policies applicable to the board

Select from:
☑ Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply
☑ Other policy applicable to the board, please specify**:** Oversight of environmental sustainability primarily resides with our Audit and Compliance Committee. For more details, see the Audit and Compliance Committee Charter: https://abc.xyz/investor/board-and-governance/acc/

(4.1.2.4) Frequency with which this environmental issue is a scheduled agenda item

Select from:
☑ Scheduled agenda item in some board meetings – at least annually

(4.1.2.5) Governance mechanisms into which this environmental issue is integrated

Select all that apply
☑ Monitoring progress towards corporate targets
☑ Monitoring the implementation of a climate transition plan
☑ Approving and/or overseeing employee incentives

(4.1.2.7) Please explain

Oversight of environmental sustainability primarily resides with the Audit and Compliance Committee of Alphabet's Board of Directors, which reviews and discusses with management our risk exposures, including those related to environmental sustainability—which can include climate-related issues—and the steps that we take to detect, monitor and actively manage such exposures. The Compensation Committee is responsible for determining payout of the ESG Bonus for each ESG

Participant, in conjunction with the CEO's review of company-wide performance and individual contributions made by each ESG Participant. Our Chief Sustainability Officer (CSO) keeps the Audit and Compliance Committee of Alphabet's Board of Directors apprised of climate-related issues, and raises these issues on an as-needed basis. Climate-related issues may also be added to the agenda for meetings of Alphabet's full Board of Directors on an as-needed basis.
[Fixed row]

(4.2) Does your organization's board have competency on environmental issues?

Climate change

(4.2.1) Board-level competency on this environmental issue

Select from:
☑ Yes

(4.2.2) Mechanisms to maintain an environmentally competent board

Select all that apply
☑ Consulting regularly with an internal, permanent, subject-expert working group
[Fixed row]

(4.3) Is there management-level responsibility for environmental issues within your organization?

	Management-level responsibility for this environmental issue
Climate change	*Select from:* ☑ Yes

[Fixed row]

(4.3.1) Provide the highest senior management-level positions or committees with responsibility for environmental issues (do not include the names of individuals).

Climate change

(4.3.1.1) Position of individual or committee with responsibility

Executive level
☑ Chief Sustainability Officer (CSO)

(4.3.1.2) Environmental responsibilities of this position

Dependencies, impacts, risks and opportunities
☑ Assessing environmental dependencies, impacts, risks, and opportunities
☑ Managing environmental dependencies, impacts, risks, and opportunities

Policies, commitments, and targets
☑ Measuring progress towards environmental corporate targets

Strategy and financial planning
☑ Implementing a climate transition plan

(4.3.1.4) Reporting line

Select from:
☑ Other, please specify**:** Within the CEO reporting line, our CSO reports up to our SVP of Learning and Sustainability.

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:
☑ Annually

(4.3.1.6) Please explain

Our Sustainability Focus Area, an internal management team led by our SVP of Learning and Sustainability, provides centralized management oversight of sustainability and climate-related issues. The Sustainability Focus Area includes the Chief Sustainability Officer and executives from across the company with diverse skills, from teams such as operations, products, finance, marketing, legal, communications, and policy, among others. Through the Sustainability Focus Area, sustainability and climate ambitions are built into our company-wide goals, plans of action, management policies, performance objectives, and how we monitor progress. Climate-related issues are a topic for the majority of the Sustainability Focus Area's meetings. In 2023, our CSO and other leaders met annually and as needed with our CFO to discuss climate-related issues. Our CSO keeps the Audit and Compliance Committee of Alphabet's Board of Directors apprised of climate-related issues, and raises these issues on an as-needed basis. Our CSO reports up to our SVP of Learning and Sustainability and provides updates as needed. The CSO oversees the global sustainability team, which leads much of Google's work on assessing and managing climate-related risks and opportunities, including programs such as carbon and environmental accounting and reporting, climate-related disclosures, partnerships and engagement, water, circular economy, biodiversity, sustainability data infrastructure, and regional sustainability. Our CSO leads cross-functional strategy and collaboration with sustainability teams across the company—including teams such as climate operations, real estate sustainability, data center sustainability, and consumer hardware sustainability, among others—to ensure the company capitalizes on opportunities to strategically advance sustainability.
[Add row]

(4.5) Do you provide monetary incentives for the management of environmental issues, including the attainment of targets?

Climate change

(4.5.1) Provision of monetary incentives related to this environmental issue

Select from:
☑ Yes

(4.5.2) % of total C-suite and board-level monetary incentives linked to the management of this environmental issue

4.4

(4.5.3) Please explain

In 2022, the Compensation Committee approved an annual environmental, social, and governance bonus for members of Alphabet's senior executive team. The discretionary bonus has provided individual participants with a maximum $2.0 million annual cash bonus opportunity, based on contributions to the company's performance against our environmental and social goals. The bonus has included an environmental and a social component, each with a maximum potential payout of $1.0 million. The Compensation Committee is responsible for determining the criteria each year and the payout of this bonus for each participant, taking into consideration the CEO's review of company-wide performance and individual contributions made by each participant.
[Fixed row]

(4.5.1) Provide further details on the monetary incentives provided for the management of environmental issues (do not include the names of individuals).

Climate change

(4.5.1.1) Position entitled to monetary incentive

Board or executive level

☑ Other C-Suite Officer, please specify**:** Chief Financial Officer, Alphabet and Google; Senior Vice President, Knowledge and Information, Google; Senior Vice President, Chief Business Officer, Google; and President and Chief Legal Officer, Alphabet and Google

(4.5.1.2) Incentives

Select all that apply

☑ Bonus – set figure

(4.5.1.3) Performance metrics

Targets

☑ Progress towards environmental targets

(4.5.1.4) Incentive plan the incentives are linked to

Select from:

☑ Short-Term Incentive Plan, or equivalent, only (e.g. contractual annual bonus)

(4.5.1.5) Further details of incentives

In 2022, the Compensation Committee approved an annual environmental, social, and governance bonus for members of Alphabet's senior executive team, including the Chief Financial Officer of Alphabet and Google; the Senior Vice President of Knowledge and Information at Google; the Senior Vice President and Chief Business Officer at Google; and the Chief Legal Officer of Alphabet and Google. The discretionary bonus has provided individual participants with a maximum $2.0 million annual cash bonus opportunity, based on contributions to the company's performance against our environmental and social goals. The bonus has included an environmental and a social component, each with a maximum potential payout of $1.0 million. The Compensation Committee is responsible for determining the criteria each year and the payout of this bonus for each participant, taking into consideration the CEO's review of company-wide performance and individual contributions made by each participant. For more detailed information and metrics on how we are making progress across a wide range of goals, please see our reports from 2023 at https://about.google/commitments/reports/, including our environmental, diversity, supply chain, and economic impact reports. The Compensation Committee decided to align the amounts of the 2023 bonus payouts for all four individuals in recognition of the central and complementary role that each participant has played, both as individuals and as a group, in advancing our initiatives in these areas. The cash value of each individual's 2023 bonus is $1.5 million.

(4.5.1.6) How the position's incentives contribute to the achievement of your environmental commitments and/or climate transition plan

For 2023 performance, the Compensation Committee considered our progress and key accomplishments against environmental and social goals. For the environmental component, the Compensation Committee considered our technical leadership in addressing environmental topics and operating sustainably, as well as our programs to provide additional information and insights for both consumers and enterprise customers. Operating sustainably includes advancing carbon-free energy, which is a KPI in our transition toward net-zero emissions.

[Add row]

(4.6) Does your organization have an environmental policy that addresses environmental issues?

	Does your organization have any environmental policies?
	Select from: ☑ Yes

[Fixed row]

(4.6.1) Provide details of your environmental policies.

Row 1

(4.6.1.1) Environmental issues covered

Select all that apply

☑ Climate change

(4.6.1.2) Level of coverage

Select from:

☑ Organization-wide

(4.6.1.3) Value chain stages covered

Select all that apply

☑ Direct operations

☑ Upstream value chain

☑ Downstream value chain

(4.6.1.4) Explain the coverage

Google's 2024 Environmental Report provides an overview of our environmental sustainability strategy, our targets, and our annual progress toward them. The report includes details about our approach across our products and our operations, as well as details about our stakeholder engagement and partnerships, among other topics. While our Environmental Report includes details across net-zero carbon, water stewardship, circular economy, nature and biodiversity, and other topics, this response focuses on examples of some of our key climate-related goals and initiatives, including: – We have a goal to reach net-zero emissions across all of our operations and value chain by 2030, and we aim to run on 24/7 carbon-free energy on every grid where we operate by 2030. – In 2023, we achieved seven consecutive years of 100% renewable energy matching on a global and annual basis. – We engage in sustainability, energy, and climate policy, and partner with many organizations to accelerate progress toward shared sustainability goals.

(4.6.1.5) Environmental policy content

Environmental commitments

☑ Commitment to stakeholder engagement and capacity building on environmental issues

Climate-specific commitments

☑ Commitment to 100% renewable energy

☑ Commitment to net-zero emissions

(4.6.1.6) Indicate whether your environmental policy is in line with global environmental treaties or policy goals

Select all that apply

☑ Yes, in line with the Paris Agreement

(4.6.1.7) Public availability

Select from:
☑ Publicly available

(4.6.1.8) Attach the policy

google-2024-environmental-report.pdf
[Add row]

(4.10) Are you a signatory or member of any environmental collaborative frameworks or initiatives?

(4.10.1) Are you a signatory or member of any environmental collaborative frameworks or initiatives?

Select from:
☑ Yes

(4.10.2) Collaborative framework or initiative

Select all that apply
☑ Exponential Roadmap Initiative
☑ Race to Zero Campaign
☑ Task Force on Climate-related Financial Disclosures (TCFD)
☑ World Business Council for Sustainable Development (WBCSD)

(4.10.3) Describe your organization's role within each framework or initiative

Google partners with many organizations to accelerate progress toward shared sustainability goals. For more details about our climate- and sustainability-related partnerships and memberships, see Google's Environmental Report (https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf). As a few examples: - In 2021, we joined the Exponential Roadmap Initiative and the UN Race to Zero Campaign, the largest ever alliance committed to halving emissions before 2030 towards net zero emissions by no later than 2050. - Google has been a member of the WBCSD for several years and participates in initiatives related to improving well-being for people and the planet, including shifting diets, consumer behavior change, and regenerative agriculture. - We've formally expressed support for the TCFD reporting framework and its seven principles for climate disclosure.
[Fixed row]

(4.11) In the reporting year, did your organization engage in activities that could directly or indirectly influence policy, law, or regulation that may (positively or negatively) impact the environment?

(4.11.1) External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the environment

Select all that apply
☑ Yes, we engaged directly with policy makers
☑ Yes, we engaged indirectly through, and/or provided financial or in-kind support to a trade association or other intermediary organization or individual whose activities could influence policy, law, or regulation

(4.11.2) Indicate whether your organization has a public commitment or position statement to conduct your engagement activities in line with global environmental treaties or policy goals

Select from:
☑ Yes, we have a public commitment or position statement in line with global environmental treaties or policy goals

(4.11.3) Global environmental treaties or policy goals in line with public commitment or position statement

Select all that apply
☑ Paris Agreement

(4.11.4) Attach commitment or position statement

google-2023-environmental-report.pdf

(4.11.5) Indicate whether your organization is registered on a transparency register

Select from:
☑ Yes

(4.11.6) Types of transparency register your organization is registered on

Select all that apply
☑ Mandatory government register
☑ Voluntary government register
☑ Non-government register

(4.11.7) Disclose the transparency registers on which your organization is registered & the relevant ID numbers for your organization

EU Transparency register - REG number: 03181945560-59 German Lobby Register - R001794 InfluenceMap

(4.11.8) Describe the process your organization has in place to ensure that your external engagement activities are consistent with your environmental commitments and/or transition plan

Our U.S. Public Policy Transparency website provides robust and regularly updated disclosures on our public policy and lobbying activities, trade association participation, and other key elements of our approach to policy engagement. Our Board and senior management team regularly oversees our corporate political activity to ensure appropriate policies and practices are in place and that it serves the interests of the company and our stockholders. The Nominating and Corporate Governance Committee reviews Google's corporate political policies and activities, including expenditures made with corporate funds, our NetPAC contributions, direct corporate contributions to state and local political campaigns, and our policy prohibiting trade associations and other organizations from using Google funds for political activities. The Governance Committee similarly annually reviews the lobbying activities of our Government Affairs and Public Policy team. Our participation in various trade associations provides us the platform to conduct robust and productive engagement on climate policy. We advocate for strong climate policy outcomes as members of numerous trade associations and third party groups. These organizations publicly disclose our participation in their membership information materials. We assess the alignment of our trade association participation with the goals of the Paris Agreement, and engage within organizations to support advocacy for climate policies needed to limit warming to 1.5 Celsius and create a prosperous and competitive low-carbon economy. We're in dialogue with our trade associations to encourage alignment between our core public policy objectives and their policy advocacy activities, including on climate change. All activities related to engagement on climate policy are coordinated and managed by designated members of our operations team who handle policy, our public policy team, and members of our communications team. These employees coordinate the drafting and review of all public-facing content related to our overall energy, sustainability and climate change strategy. Material is tracked centrally for reference and use by other employees and to further ensure consistency. These employees ultimately report to our Chief Legal Officer, who oversees our policy and communications organizations.

Sustainability teams throughout the organization use this team for review to ensure consistency with our overall climate change strategy.
[Fixed row]

(4.11.1) On what policies, laws, or regulations that may (positively or negatively) impact the environment has your organization been engaging directly with policy makers in the reporting year?

Row 1

(4.11.1.1) Specify the policy, law, or regulation on which your organization is engaging with policy makers

U.S. Federal Energy Regulatory Commission Generator Interconnection Rule: "Improvements to Generator Interconnection Procedures and Agreements (Interconnection) Notice of Proposed Rulemaking". This rule is focused on modernizing the U.S. transmission grid by streamlining the generator interconnection process. For more details, see the 2024 Google Environmental Report: https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf

(4.11.1.2) Environmental issues the policy, law, or regulation relates to

Select all that apply
☑ Climate change

(4.11.1.3) Focus area of policy, law, or regulation that may impact the environment

Energy and renewables
☑ Electricity grid access for renewables

(4.11.1.4) Geographic coverage of policy, law, or regulation

Select from:
☑ National

(4.11.1.5) Country/area/region the policy, law, or regulation applies to

Select all that apply
☑ United States of America

(4.11.1.6) Your organization's position on the policy, law, or regulation

Select from:
☑ Support with minor exceptions

(4.11.1.7) Details of any exceptions and your organization's proposed alternative approach to the policy, law, or regulation

In 2022, Google filed comments (initial and reply) on FERC's "Improvements to Generator Interconnection Procedures and Agreements (Interconnection) Notice of Proposed Rulemaking." For more details, see: https://elibrary.ferc.gov/eLibrary/filedownload?fileid49F7FF77-4479-C0BC-9D81-83D2EDC00000 and https://elibrary.ferc.gov/eLibrary/filedownload?fileidC26461B7-C55E-CB4D-9F0E-8512B4400000.

(4.11.1.8) Type of direct engagement with policy makers on this policy, law, or regulation

Select all that apply

☑ Submitting written proposals/inquiries

(4.11.1.9) Funding figure your organization provided to policy makers in the reporting year relevant to this policy, law, or regulation (currency)

0

(4.11.1.10) Explain the relevance of this policy, law, or regulation to the achievement of your environmental commitments and/or transition plan, how this has informed your engagement, and how you measure the success of your engagement

As a large purchaser of energy to meet ever-increasing demand across our company, access to reliable, affordable, and clean energy is essential. Across the U.S., however, backlogged interconnection queues and outdated transmission planning processes threaten the ability of the grid to meet our growing load demand. We filed two rounds of comments on this rule. The FERC's final rule, issued in June 2023, acknowledged Google's input, including it as a basis for their actions on issues around transparency and study delays. For more details, see: https://www.ferc.gov/media/e-1-order-2023-rm22-14-000

(4.11.1.11) Indicate if you have evaluated whether your organization's engagement on this policy, law, or regulation is aligned with global environmental treaties or policy goals

Select from:
☑ Yes, we have evaluated, and it is aligned

(4.11.1.12) Global environmental treaties or policy goals aligned with your organization's engagement on this policy, law or regulation

Select all that apply
☑ Paris Agreement
[Add row]

(4.11.2) Provide details of your indirect engagement on policy, law, or regulation that may (positively or negatively) impact the environment through trade associations or other intermediary organizations or individuals in the reporting year.

Row 1

(4.11.2.1) Type of indirect engagement

Select from:
☑ Indirect engagement via a trade association

(4.11.2.4) Trade association

Europe
☑ Other trade association in Europe, please specify**:** RE-Source Platform

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply
☑ Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:
☑ Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:
☑ Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

Google is part of many trade associations and has chosen to highlight a select few that are specifically focused on climate and energy issues. For more details about our engagement with climate- and sustainability-related trade associations and groups, see Google's Environmental Report (https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf). The RE-Source Platform is Europe's leading forum for corporate renewable energy sourcing. Through its wide-ranging and innovative Renewable Energy Buyers Toolkit and popular annual event for energy buyers and sellers, RE-Source seeks to remove barriers for corporates to renewable energy procurement in support of Europe's climate and energy goals. For more information, see http://resource-platform.eu/ Google was actively involved in the creation of the RE-Source Platform and is one of its founding Strategic Partners and a member of the Steering Committee. In 2023, Google also sponsored the annual RE-Source conference in Amsterdam, which brings together government officials and business leaders dedicated to accelerating corporate purchasing of renewable energy in Europe. Funding figures are confidential. In 2023, Google worked through RE-Source to advocate for the inclusion of time-stamping for Guarantees of Origin in the EU Renewable Energy Directive—enabling hourly CFE matching and greater transparency of clean energy claims. For more details, see: https://resource-platform.eu/wp-content/uploads/RE-Source-Response-on-the-Revision-of-RED-II.pdf.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:
☑ Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply
☑ Paris Agreement

Row 2

(4.11.2.1) Type of indirect engagement

Select from:
☑ Indirect engagement via a trade association

(4.11.2.4) Trade association

North America
☑ Other trade association in North America, please specify**:** Clean Energy Buyers Association (CEBA)

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply
☑ Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:
☑ Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:
☑ Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

Google is part of many trade associations and has chosen to highlight a select few that are specifically focused on climate and energy issues. For more details about our engagement with climate- and sustainability-related trade associations and groups, see Google's Environmental Report (https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf). The Clean Energy Buyers Association (CEBA) is a membership association for energy customers seeking to procure clean energy across the U.S. Their membership of over 420 includes stakeholders from across the commercial and industrial sector, non-profit organizations, as well as energy providers and service providers. For more information, see https://cebuyers.org/ Google was actively involved in the creation of this national trade organization in 2018, serving as the chair of the Interim Board of Directors during the transition from an NGO-led effort into a corporate-led trade organization. Google also provided financial support for the development of the organization. Funding figures are confidential. Since 2020, a Google representative has served as the Board Chair of this organization.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:
☑ Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply
☑ Paris Agreement

Row 3

(4.11.2.1) Type of indirect engagement

Select from:
☑ Indirect engagement via a trade association

(4.11.2.4) Trade association

Asia and Pacific
☑ Other trade association in Asia and Pacific, please specify**:** Asia Clean Energy Coalition

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply
☑ Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:
☑ Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:
☑ Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

Google is part of many trade associations and has chosen to highlight a select few that are specifically focused on climate and energy issues. For more details about our engagement with climate- and sustainability-related trade associations and groups, see Google's Environmental Report (https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf). The Asia Clean Energy Coalition (ACEC) was established in 2022 to convene a coalition of world-leading renewable energy buyers in Asia, in collaboration with sellers and financiers, to strategically shift policy in key Asian national and regional markets. For governments across Asia seeking capital investment, energy security, and sustainable economic growth, ACEC provides strategic advice based on real demands, and guidance informed by regional and international best practice. For non-government actors seeking to promote renewable electricity in Asia, ACEC is an expert hub for strategic communications and policy coordination, helping to maximize impact. For more information, see https://asiacleanenergycoalition.com/en/ Google is a founding member of ACEC, which we helped launch at COP27, and a member of the Steering Group. We also take part in several working groups focused on improving the policy and regulatory environments for corporate clean energy procurement and supporting decarbonization of power grids across the Asia-Pacific region. In 2023, beyond membership fees, we provided funding to support the development of ACEC's paper on Accelerating Power Grid Interconnectivity in Southeast Asia. Funding figures are confidential. We maintain regular engagement with top leadership of the key trade associations in which we are members.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:
☑ Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply
☑ Paris Agreement
[Add row]

(4.12) Have you published information about your organization's response to environmental issues for this reporting year in places other than your CDP response?

Select from:
☑ Yes

(4.12.1) Provide details on the information published about your organization's response to environmental issues for this reporting year in places other than your CDP response. Please attach the publication.

Row 1

(4.12.1.1) Publication

Select from:
☑ In voluntary sustainability reports

(4.12.1.3) Environmental issues covered in publication

Select all that apply
☑ Climate change
☑ Water
☑ Biodiversity

(4.12.1.4) Status of the publication

Select from:
☑ Complete

(4.12.1.5) Content elements

Select all that apply
☑ Strategy
☑ Other, please specify: Water accounting figures
☑ Governance
☑ Emission targets
☑ Emissions figures
☑ Risks & Opportunities

(4.12.1.6) Page/section reference

Pages 1 to 84

(4.12.1.7) Attach the relevant publication

google-2024-environmental-report.pdf

(4.12.1.8) Comment

See Google's 2024 Environmental Report

Row 2

(4.12.1.1) Publication

Select from:
☑ In mainstream reports

(4.12.1.3) Environmental issues covered in publication

Select all that apply
☑ Climate change
☑ Water

(4.12.1.4) Status of the publication

Select from:
☑ Complete

(4.12.1.5) Content elements

Select all that apply
☑ Risks & Opportunities
☑ Strategy

(4.12.1.6) Page/section reference

Ongoing Commitment to Sustainability (Page 9), Other Bets (Page 8), Risk Factors (Page 14 and 21)

(4.12.1.7) Attach the relevant publication

goog-10-k-2023.pdf

(4.12.1.8) Comment

See Page 9 of Alphabet's FY2023 10-K

Row 3

(4.12.1.1) Publication

Select from:
☑ In mainstream reports

(4.12.1.3) Environmental issues covered in publication

Select all that apply
☑ Climate change

(4.12.1.4) Status of the publication

Select from:
☑ Complete

(4.12.1.5) Content elements

Select all that apply
☑ Risks & Opportunities
☑ Strategy

(4.12.1.6) Page/section reference

Letter from the Chair of the Board of Directors (Page 3), Transparency and Oversight Highlights (Pages 10-12), and company response to a climate change-related stockholder proposal (Page 81)

(4.12.1.7) Attach the relevant publication

goog024-alphabet-2024-proxy-statement-web.pdf

(4.12.1.8) Comment

See Alphabet's 2024 Proxy Statement

Row 4

(4.12.1.1) Publication

Select from:
☑ In other regulatory filings

(4.12.1.3) Environmental issues covered in publication

Select all that apply
☑ Climate change
☑ Water
☑ Biodiversity

(4.12.1.4) Status of the publication

Select from:
☑ Complete

(4.12.1.5) Content elements

Select all that apply
☑ Governance
☑ Risks & Opportunities
☑ Strategy

(4.12.1.6) Page/section reference

Pages 2 to 5

(4.12.1.7) Attach the relevant publication

google-2024-eu-nfrd-report.pdf

(4.12.1.8) Comment

See Google's 2024 European Union Non-Financial Reporting Directive (NFRD) Report

Row 5

(4.12.1.1) Publication

Select from:
☑ In mainstream reports, in line with environmental disclosure standards or frameworks

(4.12.1.2) Standard or framework the report is in line with

Select all that apply
☑ TCFD

(4.12.1.3) Environmental issues covered in publication

Select all that apply
☑ Climate change

(4.12.1.4) Status of the publication

Select from:
☑ Complete

(4.12.1.5) Content elements

Select all that apply
☑ Governance
☑ Risks & Opportunities
☑ Strategy

(4.12.1.6) Page/section reference

TCFD Index (Pages 5-6)

(4.12.1.7) Attach the relevant publication

alphabet-2024-sasb-and-tcfd-index.pdf

(4.12.1.8) Comment

See Alphabet's SASB and TCFD Index
[Add row]

C5. Business strategy

(5.1) Does your organization use scenario analysis to identify environmental outcomes?

Climate change

(5.1.1) Use of scenario analysis

Select from:
☑ Yes

(5.1.2) Frequency of analysis

Select from:
☑ Annually
[Fixed row]

(5.1.1) Provide details of the scenarios used in your organization's scenario analysis.

Climate change

(5.1.1.1) Scenario used

Climate transition scenarios
☑ NGFS scenarios framework, please specify**:** The climate scenarios used in Google's scenario analysis exercise are those developed by the Intergovernmental Panel on Climate Change (IPCC) and the Network for Greening the Financial System (NGFS).

(5.1.1.3) Approach to scenario

Select from:
☑ Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:
☑ Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply
☑ Policy
☑ Market
☑ Reputation
☑ Technology
☑ Liability

(5.1.1.6) Temperature alignment of scenario

Select from:
☑ 1.5°C or lower

(5.1.1.7) Reference year

2022

(5.1.1.8) Timeframes covered

Select all that apply
☑ 2030
☑ 2040
☑ 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts
☑ Climate change (one of five drivers of nature change)

Relevant technology and science
☑ Other relevant technology and science driving forces, please specify**:** Costs and availability to transition to lower emissions technology.

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

The transition risk model for the transition to lower emissions technology and products was based on three key components: Google owned- and operated data center energy demand based on high and low climate scenarios; availability and costs of renewable energy PPAs to match local energy demand each hour of the day; and the amount of additional PPAs that would be needed to meet Google's 24/7 CFE goal. Our climate risk assessment was based on models and assumptions that may evolve over time due to changes in data availability, methodologies, and other factors and uncertainties.

(5.1.1.11) Rationale for choice of scenario

Climate risks were modeled under high- and low-emissions scenarios for both physical and transition risks using scenarios developed by the Intergovernmental Panel on Climate Change (IPCC) and the Network for Greening the Financial System (NGFS). For transition risks, risks assessed under the low emissions scenario (SSP1-2.6) were more likely due to changes in climate-related technologies and policies, among other factors. Addressing systemic challenges with carbon-free energy procurement—such as interconnection delays, higher development costs and project demand, supply chain issues, U.S. regulatory tariffs for solar modules, natural variability in generation, and regions with CFE market constraints—will be essential for rapid global grid decarbonization.

Climate change

(5.1.1.1) Scenario used

Physical climate scenarios
☑ RCP 8.5

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:
☑ SSP5

(5.1.1.3) Approach to scenario

Select from:
☑ Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:
☑ Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply
☑ Acute physical
☑ Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:
☑ 4.0°C and above

(5.1.1.7) Reference year

2022

(5.1.1.8) Timeframes covered

Select all that apply
☑ 2030
☑ 2040
☑ 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts
☑ Climate change (one of five drivers of nature change)

Direct interaction with climate
☑ Other direct interaction with climate driving forces, please specify**:** Sea-level rise and increased severity of weather events

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

The physical risk model for sea-level rise was based on the financial impact of sea level rise under both a high and low emissions scenario, considering sea-level projections, astronomical tides, storm surge, and potential damage of flooding to buildings and building contents. The methodology included projections of storm surge event depths and calculations of potential financial damage. Our climate risk assessment was based on models and assumptions that may evolve over time due to changes in data availability, methodologies, and other factors and uncertainties.

(5.1.1.11) Rationale for choice of scenario

Climate risks were modeled under high- and low-emissions scenarios for both physical and transition risks using scenarios developed by the Intergovernmental Panel on Climate Change (IPCC) and the Network for Greening the Financial System (NGFS). For physical risks, risks assessed under the high emissions scenario (SSP5-8.5) were more likely due to potential impacts to global climate systems associated with temperature increases. Physical climate risk analysis, particularly for sea-level rise, was a key focus as Google has operations in various coastal regions around the world, including the San Francisco Bay Area.
[Add row]

(5.1.2) Provide details of the outcomes of your organization's scenario analysis.

Climate change

(5.1.2.1) Business processes influenced by your analysis of the reported scenarios

Select all that apply
☑ Risk and opportunities identification, assessment and management
☑ Strategy and financial planning
☑ Resilience of business model and strategy
☑ Capacity building
☑ Target setting and transition planning

(5.1.2.2) Coverage of analysis

Select from:
☑ Organization-wide

(5.1.2.3) Summarize the outcomes of the scenario analysis and any implications for other environmental issues

Outcome: As part of the scenario analysis for our physical climate risk assessment, we considered the impact of sea level rise (SLR) under both low and high emissions scenarios across our global assets. Through the assessment, we determined that SLR had the potential to impact our offices in the San Francisco Bay Area and in Dublin, Ireland. Although SLR is gradual, acute events, such as storm surges, could be impactful. Actions: As an example of an action taken to improve the resilience of our buildings and real estate strategy and mitigate against this risk, we designed for 100-year flood scenarios at our prominent Bay View campus to lessen the impact of potential water incursion and prevent potential losses of equipment. This includes site design elements such as landscape mounds, driveway slopes, deployable barriers, and sealed foundations. As an example, the water retention ponds at Bay View not only collect water for reuse, but also provide nature restoration and sea level rise protection. We're also working on efforts to support longer term regional solutions, including restoration of the baylands, building a nature-based shoreline levy, and increasing flood protection and ecological resilience along channels and creeks that connect to the Bay. These (and related) efforts are ongoing. As a separate example, in 2023, we completed a native habitat restoration

project along the West Channel near our Sunnyvale, California, campus. The project provides flood protection for adjacent neighborhoods in Sunnyvale via a combination of floodwalls and flood control levees.
[Fixed row]

(5.2) Does your organization's strategy include a climate transition plan?

(5.2.1) Transition plan

Select from:
☑ Yes, we have a climate transition plan which aligns with a 1.5°C world

(5.2.3) Publicly available climate transition plan

Select from:
☑ Yes

(5.2.4) Plan explicitly commits to cease all spending on, and revenue generation from, activities that contribute to fossil fuel expansion

Select from:
☑ No, and we do not plan to add an explicit commitment within the next two years

(5.2.6) Explain why your organization does not explicitly commit to cease all spending on and revenue generation from activities that contribute to fossil fuel expansion

We use energy and natural resources to build and operate our data centers and offices around the world, and to power the many products and services that our customers and users rely on—including Google Cloud, Google Search, Google Workspace, and YouTube. In 2023, Google's data centers consumed over 24 TWh of electricity. While we have a goal to run on 24/7 carbon-free energy on every grid where we operate by 2030, currently in some of the geographies where we operate we have to rely on carbon-based energy due to a lack of CFE capacity and/or limited or nonexistent credible clean energy procurement mechanisms. We are working to change this through CFE procurement, new and improved technologies, and policy advocacy and partnerships. This includes working with partners in the energy sector to accelerate the transition to carbon-free energy. We do not build custom AI or ML algorithms for upstream extraction in the oil and gas industry.

(5.2.7) Mechanism by which feedback is collected from shareholders on your climate transition plan

Select from:
☑ We have a different feedback mechanism in place

(5.2.8) Description of feedback mechanism

We proactively engage with our stockholders and other stakeholders throughout the year on a broad range of topics that are of interest and priority to the company and our stockholders. These have included business strategy and performance, corporate governance, executive compensation, and environmental sustainability, among other matters. Our engagement enables us to better understand our stockholders' priorities and perspectives, gives us an opportunity to elaborate on our initiatives, policies, and practices, and fosters open and constructive dialogue. We share the feedback from these conversations with our Board, which considers these perspectives as part of its evaluation and review of our practices and disclosures. Details about our climate-related initiatives and strategy, which are part of our low-carbon transition plan, have been presented at past Annual Meetings of Stockholders. As an example, our sustainability efforts were highlighted in detail at the 2021 Annual Meeting of Stockholders. We have also presented our company response to climate-related stockholder proposals during recent Annual Meetings of Stockholders and have hosted ESG Investor calls.

(5.2.9) Frequency of feedback collection

Select from:
☑ More frequently than annually

(5.2.10) Description of key assumptions and dependencies on which the transition plan relies

Reaching net-zero emissions by 2030 is an extremely ambitious goal and we know it won't be easy. Our approach will continue to evolve and will require us to navigate significant uncertainty–including the uncertainty around the future environmental impact of AI, which is complex and difficult to predict. In addition, solutions for some key global challenges don't currently exist, and will depend heavily on the broader clean energy transition. The world's understanding of "net zero" remains in a dynamic state and is subject to refinement as global consensus develops. We'll proactively monitor the evolution of global standards to ensure our net-zero goal maintains alignment while maximizing our positive impact on the planet. In 2023, our total data center electricity consumption grew 17%. As Google's infrastructure continues to power the digital transition, providing numerous economic benefits across the globe, we expect this trend to continue in the future. But we see our growing infrastructure as an opportunity to drive the innovations and investments needed to power a low-carbon economy. For more details, see our Environmental Report, which outlines elements of our climate transition plan that will help us make progress toward our net-zero ambitions. This includes information about our GHG emissions, science-based emissions reduction target, emissions reduction initiatives, low-carbon products and services, value chain engagement, policy advocacy and engagement, climate risk assessment, and governance mechanisms.

(5.2.11) Description of progress against transition plan disclosed in current or previous reporting period

In 2023, our total GHG emissions increased 13% year-over-year, partially driven by a 37% year-over-year increase in our Scope 2 (market-based) emissions. Our total GHG emissions increased at a slower rate compared to the previous two years. 2023 also marks the first year of implementation of our carbon removals strategy, and while we have a long way to go to meet our 2030 target, we've begun establishing impactful partnerships and have started contracting for carbon removal credits. We also maintained our CFE percentage for Google's global portfolio of data centers and offices at 64% from 2022 to 2023, despite growth in electricity demand over this period. We've analyzed our operations and value chain to pinpoint specific levers that will drive carbon reductions across Scope 1, Scope 2, and Scope 3 emissions. While our reduction efforts are crucial, they alone won't get us all the way to our net zero goal. Examples of some of our key emissions reduction levers include: electrification, refrigerant mitigation, renewable fuels, energy management and carbon-free energy procurement, supplier engagement, minimizing embodied carbon, and sustainable travel.

(5.2.12) Attach any relevant documents which detail your climate transition plan (optional)

google-2024-environmental-report.pdf

(5.2.13) Other environmental issues that your climate transition plan considers

Select all that apply
☑ No other environmental issue considered
[Fixed row]

(5.3) Have environmental risks and opportunities affected your strategy and/or financial planning?

(5.3.1) Environmental risks and/or opportunities have affected your strategy and/or financial planning

Select from:
☑ Yes, both strategy and financial planning

(5.3.2) Business areas where environmental risks and/or opportunities have affected your strategy

Select all that apply

☑ Products and services
☑ Upstream/downstream value chain
☑ Operations
[Fixed row]

(5.3.1) Describe where and how environmental risks and opportunities have affected your strategy.

Products and services

(5.3.1.1) Effect type

Select all that apply
☑ Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply
☑ Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

A sustainable future will be built upon countless decisions made by governments, organizations, businesses, and individuals, which will need to be grounded in helpful and authoritative information. As an information company, we bring accurate, authoritative information to people to help them make key decisions in their lives, including information about sustainability. We don't tell people what choice to make, but we know that when they are given high quality information, they often make more sustainable choices. For the past two years, Google has provided information to over 1 billion users to help them make more sustainable choices annually through our products. We achieved this by offering sustainability features like fuel-efficient routing in Google Maps and more transportation options in Search, such as train routes. Example of a decision: We're tackling climate change by focusing on some of the most critical challenges: reducing emissions in sectors like energy and transportation, and better predicting extreme weather to lessen its effects. By applying AI and other cutting edge technologies to these problems, we can help individuals and organizations achieve their goals and maximize impact. In addition to our own products, our platforms like Google Cloud enable partners to build solutions that help others mitigate and adapt to climate change. We're also harnessing our years of experience as an AI-first company to enable others—people, businesses, communities, and governments— to use AI for both mitigation and adaptation. For more details, see the AI for Sustainability section in our 2024 Google Environmental Report: https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf – *Unique, signed-in Google users that were provided information to make a more sustainable choice by at least one sustainable product feature.*

Upstream/downstream value chain

(5.3.1.1) Effect type

Select all that apply
☑ Risks

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply
☑ Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

Addressing our Scope 3 supply chain emissions is particularly challenging due to the geographic diversity of our suppliers, which span many countries and grid regions. In many regions where our suppliers operate, they face many of the same challenges we do: insufficient CFE capacity and limited or nonexistent credible clean energy procurement mechanisms. The Asia-Pacific region, which is a critical region for our suppliers, is one of the most challenging regions for contracting and investing in carbon-free energy projects. Example of a decision: In 2023, we worked closely with our largest hardware manufacturing suppliers, by spend, to obtain decarbonization roadmaps, some of which include GHG emissions reduction targets, and we implemented a Google Renewable Energy Addendum asking these suppliers to commit to achieving 100% renewable energy match by 2029. We're also working directly with suppliers of hotspot commodities—or commodities with disproportionately high emissions—to identify and collaborate on carbon reduction initiatives that support our own emissions reduction target. The semiconductor industry is a prime example of an emissions hotspot due to the electricity and associated emissions from the manufacturing and powering of chips in electronics devices. We actively engage in consortia and industry organizations to drive systemic change and support scalable research and development within the semiconductor industry. In 2023, Google became a founding sponsor of Catalyze, a decarbonization program that aims to accelerate access to renewable energy across the global semiconductor value chain by combining energy purchasing power and enabling supplier participation in renewable energy projects.

Operations

(5.3.1.1) Effect type

Select all that apply
☑ Risks

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply
☑ Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

Achieving 24/7 CFE is a far more complex and technically challenging pursuit than annually matching our energy use with renewable energy purchases, but we see this effort as crucial to a bigger picture: scaling new, global solutions for clean energy. Example of a decision: We're pioneering innovative contracting models and industry partnerships, accelerating the adoption of corporate clean energy practices and improving access to more buyers. We piloted a new approach to clean energy requests for proposals (RFPs) that can reduce the time to negotiate and execute a PPA, enabling easy, transparent, reliable, and efficient contracting in today's market. We're also using Google's engineering expertise and purchasing power to accelerate the commercialization of a wide range of CFE technologies. In 2021, we signed the first corporate agreement to develop a next-generation geothermal power project in Nevada, which became operational in 2023.
[Add row]

(5.3.2) Describe where and how environmental risks and opportunities have affected your financial planning.

Row 1

(5.3.2.1) Financial planning elements that have been affected

Select all that apply
☑ Direct costs
☑ Indirect costs
☑ Capital expenditures
☑ Capital allocation

(5.3.2.2) Effect type

Select all that apply
☑ Risks

(5.3.2.3) Environmental issues relevant to the risks and/or opportunities that have affected these financial planning elements

Select all that apply
☑ Climate change

(5.3.2.4) Describe how environmental risks and/or opportunities have affected these financial planning elements

Case study for direct costs: In 2020, we set a goal to run on 24/7 carbon-free energy—every hour of every day on every grid where we operate—by 2030. We're working to achieve this through three main initiatives: purchasing carbon-free energy, accelerating new and improved technologies, and transforming the energy system through policy, partnerships, and advocacy. Our climate risk assessment indicated potential risks from costs to transition to lower emissions technology. Actions: To mitigate this potential risk, we've focused on procuring renewable energy for our operations via long-term contracts with stable prices. We're buying electricity directly from new clean energy projects through various methods depending on the market, including: contracting directly via long-term PPAs; working with utilities or developers to buy and deliver carbon-free energy; structuring energy supply contracts with energy providers through the CFE Manager model (for more details, see: https://cloud.google.com/blog/topics/sustainability/a-new-clean-energy-purchasing-model-to-drive-decarbonization); and making targeted investments in renewable energy to enable additional projects on the grids where we operate. Results: From 2010 to 2023, we signed more than 115 agreements to purchase over 14 GW of clean energy generation capacity. Through these agreements, we estimate we'll spend more than $16 billion to purchase clean energy through 2040. This estimated spend is based on contracts signed to purchase clean energy for our operations, and includes some targeted renewable energy investments where we also receive EACs. Actual spend may vary from these estimates based on changes in renewable electricity output from operational projects, the number of contracts signed, project terminations, and energy market prices. [Add row]

(5.4) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?

	Identification of spending/revenue that is aligned with your organization's climate transition	Methodology or framework used to assess alignment with your organization's climate transition
	Select from: ☑ Yes	*Select all that apply* ☑ Other methodology or framework

[Fixed row]

(5.4.1) Quantify the amount and percentage share of your spending/revenue that is aligned with your organization's climate transition.

Row 1

(5.4.1.1) Methodology or framework used to assess alignment

Select from:
☑ Other, please specify**:** Estimated spend is based on contracts signed to purchase clean energy for our operations, and includes some targeted renewable energy investments where we also receive EACs. Actual spend may vary from these estimates due to various factors.

(5.4.1.6) Amount of selected financial metric that is aligned in the reporting year (currency)

0

(5.4.1.7) Percentage share of selected financial metric aligned in the reporting year (%)

0

(5.4.1.8) Percentage share of selected financial metric planned to align in 2025 (%)

0

(5.4.1.9) Percentage share of selected financial metric planned to align in 2030 (%)

0

(5.4.1.12) Details of the methodology or framework used to assess alignment with your organization's climate transition

An example of an aspect of our transition to net-zero, and a key Scope 2 emissions reduction lever, is carbon-free energy procurement. We buy electricity directly from new clean energy projects through various methods depending on the market, including: contracting directly via long-term PPAs; working with utilities or developers to buy and deliver carbon-free energy; structuring energy supply contracts with energy providers through the CFE Manager model; and making targeted investments in renewable energy to enable additional projects on the grids where we operate. From 2010 to 2023, we signed more than 115 agreements to purchase over 14 GW of clean energy generation capacity. Through these agreements, we estimate we'll spend more than $16 billion to purchase clean energy through 2040. This estimated spend is based on contracts signed to purchase clean energy for our operations, and includes some targeted renewable energy investments where we also receive EACs. Actual spend may vary from these estimates based on changes in renewable electricity output from operational projects, the number of contracts signed, project terminations, and energy market prices. We have listed '0' for the 'amount of selected financial metric that is aligned in the reporting year' and for the 'percentage share of the selected financial metric…' sections as we do not disclose this information for business reasons.
[Add row]

(5.10) Does your organization use an internal price on environmental externalities?

	Use of internal pricing of environmental externalities	Environmental externality priced
	Select from: ☑ Yes	*Select all that apply* ☑ Carbon

[Fixed row]

(5.10.1) Provide details of your organization's internal price on carbon.

Row 1

(5.10.1.1) Type of pricing scheme

Select from:
☑ Implicit price

(5.10.1.2) Objectives for implementing internal price

Select all that apply
☑ Identify and seize low-carbon opportunities

(5.10.1.3) Factors considered when determining the price

Select all that apply

☑ Cost of required measures to achieve climate-related targets
☑ Price with substantive impact on business decisions
☑ Price/cost of renewable energy procurement
☑ Price/cost of voluntary carbon offset credits
☑ Scenario analysis

(5.10.1.4) Calculation methodology and assumptions made in determining the price

We've analyzed our operations and value chain to pinpoint specific levers that will drive carbon reductions across Scope 1, Scope 2, and Scope 3 emissions. We've calculated the cost per ton for emissions reduction levers and have used that to inform prioritization. In developing our approach, we've considered external references indicating that carbon prices ranging from $50–$160/tCO2 by 2030 are needed to achieve the Paris climate goals and incentivize the transition toward net zero. We do not disclose our methodology, our range, how we determine it, or its variance as we consider this to be competitive information. For '% total emissions in the reporting year in selected scopes this internal price covers': We listed 95% as a high-level estimate of the emissions that this internal price could cover as we've used cost per ton estimates to inform prioritization of emissions reduction levers across various emissions scopes. This estimate may differ from actual emissions reduction initiatives prioritized.

(5.10.1.5) Scopes covered

Select all that apply

☑ Scope 1
☑ Scope 3, Category 11 - Use of sold products
☑ Scope 2
☑ Scope 3, Category 1 - Purchased goods and services
☑ Scope 3, Category 2 - Capital goods
☑ Scope 3, Category 5 - Waste generated in operations
☑ Scope 3, Category 6 - Business travel
☑ Scope 3, Category 12 - End-of-life treatment of sold products
☑ Scope 3, Category 7 - Employee commuting
☑ Scope 3, Category 4 - Upstream transportation and distribution
☑ Scope 3, Category 3 - Fuel- and energy-related activities (not included in Scope 1 or 2)

(5.10.1.6) Pricing approach used – spatial variance

Select from:

☑ Differentiated

(5.10.1.7) Indicate how and why the price is differentiated

We calculate the cost per ton for emissions reduction levers, which can span many areas of our business. We do not disclose our methodology, our range, how we determine it, or its variance as we consider this to be competitive information. We have different estimates for different implementations, and may reevaluate as needed.

(5.10.1.8) Pricing approach used – temporal variance

Select from:

☑ Evolutionary

(5.10.1.9) Indicate how you expect the price to change over time

We do not disclose our methodology, our range, how we determine it, or its variance as we consider this to be competitive information. We have different estimates for different implementations, and may reevaluate as needed.

(5.10.1.10) Minimum actual price used (currency per metric ton CO2e)

50

(5.10.1.11) Maximum actual price used (currency per metric ton CO2e)

160

(5.10.1.12) Business decision-making processes the internal price is applied to

Select all that apply
☑ Operations
☑ Procurement

(5.10.1.13) Internal price is mandatory within business decision-making processes

Select from:
☑ No

(5.10.1.14) % total emissions in the reporting year in selected scopes this internal price covers

95

(5.10.1.15) Pricing approach is monitored and evaluated to achieve objectives

Select from:
☑ Yes

(5.10.1.16) Details of how the pricing approach is monitored and evaluated to achieve your objectives

The approach for estimating cost per ton for emissions reduction levers is evaluated regularly as we assess different implementations and as new data is available.
[Add row]

(5.11) Do you engage with your value chain on environmental issues?

	Engaging with this stakeholder on environmental issues	Environmental issues covered
Suppliers	*Select from:* ☑ Yes	*Select all that apply* ☑ Climate change
Customers	*Select from:* ☑ Yes	*Select all that apply* ☑ Climate change
Investors and shareholders	*Select from:* ☑ Yes	*Select all that apply* ☑ Climate change
Other value chain stakeholders	*Select from:* ☑ Yes	*Select all that apply* ☑ Climate change

[Fixed row]

(5.11.1) Does your organization assess and classify suppliers according to their dependencies and/or impacts on the environment?

Climate change

(5.11.1.1) Assessment of supplier dependencies and/or impacts on the environment

Select from:
☑ Yes, we assess the dependencies and/or impacts of our suppliers

(5.11.1.2) Criteria for assessing supplier dependencies and/or impacts on the environment

Select all that apply
☑ Contribution to supplier-related Scope 3 emissions

(5.11.1.3) % Tier 1 suppliers assessed

Select from:
☑ 76-99%

(5.11.1.4) Define a threshold for classifying suppliers as having substantive dependencies and/or impacts on the environment

We're working directly with suppliers of hotspot commodities—or commodities with disproportionately high emissions—to identify and collaborate on carbon reduction initiatives that support our own emissions reduction target. We're focused on our largest hardware manufacturing suppliers, by spend, to obtain decarbonization roadmaps, some of which include GHG emissions reduction targets.
[Fixed row]

(5.11.2) Does your organization prioritize which suppliers to engage with on environmental issues?

Climate change

(5.11.2.1) Supplier engagement prioritization on this environmental issue

Select from:
☑ Yes, we prioritize which suppliers to engage with on this environmental issue

(5.11.2.2) Criteria informing which suppliers are prioritized for engagement on this environmental issue

Select all that apply
☑ In line with the criteria used to classify suppliers as having substantive dependencies and/or impacts relating to climate change
☑ Procurement spend
☑ Product lifecycle

(5.11.2.4) Please explain

In 2023, we worked closely with our largest hardware manufacturing suppliers, by spend, to obtain decarbonization roadmaps, some of which include GHG emissions reduction targets, and we implemented a Google Renewable Energy Addendum asking these suppliers to commit to achieving 100% renewable energy match by 2029.
[Fixed row]

(5.11.5) Do your suppliers have to meet environmental requirements as part of your organization's purchasing process?

Climate change

(5.11.5.1) Suppliers have to meet specific environmental requirements related to this environmental issue as part of the purchasing process

Select from:
☑ Yes, environmental requirements related to this environmental issue are included in our supplier contracts

(5.11.5.2) Policy in place for addressing supplier non-compliance

Select from:
☑ Yes, we have a policy in place for addressing non-compliance

(5.11.5.3) Comment

All suppliers are required to sign our Supplier Code of Conduct, which states that suppliers should seek to minimize energy consumption and GHG emissions. Google's Supplier Code of Conduct (https://about.google/intl/en_us/supplier-code-of-conduct/) includes requirements that enable us to ensure that those we partner with are responsible environmental stewards. Along with having suppliers evaluate their operations, we perform our own ongoing due diligence and audits to verify compliance and to understand our supply chain's current and potential risks. We investigate any issues identified during an audit, and when we find that a supplier isn't conforming to our expectations, we expect the supplier to provide a corrective action plan that outlines the root cause of the finding, how and when they will resolve the issue, and what steps will be taken to prevent recurrence. We determine whether the plan is acceptable based on our Supplier Code of Conduct requirements. Lastly, we monitor and verify all corrective actions are completed in the agreed-upon time frame, with a process for escalation if necessary to the Supplier Responsibility Steering Team, which comprises our Chief Compliance Officer and leaders from our data center, devices, and extended workforce teams.
[Fixed row]

(5.11.6) Provide details of the environmental requirements that suppliers have to meet as part of your organization's purchasing process, and the compliance measures in place.

Climate change

(5.11.6.1) Environmental requirement

Select from:
☑ Implementation of emissions reduction initiatives

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply
☑ On-site third-party audit
☑ Supplier scorecard or rating
☑ Supplier self-assessment

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:
☑ 100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

☑ 76-99%

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:
☑ 100%

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:
☑ None

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:
☑ Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:
☑ 100%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply
☑ Providing information on appropriate actions that can be taken to address non-compliance

(5.11.6.12) Comment

All suppliers are required to sign our Supplier Code of Conduct, and most do. Google's Supplier Code of Conduct includes requirements that enable us to ensure that those we partner with are responsible environmental stewards. As an example, the Resource Efficiency criteria in our Supplier Code of Conduct states that suppliers will track, document, and seek to minimize energy consumption and greenhouse gas emissions. In 2023, we audited a subset of our suppliers to verify compliance for various environmental criteria, and for the Resource Efficiency criteria in particular found that the majority of audited supplier facilities had no findings after the audit. We investigate any issues identified during an audit, and when we find that a supplier isn't conforming to our expectations, we expect the supplier to provide a corrective action plan. Explanation of percentages: For the "% tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement" we select "100" as all suppliers are expected to sign our Supplier Code of Conduct, and for the "% of tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement" we select "None" as we use different methodologies to calculate full supply chain emissions and emissions by commodity, rather than just by supplier.

Climate change

(5.11.6.1) Environmental requirement

Select from:
☑ Setting a science-based emissions reduction target

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply
☑ Other, please specify**:** (We expect all of our suppliers to set GHG reduction targets. While this was not implemented as of the end of 2023, we requested climate data, including details about emissions reduction targets from suppliers through CDP's Supply Chain platform)

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:
☑ None

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:
☑ None

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:
☑ None

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:
☑ None

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:
☑ Other, please specify**:** (This has not been implemented as of the end of 2023, however, our supplier engagement efforts include collaborating with suppliers to establish net-zero roadmaps that are in alignment with our company-wide net-zero goal.)

(5.11.6.10) % of non-compliant suppliers engaged

Select from:
☑ None

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply
☑ Providing information on appropriate actions that can be taken to address non-compliance

(5.11.6.12) Comment

We expect all of our suppliers to set public GHG reduction targets and report their environmental data. We engage some of our suppliers to directly collect data, and also encourage some suppliers to respond to CDP's Climate Change survey. In 2023, we invited 312 suppliers to participate. At least 90% of our hardware suppliers, by spend, provided data. Of the suppliers that we invited to respond to the CDP Climate Change survey in 2023, 60% reported having structured GHG emissions reduction targets, and 74% of those targets were science-based. To support this, we engage our suppliers to improve their environmental data collection and accounting, and we provide training on reporting to CDP as well as on setting GHG reduction and renewable electricity targets. Explanation of percentages: Given that this expectation has not been implemented as a formal requirement as of the end of 2023, we are unable to provide estimated percentages for supplier compliance. For the purpose of CDP reporting, we have put "None" for the "% suppliers by procurement spend that have to comply with this environmental requirement" and for the "% suppliers by procurement spend in compliance with this environmental requirement", as well as for the "% tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement" and "% tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement."
[Add row]

(5.11.7) Provide further details of your organization's supplier engagement on environmental issues.

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:
☑ Emissions reduction

(5.11.7.3) Type and details of engagement

Capacity building
☑ Provide training, support and best practices on how to measure GHG emissions
☑ Provide training, support and best practices on how to set science-based targets
☑ Other capacity building activity, please specify**:** We provide training on reporting to CDP. In 2023, we hosted summits for both our technical infrastructure and consumer hardware device suppliers, where we discussed Google's net-zero ambitions, among other topics.

(5.11.7.4) Upstream value chain coverage

Select all that apply
☑ Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:
☑ 76-99%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:
☑ 76-99%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

Primary activity data is essential for more accurately calculating our supply chain carbon footprint and developing life cycle assessments. We expect all of our suppliers to set public GHG reduction targets and report their environmental data, which helps us guide our priorities for our supplier sustainability program. We engage some of our suppliers to directly collect data, and also encourage some suppliers to respond to CDP's Climate Change survey. We also engage our suppliers to improve their environmental data collection and accounting, including for their Scope 1, 2, and 3 emissions. For example, we provide training on reporting to CDP as well as on setting GHG reduction and renewable electricity targets. In 2023, we hosted summits for both our technical infrastructure and consumer hardware device suppliers, where we discussed Google's net-zero ambitions, among other topics. Measures of success from engaging our suppliers in GHG emissions reporting and reduction include: response rates, proportion of suppliers reporting GHG emissions, and proportion of suppliers with GHG emissions reduction targets. Thresholds to measure success: a response rate of at least 90%, 80% of our suppliers reporting GHG emissions, and 50% of suppliers having a GHG emissions reduction target. Results: In 2023, we invited 312 suppliers to participate, a 40% increase compared to 2022. At least 90% of our hardware suppliers, by spend, provided data. Of the suppliers that we invited to respond to the CDP Climate Change survey in 2023, 60% reported having structured GHG emissions reduction targets, and 74% of those targets were science-based.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

☑ Yes, please specify the environmental requirement**:** Environmental disclosure and target-setting

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:
☑ Yes
[Add row]

(5.11.9) Provide details of any environmental engagement activity with other stakeholders in the value chain.

Climate change

(5.11.9.1) Type of stakeholder

Select from:
☑ Customers

(5.11.9.2) Type and details of engagement

Education/Information sharing
☑ Run an engagement campaign to educate stakeholders about the environmental impacts about your products, goods and/or services

(5.11.9.3) % of stakeholder type engaged

Select from:
☑ 100%

(5.11.9.4) % stakeholder-associated scope 3 emissions

Select from:
☑ 100%

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

Rationale for group of customers & scope of engagement: Google Cloud offers organizations a new way to drive impact for their business and sustainability. We help organizations harness AI for improved sustainability measurement to build resilience, AI-powered insights to use energy and resources more efficiently in operations and supply chains to reduce costs, and AI tools to unlock new growth opportunities and markets while accelerating sustainability impact. We work with a growing group of cloud customers focused on reducing the carbon impact of their operations. We partner with these customers because they are keen to cut carbon emissions, explore new ways to protect the earth's resources, better harness renewable energy, & improve the sustainability of their IT infrastructure. We help developers reduce the carbon footprint of their cloud-based applications. We've created a suite of products in our Carbon Sense Suite so customers can accurately measure, report, and reduce their cloud carbon emissions (through Carbon Footprint) with recommendations for carbon reduction actions (through Region Picker and Active Assist). As an example, our Carbon Footprint tool is available to 100% of Google Cloud customers for free in the Cloud Console. It provides customers with the gross carbon emissions associated with their Google Cloud Platform (GCP) usage. More details on this and other tools are available here: https://cloud.google.com/blog/topics/sustainability/cop28-how-to-decarbonize-your-google-cloud-carbon-footprint We also publish content on cloud.google.com/sustainability about the importance of taking sustainability into account with regards to infrastructure & application development. We host webinars, virtual roundtables, & executive engagement sessions on cloud sustainability. Our sales teams work with customers to share tools for calculating the potential emissions impact of migrations of applications to the cloud, host workshops for architecting applications in the most carbon-free way possible, & share best practices to make their IT more sustainable. We've included information on our climate strategy & performance at Google Cloud

Next, & have sponsored a sustainability survey for top-level executives (https://cloud.google.com/blog/transform/2023-google-cloud-sustainability-survey).

(5.11.9.6) Effect of engagement and measures of success

We're collaborating with customers and commercial partners across many sectors to work towards sustainability goals. Measures and thresholds of success can include: Working with customers to measure, report, and reduce their cloud carbon emissions, and having a positive percentage of customers monitoring their emissions via the Cloud Carbon Footprint tool. Another measure of success can be having Cloud customers report advancements in sustainability strategy as a result of our engagement. Impact of engagement: As of March 2024, we saw many of our Google Cloud customers monitor and review their emissions, with over 50% of GCP carbon emissions are already being monitored via the Cloud Carbon Footprint tool. Also, in 2023, dozens of customers shared examples of the environmental benefits and progress as a result of Google Cloud sustainability offerings via our Cloud Sustainability Blog and other channels. As an example of our Cloud customer engagement: Our predictive analytics are offering innovative ways to promote clean energy. Engie partnered with Atlas AI to use its Google Cloud-powered analytics platform to successfully identify potential off-grid solar customers in Kenya.

Climate change

(5.11.9.1) Type of stakeholder

Select from:
☑ Investors and shareholders

(5.11.9.2) Type and details of engagement

Education/Information sharing
☑ Share information on environmental initiatives, progress and achievements

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

We proactively engage with our stockholders and other stakeholders throughout the year on a broad range of topics that are of interest and priority to the company and our stockholders. These include business strategy and performance, corporate governance, executive compensation, and environmental sustainability, among other matters. We publish an annual Environmental Report, which provides an overview of our environmental sustainability strategy, our targets, and our annual progress toward them.

Climate change

(5.11.9.1) Type of stakeholder

Select from:
☑ Other value chain stakeholder, please specify**:** Partners

(5.11.9.2) Type and details of engagement

Innovation and collaboration
☑ Collaborate with stakeholders on innovations to reduce environmental impacts in products and services
☑ Run a campaign to encourage innovation to reduce environmental impacts

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

Google partners with many organizations to accelerate progress toward shared sustainability goals. For more details, see Google's 2024 Environmental Report: https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf. Some examples include: - Contrails—the thin, white lines that can appear behind aircraft—trap heat within the earth's atmosphere and are significant contributors to climate change. To mitigate contrails, Google Research partnered with Breakthrough Energy and American Airlines to develop an AI-based tool to predict where contrails will form. We share insights from this tool with the aviation community so it can safely reroute planes to reduce the chances of contrail formation. - We've

launched a partnership with EDF's MethaneSAT to help power their satellite data analysis, map leaks from oil and gas infrastructure around the globe, and put methane insights into the hands of scientists and decision-makers.
[Add row]

C6. Environmental Performance - Consolidation Approach

(6.1) Provide details on your chosen consolidation approach for the calculation of environmental performance data.

Climate change

(6.1.1) Consolidation approach used

Select from:
☑ Operational control

(6.1.2) Provide the rationale for the choice of consolidation approach

We use the operational control approach to define our organizational boundary, which means that we account for all emissions from operations over which we have control. We define operational control as having the authority to introduce and implement operational policies over an asset, and we report all energy and emissions for Alphabet Inc. and its subsidiaries' data centers, offices, and other assets under our operational control ("Global Facilities").
[Fixed row]

C7. Environmental performance - Climate Change

(7.1) Is this your first year of reporting emissions data to CDP?

Select from:
☑ No

(7.1.1) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

	Has there been a structural change?
	Select all that apply ☑ No

[Fixed row]

(7.1.2) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

(7.1.2.1) Change(s) in methodology, boundary, and/or reporting year definition?

Select all that apply
☑ Yes, a change in methodology
☑ Yes, a change in boundary

(7.1.2.2) Details of methodology, boundary, and/or reporting year definition change(s)

For Scope 2 emissions: We expanded the boundary to include purchased steam, hot water, and chilled water from district energy systems. For Scope 3 emissions: We included two additional Scope 3 categories to our GHG emissions inventory—Category 3 and Category 5—and added these categories to our reported historical inventories. We also made several adjustments to our calculation methodology for several Scope 3 categories, including Categories 1, 2, 4, 6, and 7. [Fixed row]

(7.1.3) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in 7.1.1 and/or 7.1.2?

(7.1.3.1) Base year recalculation

Select from:
☑ Yes

(7.1.3.2) Scope(s) recalculated

Select all that apply
☑ Scope 1
☑ Scope 2, market-based
☑ Scope 3

(7.1.3.3) Base year emissions recalculation policy, including significance threshold

Our internal recalculation policy, which follows guidance from the Greenhouse Gas Protocol, informs how we apply updates made in the current reporting period to metrics from prior reporting periods—including our 2019 base year for our emissions reduction target. Updates may include structural changes, calculation methodology updates, the inclusion of additional activity data, improvements in the accuracy of emission factors or activity data, and the correction of errors. To maintain consistency over time so that meaningful metric comparisons can be made, it may be necessary to recalculate our historical metrics, including base year emissions, to the extent a change is significant. In line with our recalculation policy, in 2023 we recalculated certain previously reported metrics, including our GHG emissions for our 2019 base year and interim years presented where the impact was deemed significant. See the Environmental data table endnotes in our 2024 Google Environmental Report for more information on which metrics and years were recalculated:
https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf

(7.1.3.4) Past years' recalculation

Select from:
☑ Yes
[Fixed row]

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

Select all that apply
☑ The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
☑ The Greenhouse Gas Protocol: Scope 2 Guidance
☑ The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Standard

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

	Scope 2, location-based	Scope 2, market-based

	Select from: ☑ We are reporting a Scope 2, location-based figure	*Select from:* ☑ We are reporting a Scope 2, market-based figure

[Fixed row]

(7.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?

Select from:
☑ No

(7.5) Provide your base year and base year emissions.

Scope 1

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

81900

(7.5.3) Methodological details

Scope 1 GHG emissions are direct emissions from sources such as company vehicles or generators at our offices and data centers. They represent direct emissions from owned Global Facilities, including fuel use from back-up generators, fuel consumption from our operated vehicles and aircraft, methane and nitrous oxide from biogenic fuel sources, natural gas usage, and refrigerant leakage. Where actual data isn't available, for example from a utility bill, we estimate natural gas consumption using square footage of Global Facilities and internally developed natural gas intensity factors by office type, based on data from the reporting period. Where actual refrigerant leakage data isn't available, we estimate refrigerant leakage by taking an average of GWP values from known refrigerants within our portfolio and leakage rates at Global Facilities. The emission factors used to calculate Scope 1 emissions include the 2017 WRI/WBCSD GHG Protocol Emission Factors from Cross Sector Tools, the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub, 2023 Climate Registry Default Emission Factors, and the 2023 Department for Environment, Food and Rural Affairs (DEFRA) UK Government GHG Conversion Factors. For more details, see our 2024 (FY2023) Independent Accountants' Review Report.

Scope 2 (location-based)

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

5116900

(7.5.3) Methodological details

Scope 2 GHG emissions are indirect emissions from: purchased electricity; natural gas use and refrigerant leakage in our leased offices; purchased steam, hot water, and chilled water from district energy systems. The location-based method reflects the average carbon intensity of the electric grids where our operations are located and thus where our electricity consumption occurs. The market-based method incorporates our procurement choices, namely our renewable energy purchases via contractual mechanisms like PPAs. We use actual data (such as third-party invoices, monthly utility bills, or meter readings) to calculate Scope 2 emissions. Where actual data isn't available, we estimate electricity consumption, natural gas consumption,

and activity from district energy systems using square footage of Global Facilities and internally developed intensity factors by office type, based on data from the reporting period. The emission factors used to calculate Scope 2 (location-based) emissions include the 2017 WRI/WBCSD GHG Protocol Emission Factors from Cross Sector Tools, the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub, the 2023 DEFRA UK Government GHG Conversion Factors, the 2023 IEA Emission Factors, the 2024 EPA eGRID Emission Factors, and the 2023 Climate Registry Default Emission Factors. The emission factors used to calculate Scope 2 (market-based) emissions are the same as Scope 2 (location-based) with the addition of emission factors specific to energy attribute certificates. Outside of Europe, residual emission factors aren't available from third-party sources to account for voluntary purchases, and this may result in double counting between electricity consumers.

Scope 2 (market-based)

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

835500

(7.5.3) Methodological details

Scope 2 GHG emissions are indirect emissions from: purchased electricity; natural gas use and refrigerant leakage in our leased offices; purchased steam, hot water, and chilled water from district energy systems. The location-based method reflects the average carbon intensity of the electric grids where our operations are located and thus where our electricity consumption occurs. The market-based method incorporates our procurement choices, namely our renewable energy purchases via contractual mechanisms like PPAs. We use actual data (such as third-party invoices, monthly utility bills, or meter readings) to calculate Scope 2 emissions. Where actual data isn't available, we estimate electricity consumption, natural gas consumption, and activity from district energy systems using square footage of Global Facilities and internally developed intensity factors by office type, based on data from the reporting period. The emission factors used to calculate Scope 2 (location-based) emissions include the 2017 WRI/WBCSD GHG Protocol Emission Factors from Cross Sector Tools, the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub, the 2023 DEFRA UK Government GHG Conversion Factors, the 2023 IEA Emission Factors, the 2024 EPA eGRID Emission Factors, and the 2023 Climate Registry Default Emission Factors. The emission factors used to calculate Scope 2 (market-based) emissions are the same as Scope 2 (location-based) with the addition of emission factors specific to energy attribute certificates. Outside of Europe, residual emission factors aren't available from third-party sources to account for voluntary purchases, and this may result in double counting between electricity consumers.

Scope 3 category 1: Purchased goods and services

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

2676000

(7.5.3) Methodological details

Category 1: Purchased goods and services includes upstream emissions generated from manufacturing consumer devices, our food program, and additional goods and services purchased for our operations. We use the hybrid method, as defined by the Greenhouse Gas Protocol. To calculate full supply chain emissions generated from manufacturing consumer devices, we perform third-party-verified Life Cycle Assessments (LCAs) in accordance with ISO 14040 and ISO 14044. To calculate emissions generated from our food program, we use LCA emission factors from WRI and annual procurement volumes from our offices. Where actual procurement volume data isn't available, we extrapolate calculated emissions to our other offices using building admittances. To calculate emissions generated from the remaining goods and services purchased for our operations we estimate supplier emissions using spend data and industry-average GHG intensities by commodity type.

Scope 3 category 2: Capital goods

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

2378000

(7.5.3) Methodological details

Category 2: Capital goods includes upstream emissions generated from goods and services we purchase for our operations, including manufacturing and assembly of servers and networking equipment used in our technical infrastructure, as well as emissions from materials used in the construction of data centers and offices. We use the hybrid method, as defined by the Greenhouse Gas Protocol. For manufacturing and assembly of servers and networking equipment used in our technical infrastructure, we collect supplier GHG emissions data from our contract manufacturers, component suppliers, and fabless suppliers through the CDP Supply Chain Program. These suppliers represent our key “Tier 1” manufacturing suppliers with whom we have a direct relationship. Per GHG Protocol, a “Tier 1” supplier provides or sells goods or services directly to a company, while a “Tier 2” supplier provides or sells goods or services to the company’s “Tier 1” supplier. Where actual supplier emissions data isn’t available, we estimate supplier emissions using spend data, U.S. EnvironmentallyExtended Input-Output industry-average GHG intensities by commodity type, or other supplier GHG data. We calculate data center construction emissions by using an LCA analysis to derive construction emissions data and then applying this to our construction activity. We present certain emissions from Category 2, Category 11, and Category 12 as an aggregated subtotal in "Other (Upstream)" for business reasons.

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

381000

(7.5.3) Methodological details

Category 3: Fuel- and energy-related activities not included in Scope 1 or Scope 2 includes upstream emissions from purchased fuels (e.g., natural gas, diesel, and gasoline) and purchased energy (i.e., electricity, steam, heating, and cooling), as well as emissions from transmission and distribution losses from purchased energy, calculated using the market-based Scope 2 total. We use the average-data method, as defined by the Greenhouse Gas Protocol. We calculate upstream emissions from purchased fuel, steam, heating, and cooling and emissions from transmission and distribution of steam, heating, and cooling, using 2023 DEFRA UK Government GHG Conversion Factors. We calculate emissions from upstream electricity by country using the 2023 IEA Emission Factors. We calculate emissions from electricity transmission and distribution losses using the 2023 IEA Emission Factors and, for the United States, the 2024 EPA eGRID Emission Factors. For upstream electricity, we calculate emissions using Scope 2 market-based data (i.e., by using the remaining electricity not addressed by renewable energy).

Scope 3 category 4: Upstream transportation and distribution

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

508000

(7.5.3) Methodological details

Category 4: Upstream transportation and distribution includes emissions generated primarily from transportation and warehousing of our consumer products and data center equipment. We calculate this category's emissions to also include the optional activities of (1) upstream emissions of transportation, and (2) transportation of data center equipment to decommission locations (which is an optional activity under Category 5). We use a combination of the fuel-based, distance-based, and site-specific methods, as defined by the Greenhouse Gas Protocol. For transportation emissions, we collect data from our logistics providers. These WTW GHG emissions are calculated based on fuel use or weight-distance data and routing associated with a shipment. Where actual logistics provider emissions data isn't available, we estimate WTW emissions using weight and distance data by shipment collected from our providers, using emission factors from the 2023 Global Logistics Emissions Council (GLEC) framework or EPA SmartWay carrier performance data. Where logistics provider weight and distance data isn't available, we estimate emissions based on reported data from other transportation providers and the weight shipped. For warehousing emissions, we collect energy and refrigerant leakage data directly from the warehouses and calculate emissions using LCA electricity and fuel emission factors from the Sphera Professional database 2023 and refrigerant emission factors from the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub. Where actual warehouse energy data isn't available, we estimate the energy using the 2018 Commercial Buildings Energy Consumption Survey (CBECS) data and the warehouse square footage allocated to Alphabet. Where actual warehouse refrigerant leakage data isn't available, we estimate refrigerant leakage based on the average leakage rate from available data.

Scope 3 category 5: Waste generated in operations

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

11000

(7.5.3) Methodological details

Category 5: Waste generated in operations includes emissions from solid waste generated at our offices and data centers that is either composted, recycled, landfilled, or incinerated (with or without energy recovery). We calculate this category's emissions to also include the optional activity of waste transportation, which is embedded in the emission factors we use. We use a combination of the waste-type-specific method and the average-data method, as defined by the Greenhouse Gas Protocol. The waste generation data comes from a combination of data from invoices and on-site measurements. Where actual waste data isn't available for a specific facility, we estimate waste tonnage using waste container size and pickup frequency, actual waste data from similar facilities, or historical waste data from the same facility. We use waste type- and disposal type-specific emission factors from the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub for U.S. activity and the 2023 DEFRA UK Government GHG Conversion Factors for non-U.S. activity.

Scope 3 category 6: Business travel

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

369000

(7.5.3) Methodological details

Category 6: Business travel includes emissions from business-related air, rail, bus, personal vehicle, taxi, rideshare, shuttle, and rental car travel, including emissions from relocation travel. We use a combination of the distance-, fuel-, and spend-based calculation methods, as defined by the Greenhouse Gas Protocol. We collect all travel data through either our online booking system or a third-party travel agency. We calculate emissions from air, rail, taxi, rideshare, non-U.S. personal vehicle, and non-U.S. shuttle travel using 2023 DEFRA UK Government GHG Conversion Factors. We calculate emissions from car rental, U.S. personal vehicle, and U.S. shuttle travel using emission factors from the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub.

Scope 3 category 7: Employee commuting

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

173000

(7.5.3) Methodological details

Category 7: Employee commuting, including teleworking includes emissions from the transport of our full-time employees between their homes and their worksites by passenger car (i.e., carpool, dropoff, taxi, rideshare, or single-occupied vehicle), rail, bus, motorcycle, and gas-powered scooter. We calculate this category's emissions to also include the optional activity of teleworking. We use the distance-based method, as defined by the Greenhouse Gas Protocol. We survey our employees to determine typical commuting and teleworking patterns and apply these patterns to our global employee population. We use a mode-specific commuting distance obtained from the American Public Transportation Association's 2021 Fact Book and the U.S. Department of Transportation's 2022 National Household Travel Survey. We calculate employee commuting emissions using mode-specific emission factors from the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub. We account for the home energy emissions generated by our full-time employees working remotely by applying the estimation methodology outlined in EcoAct's 2020 Homeworking Emissions white paper to our annual average teleworking workforce. For more details, see our 2024 (FY2023) Independent Accountants' Review Report.

Scope 3 category 8: Upstream leased assets

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

n/a

Scope 3 category 9: Downstream transportation and distribution

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

n/a

Scope 3 category 10: Processing of sold products

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

n/a

Scope 3 category 11: Use of sold products

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

Category 11: Use of sold products includes downstream emissions generated by Google's flagship consumer devices sold in the reporting period. Flagship consumer devices are products that can provide their main functionality without connection to another product. For example, this generally doesn't include accessories such as cases. We calculate emissions from these activities using laboratory power draw measurements, data on use patterns, common industry assumptions on product lifetimes, and LCA electricity emission factors from the 2023 Sphera LCA for Experts database. We present certain emissions from Category 2, Category 11, and Category 12 as an aggregated subtotal in "Other (Upstream)" for business reasons.

Scope 3 category 12: End of life treatment of sold products

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

Category 12: End-of-life treatment of sold products includes downstream emissions associated with the end-of-life treatment of Google's flagship consumer devices sold in the reporting period. We use the average-data method, as defined by the Greenhouse Gas Protocol. We calculate end-of-life emissions through our LCA process, using emission factors from the 2023 Sphera LCA for Experts database. Our annual assessments continue to identify this category to be one that doesn't have significant life-cycle impact. We continue to develop programs to extend the life of our sold products and also to ensure efficient management of end-of-life materials. We present certain emissions from Category 2, Category 11, and Category 12 as an aggregated subtotal in "Other (Upstream)" for business reasons.

Scope 3 category 13: Downstream leased assets

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

n/a

Scope 3 category 14: Franchises

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

n/a

Scope 3 category 15: Investments

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

n/a

Scope 3: Other (upstream)

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

2258000

(7.5.3) Methodological details

We present certain emissions from Category 2, Category 11, and Category 12 as an aggregated subtotal in "Other (Upstream)" for business reasons. See the descriptions above for more details.

Scope 3: Other (downstream)

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

n/a
[Fixed row]

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

Reporting year

(7.6.1) Gross global Scope 1 emissions (metric tons CO2e)

79400

(7.6.3) Methodological details

Scope 1 GHG emissions are direct emissions from sources such as company vehicles or generators at our offices and data centers. They represent direct emissions from owned Global Facilities, including fuel use from back-up generators, fuel consumption from our operated vehicles and aircraft, methane and nitrous oxide from biogenic fuel sources, natural gas usage, and refrigerant leakage. Where actual data isn't available, for example from a utility bill, we estimate natural gas consumption using square footage of Global Facilities and internally developed natural gas intensity factors by office type, based on data from the reporting period. Where actual refrigerant leakage data isn't available, we estimate refrigerant leakage by taking an average of GWP values from known refrigerants within our portfolio and leakage rates at Global Facilities. The emission factors used to calculate Scope 1 emissions include the 2017 WRI/WBCSD GHG Protocol Emission Factors from Cross Sector Tools, the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub, 2023 Climate Registry Default Emission Factors, and the 2023 Department for Environment, Food and Rural Affairs (DEFRA) UK Government GHG Conversion Factors. For more details, see our 2024 (FY2023) Independent Accountants' Review Report.
[Fixed row]

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

Reporting year

(7.7.1) Gross global Scope 2, location-based emissions (metric tons CO2e)

9252900

(7.7.2) Gross global Scope 2, market-based emissions (metric tons CO2e) (if applicable)

3423400

(7.7.4) Methodological details

The emission factors used to calculate Scope 2 (location-based) emissions include the 2017 WRI/WBCSD GHG Protocol Emission Factors from Cross Sector Tools, the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub, the 2023 DEFRA UK Government GHG Conversion Factors, the 2023 IEA Emission Factors, the 2024 EPA eGRID Emission Factors, and the 2023 Climate Registry Default Emission Factors. The emission factors used to calculate Scope 2 (market-based) emissions are the same as Scope 2 (location-based) with the addition of emission factors specific to energy attribute certificates. Outside of Europe, residual emission factors aren't available from third-party sources to account for voluntary purchases, and this may result in double counting between electricity consumers.
[Fixed row]

(7.8) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

(7.8.1) Evaluation status

Select from:
☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

4038000

(7.8.3) Emissions calculation methodology

Select all that apply
☑ Hybrid method

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

3

(7.8.5) Please explain

Purchased goods and services includes upstream emissions generated from manufacturing consumer devices, our food program, and additional goods and services purchased for our operations. We use the hybrid method, as defined by the Greenhouse Gas Protocol. To calculate full supply chain emissions generated from manufacturing consumer devices, we perform third-party-verified Life Cycle Assessments (LCAs) in accordance with ISO 14040 and ISO 14044. To calculate emissions generated from our food program, we use LCA emission factors from WRI and annual procurement volumes from our offices. Where actual procurement volume data isn't available, we extrapolate calculated emissions to our other offices using building admittances. To calculate emissions generated from the remaining goods and services purchased for our operations we estimate supplier emissions using spend data and industry-average GHG intensities by commodity type.

Capital goods

(7.8.1) Evaluation status

Select from:
☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

1605000

(7.8.3) Emissions calculation methodology

Select all that apply
☑ Hybrid method

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

35

(7.8.5) Please explain

Capital goods includes upstream emissions generated from goods and services we purchase for our operations, including manufacturing and assembly of servers and networking equipment used in our technical infrastructure, as well as emissions from materials used in the construction of data centers and offices. We use the hybrid method, as defined by the Greenhouse Gas Protocol. For manufacturing and assembly of servers and networking equipment used in our technical infrastructure, we collect supplier GHG emissions data from our contract manufacturers, component suppliers, and fabless suppliers through the CDP Supply Chain Program. These suppliers represent our key "Tier 1" manufacturing suppliers with whom we have a direct relationship. Per GHG Protocol, a "Tier 1" supplier provides or sells goods or services directly to a company, while a "Tier 2" supplier provides or sells goods or services to the company's "Tier 1" supplier. Where actual supplier emissions data isn't available, we estimate supplier emissions using spend data, U.S. Environmentally-Extended Input-Output industry-average GHG intensities by commodity type, or other supplier GHG data. We calculate data center construction emissions by using an LCA analysis to derive construction emissions data and then applying this to our construction activity. We present emissions beyond our "Tier 1" manufacturing suppliers in "Other (upstream)."

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

(7.8.1) Evaluation status

Select from:
☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

1186000

(7.8.3) Emissions calculation methodology

Select all that apply
☑ Average data method

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

0

(7.8.5) Please explain

Fuel- and energy-related activities not included in Scope 1 or Scope 2 includes upstream emissions from purchased fuels (e.g., natural gas, diesel, and gasoline) and purchased energy (i.e., electricity, steam, heating, and cooling), as well as emissions from transmission and distribution losses from purchased energy, calculated using the market-based Scope 2 total. We use the average-data method, as defined by the Greenhouse Gas Protocol. We calculate upstream emissions from purchased fuel, steam, heating, and cooling and emissions from transmission and distribution of steam, heating, and cooling, using 2023 DEFRA UK Government GHG Conversion Factors. We calculate emissions from upstream electricity by country using the 2023 IEA Emission Factors. We calculate emissions from electricity transmission and distribution losses using the 2023 IEA Emission Factors and, for the United States, the 2024 EPA eGRID Emission Factors. For upstream electricity, we calculate emissions using Scope 2 market-based data (i.e., by using the remaining electricity not addressed by renewable energy).

Upstream transportation and distribution

(7.8.1) Evaluation status

Select from:
☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

584000

(7.8.3) Emissions calculation methodology

Select all that apply
☑ Fuel-based method
☑ Distance-based method
☑ Site-specific method

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

99

(7.8.5) Please explain

Upstream transportation and distribution includes emissions generated primarily from transportation and warehousing of our consumer products and data center equipment. We calculate this category's emissions to also include the optional activities of (1) upstream emissions of transportation, and (2) transportation of data center equipment to decommission locations (which is an optional activity under Category 5). We use a combination of the fuel-based, distance-based, and site-specific methods, as defined by the Greenhouse Gas Protocol. For transportation emissions, we collect data from our logistics providers. These WTW GHG emissions are calculated based on fuel use or weight-distance data and routing associated with a shipment. Where actual logistics provider emissions data isn't available, we estimate WTW emissions using weight and distance data by shipment collected from our providers, using emission factors from the 2023 Global Logistics Emissions Council (GLEC) framework or EPA SmartWay carrier performance data. Where logistics provider weight and distance data isn't available, we estimate emissions based on reported data from other transportation providers and the weight shipped. For warehousing emissions, we collect energy and refrigerant leakage data directly from the warehouses and calculate emissions using LCA electricity and fuel emission factors from the Sphera Professional database 2023 and refrigerant emission factors from the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub. Where actual warehouse energy data isn't available, we estimate the energy using the 2018 Commercial Buildings Energy Consumption Survey (CBECS) data and the warehouse square footage allocated to Alphabet. Where actual warehouse refrigerant leakage data isn't available, we estimate refrigerant leakage based on the average leakage rate from available data.

Waste generated in operations

(7.8.1) Evaluation status

Select from:
☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

10000

(7.8.3) Emissions calculation methodology

Select all that apply
☑ Average data method
☑ Waste-type-specific method

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

0

(7.8.5) Please explain

Waste generated in operations includes emissions from solid waste generated at our offices and data centers that is either composted, recycled, landfilled, or incinerated (with or without energy recovery). We calculate this category's emissions to also include the optional activity of waste transportation, which is embedded in the emission factors we use. We use a combination of the waste-type-specific method and the average-data method, as defined by the Greenhouse Gas Protocol. The waste generation data comes from a combination of data from invoices and on-site measurements. Where actual waste data isn't available for a specific facility, we estimate waste tonnage using waste container size and pickup frequency, actual waste data

from similar facilities, or historical waste data from the same facility. We use waste type- and disposal type-specific emission factors from the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub for U.S. activity and the 2023 DEFRA UK Government GHG Conversion Factors for non-U.S. activity.

Business travel

(7.8.1) Evaluation status

Select from:
☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

283000

(7.8.3) Emissions calculation methodology

Select all that apply
☑ Spend-based method
☑ Fuel-based method
☑ Distance-based method

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

7

(7.8.5) Please explain

Business travel includes emissions from business-related air, rail, bus, personal vehicle, taxi, rideshare, shuttle, and rental car travel, including emissions from relocation travel. We use a combination of the distance-, fuel-, and spend-based calculation methods, as defined by the Greenhouse Gas Protocol. We collect all travel data through either our online booking system or a third-party travel agency. We calculate emissions from air, rail, taxi, rideshare, non-U.S. personal vehicle, and non-U.S. shuttle travel using 2023 DEFRA UK Government GHG Conversion Factors. We calculate emissions from car rental, U.S. personal vehicle, and U.S. shuttle travel using emission factors from the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub.

Employee commuting

(7.8.1) Evaluation status

Select from:
☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

113000

(7.8.3) Emissions calculation methodology

Select all that apply
☑ Distance-based method

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

0

(7.8.5) Please explain

Employee commuting, including teleworking includes emissions from the transport of our full-time employees between their homes and their worksites by passenger car (i.e., carpool, dropoff, taxi, rideshare, or single-occupied vehicle), rail, bus, motorcycle, and gas-powered scooter. We calculate this category's emissions to also include the optional activity of teleworking. We use the distance-based method, as defined by the Greenhouse Gas Protocol. We survey our employees to determine typical commuting and teleworking patterns and apply these patterns to our global employee population. We use a mode-specific commuting distance obtained from the American Public Transportation Association's 2021 Fact Book and the U.S. Department of Transportation's 2022 National Household Travel Survey. We calculate employee commuting emissions using mode-specific emission factors from the 2023 EPA Center for Corporate Climate Leadership GHG Emission Factors Hub. We account for the home energy emissions generated by our full-time employees working remotely by applying the estimation methodology outlined in EcoAct's 2020 Homeworking Emissions white paper to our annual average teleworking workforce. For more details, see our 2024 (FY2023) Independent Accountants' Review Report.

Upstream leased assets

(7.8.1) Evaluation status

Select from:
☑ Not relevant, explanation provided

(7.8.5) Please explain

We do not have significant emissions from upstream leased assets.

Downstream transportation and distribution

(7.8.1) Evaluation status

Select from:
☑ Not relevant, explanation provided

(7.8.5) Please explain

Emissions associated with downstream transportation and distribution were estimated to be de minimis relative to our overall footprint.

Processing of sold products

(7.8.1) Evaluation status

Select from:
☑ Not relevant, explanation provided

(7.8.5) Please explain

We do not sell intermediate goods that require further processing.

Use of sold products

(7.8.1) Evaluation status

Select from:
☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

0

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Methodology for direct use phase emissions, please specify**:** See the "Please explain" section for more details

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

0

(7.8.5) Please explain

Use of sold products includes downstream emissions generated by Google's flagship consumer devices sold in the reporting period. Flagship consumer devices are products that can provide their main functionality without connection to another product. For example, this generally doesn't include accessories such as cases. We calculate emissions from these activities using laboratory power draw measurements, data on use patterns, common industry assumptions on product lifetimes, and LCA electricity emission factors from the 2023 Sphera LCA for Experts database. We present emissions from use of sold products in "Other (upstream)."

End of life treatment of sold products

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

0

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Average data method

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

0

(7.8.5) Please explain

End-of-life treatment of sold products includes downstream emissions associated with the end-of-life treatment of Google's flagship consumer devices sold in the reporting period. We use the average-data method, as defined by the Greenhouse Gas Protocol. We calculate end-of-life emissions through our LCA process, using emission factors from the 2023 Sphera LCA for Experts database. Our annual assessments continue to identify this category to be one that doesn't have significant life-cycle impact. We continue to develop programs to extend the life of our sold products and also to ensure efficient management of end-of-life materials. We present emissions from end-of-life treatment of sold products in "Other (upstream)."

Downstream leased assets

(7.8.1) Evaluation status

Select from:

☑ Not relevant, explanation provided

(7.8.5) Please explain

We do not have significant emissions from downstream leased assets.

Franchises

(7.8.1) Evaluation status

Select from:
☑ Not relevant, explanation provided

(7.8.5) Please explain

We do not have franchises.

Investments

(7.8.1) Evaluation status

Select from:
☑ Not relevant, explanation provided

(7.8.5) Please explain

As defined by the GHG Protocol, we do not have investments relevant to this category.

Other (upstream)

(7.8.1) Evaluation status

Select from:
☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

2993000

(7.8.3) Emissions calculation methodology

Select all that apply
☑ Hybrid method
☑ Average data method
☑ Methodology for direct use phase emissions, please specify**:** See the "Please explain" section of Category 11 for more details

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

47

(7.8.5) Please explain

This category includes certain emissions from Category 2, Category 11, and Category 12 as an aggregated subtotal for business reasons. See more details in the respective category explanations above.

Other (downstream)

(7.8.1) Evaluation status

Select from:
☑ Not relevant, explanation provided

(7.8.5) Please explain

We do not have significant emissions from other relevant downstream activities.
[Fixed row]

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

	Verification/assurance status
Scope 1	*Select from:* ☑ Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	*Select from:* ☑ Third-party verification or assurance process in place
Scope 3	*Select from:* ☑ Third-party verification or assurance process in place

[Fixed row]

(7.9.1) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Row 1

(7.9.1.1) Verification or assurance cycle in place

Select from:
☑ Annual process

(7.9.1.2) Status in the current reporting year

Select from:
☑ Complete

(7.9.1.3) Type of verification or assurance

Select from:
☑ Limited assurance

(7.9.1.4) Attach the statement

alphabet-fy2023-environmental-indicators-assurance-letter.pdf

(7.9.1.5) Page/section reference

Pages 1 to 7

(7.9.1.6) Relevant standard

Select from:
☑ Attestation standards established by AICPA (AT105)

(7.9.1.7) Proportion of reported emissions verified (%)

100
[Add row]

(7.9.2) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Row 1

(7.9.2.1) Scope 2 approach

Select from:
☑ Scope 2 location-based

(7.9.2.2) Verification or assurance cycle in place

Select from:
☑ Annual process

(7.9.2.3) Status in the current reporting year

Select from:
☑ Complete

(7.9.2.4) Type of verification or assurance

Select from:
☑ Limited assurance

(7.9.2.5) Attach the statement

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(7.9.2.6) Page/ section reference

Pages 1 to 7

(7.9.2.7) Relevant standard

Select from:
☑ Attestation standards established by AICPA (AT105)

(7.9.2.8) Proportion of reported emissions verified (%)

100

Row 2

(7.9.2.1) Scope 2 approach

Select from:
☑ Scope 2 market-based

(7.9.2.2) Verification or assurance cycle in place

Select from:
☑ Annual process

(7.9.2.3) Status in the current reporting year

Select from:
☑ Complete

(7.9.2.4) Type of verification or assurance

Select from:
☑ Limited assurance

(7.9.2.5) Attach the statement

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(7.9.2.6) Page/ section reference

Pages 1 to 7

(7.9.2.7) Relevant standard

Select from:
☑ Attestation standards established by AICPA (AT105)

(7.9.2.8) Proportion of reported emissions verified (%)

100
[Add row]

(7.9.3) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Row 1

(7.9.3.1) Scope 3 category

Select all that apply
☑ Scope 3: Business travel
☑ Scope 3: Employee commuting

(7.9.3.2) Verification or assurance cycle in place

Select from:
☑ Annual process

(7.9.3.3) Status in the current reporting year

Select from:
☑ Complete

(7.9.3.4) Type of verification or assurance

Select from:
☑ Limited assurance

(7.9.3.5) Attach the statement

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(7.9.3.6) Page/section reference

Pages 1 to 7

(7.9.3.7) Relevant standard

Select from:
☑ Attestation standards established by AICPA (AT105)

(7.9.3.8) Proportion of reported emissions verified (%)

100
[Add row]

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

Select from:
☑ Increased

(7.10.1) 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 renewable energy consumption

(7.10.1.1) Change in emissions (metric tons CO2e)

276300

(7.10.1.2) Direction of change in emissions

Select from:
☑ Decreased

(7.10.1.3) Emissions value (percentage)

11

(7.10.1.4) Please explain calculation

In 2023, we reported Scope 2 location-based emissions of approximately 9.3 million tCO2e, which doesn't take into account our renewable energy procurement, and Scope 2 market-based emissions of approximately 3.4 million tCO2e. This means that through our PPAs, in 2023, we achieved a reduction in our emissions from our electricity use of approximately 5.8 million tCO2e. In 2022, through our PPAs, we achieved a reduction in our emissions from our electricity use of approximately 5.6 million tCO2e. We arrived at this total, 276,300 tCO2e, by assessing the difference between our emissions reduced from PPAs in 2023 (location-based Scope 2 emissions minus market-based Scope 2 emissions) and the emissions reduced from renewable energy PPAs in 2022. In 2022, our total Scope 1 and market-based Scope 2 emissions were 2,583,400 tCO2e. Therefore we arrived at this percentage decrease as follows: (276,300 / 2,583,400) x 100 = 11%. Through our PPAs, we achieved a 63% reduction in the emissions from our electricity use in 2023. And from 2011 to 2023, our carbon-free energy purchasing has resulted in cumulative emissions savings of more than 36 million tCO2e. Despite our efforts on carbon-free energy, our reported Scope 2 emissions increased in 2023. For more details, see the "Change in output" row.

Other emissions reduction activities

(7.10.1.1) Change in emissions (metric tons CO2e)

20400

(7.10.1.2) Direction of change in emissions

Select from:
☑ Decreased

(7.10.1.3) Emissions value (percentage)

0.8

(7.10.1.4) Please explain calculation

In addition to our renewable energy purchases, we continued to expand our portfolio of LEED-certified office space as well as to implement other efficiency and emission reduction initiatives, such as making operational improvements to office buildings and improving transportation programs. Some examples of these initiatives are included in Question 7.55.2. Through these building energy efficiency initiatives and our employee commuting program, we saw a reduction of approximately 20,400 tCO2e. In 2022, our total Scope 1 and market-based Scope 2 emissions were 2,583,400 tCO2e. Therefore we arrived at this percentage decrease as follows: (20,400 / 2,583,400) x 100 = 0.8%. We have done our best to estimate the contribution from our emissions reduction activities, but the actual numbers could be different.

Change in output

(7.10.1.1) Change in emissions (metric tons CO2e)

919400

(7.10.1.2) Direction of change in emissions

Select from:
☑ Increased

(7.10.1.3) Emissions value (percentage)

36

(7.10.1.4) Please explain calculation

As a large and complex multi-national company, there are many factors impacting our emissions and it's not possible to isolate any one particular factor and quantify it exactly. Compared to 2022, we reduced our Scope 1 emissions by 13% due to building electrification and decreases in emissions from transportation and data center generator use. Compared to 2022, our Scope 2 (market-based) emissions—which originate primarily from our data center electricity consumption—increased by 37%, despite considerable efforts and progress on carbon-free energy. This was due to data center electricity consumption outpacing our

ability to bring more CFE projects online, specifically in the United States and Asia-Pacific region, CFE contracts terminating prior to those projects becoming operational, and the current mismatch between our approach to CFE and the GHG Protocol's Scope 2 guidance. This change in output was calculated by taking our 2023 Scope 1 and market-based Scope 2 emissions minus the 2022 Scope 1 and market-based Scope 2 emissions, divided by the 2022 Scope 1 and market-based Scope 2 emissions, then multiplied by 100. Therefore we arrived at this percentage increase as follows: (919,400 / 2,583,400) x 100 = 36%.
[Fixed row]

(7.10.2) Are your emissions performance calculations in 7.10 and 7.10.1 based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Select from:
☑ Market-based

(7.12) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

Select from:
☑ Yes

(7.12.1) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)
	18700

[Fixed row]

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

Select from:
☑ Yes

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

Row 1

(7.15.1.1) Greenhouse gas

Select from:
☑ CO2

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

54800

(7.15.1.3) GWP Reference

Select from:
☑ IPCC Fourth Assessment Report (AR4 - 100 year)

Row 2

(7.15.1.1) Greenhouse gas

Select from:
☑ CH4

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

200

(7.15.1.3) GWP Reference

Select from:
☑ IPCC Fourth Assessment Report (AR4 - 100 year)

Row 3

(7.15.1.1) Greenhouse gas

Select from:
☑ N2O

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

200

(7.15.1.3) GWP Reference

Select from:
☑ IPCC Fourth Assessment Report (AR4 - 100 year)

Row 4

(7.15.1.1) Greenhouse gas

Select from:
☑ HFCs

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

24200

(7.15.1.3) GWP Reference

Select from:
☑ IPCC Fourth Assessment Report (AR4 - 100 year)
[Add row]

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

Select all that apply
☑ By business division

(7.17.1) Break down your total gross global Scope 1 emissions by business division.

	Business division	Scope 1 emissions (metric ton CO2e)
Row 1	*Alphabet Inc.*	*79400*

[Add row]

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

Select all that apply
☑ By business division

(7.20.1) Break down your total gross global Scope 2 emissions by business division.

	Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Row 1	*Alphabet Inc.*	*9252900*	*3423400*

[Add row]

(7.22) Break down your gross Scope 1 and Scope 2 emissions between your consolidated accounting group and other entities included in your response.

Consolidated accounting group

(7.22.1) Scope 1 emissions (metric tons CO2e)

79400

(7.22.2) Scope 2, location-based emissions (metric tons CO2e)

9252900

(7.22.3) Scope 2, market-based emissions (metric tons CO2e)

3423400

(7.22.4) Please explain

We report emissions for Alphabet Inc. and its subsidiaries' data centers, offices, and other assets under our operational control.

All other entities

(7.22.1) Scope 1 emissions (metric tons CO2e)

0

(7.22.2) Scope 2, location-based emissions (metric tons CO2e)

0

(7.22.3) Scope 2, market-based emissions (metric tons CO2e)

0

(7.22.4) Please explain

See above
[Fixed row]

(7.23) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?

Select from:
☑ Yes

(7.23.1) Break down your gross Scope 1 and Scope 2 emissions by subsidiary.

Row 1

(7.23.1.1) Subsidiary name

Google Spain SL

(7.23.1.2) Primary activity

Select from:
☑ Web-based services

(7.23.1.3) Select the unique identifier you are able to provide for this subsidiary

Select all that apply
☑ No unique identifier

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

200

(7.23.1.13) Scope 2, location-based emissions (metric tons CO2e)

1159

(7.23.1.14) Scope 2, market-based emissions (metric tons CO2e)

0
[Add row]

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

Select from:
☑ More than 0% but less than or equal to 5%

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

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	*Select from:* ☑ Yes

Consumption of purchased or acquired electricity	*Select from:* ☑ Yes
Consumption of purchased or acquired heat	*Select from:* ☑ Yes
Consumption of purchased or acquired steam	*Select from:* ☑ Yes
Consumption of purchased or acquired cooling	*Select from:* ☑ Yes
Generation of electricity, heat, steam, or cooling	*Select from:* ☑ Yes

[Fixed row]

(7.30.1) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

Consumption of fuel (excluding feedstock)

(7.30.1.1) Heating value

Select from:
☑ LHV (lower heating value)

(7.30.1.2) MWh from renewable sources

68300

(7.30.1.3) MWh from non-renewable sources

232900

(7.30.1.4) Total (renewable and non-renewable) MWh

301200

Consumption of purchased or acquired electricity

(7.30.1.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

15672000

(7.30.1.3) MWh from non-renewable sources

9580600

(7.30.1.4) Total (renewable and non-renewable) MWh

25252600

Consumption of purchased or acquired heat

(7.30.1.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

0

(7.30.1.3) MWh from non-renewable sources

278500

(7.30.1.4) Total (renewable and non-renewable) MWh

278500

Consumption of purchased or acquired steam

(7.30.1.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

0

(7.30.1.3) MWh from non-renewable sources

14500

(7.30.1.4) Total (renewable and non-renewable) MWh

14500

Consumption of purchased or acquired cooling

(7.30.1.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

0

(7.30.1.3) MWh from non-renewable sources

53000

(7.30.1.4) Total (renewable and non-renewable) MWh

53000

Consumption of self-generated non-fuel renewable energy

(7.30.1.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

10700

(7.30.1.4) Total (renewable and non-renewable) MWh

10700

Total energy consumption

(7.30.1.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

15750900

(7.30.1.3) MWh from non-renewable sources

10159600

(7.30.1.4) Total (renewable and non-renewable) MWh

25910500
[Fixed row]

(7.30.6) 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	*Select from:* ☑ Yes
Consumption of fuel for the generation of heat	*Select from:* ☑ Yes
Consumption of fuel for the generation of steam	*Select from:* ☑ No
Consumption of fuel for the generation of cooling	*Select from:* ☑ No
Consumption of fuel for co-generation or tri-generation	*Select from:* ☑ No

[Fixed row]

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

Sustainable biomass

(7.30.7.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

Other biomass

(7.30.7.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

Other renewable fuels (e.g. renewable hydrogen)

(7.30.7.1) Heating value

Select from:
☑ LHV

(7.30.7.2) Total fuel MWh consumed by the organization

68300

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

This represents renewable diesel (i.e. 100% renewable with no fossil fuels) not used for self-generation.

Coal

(7.30.7.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

Oil

(7.30.7.1) Heating value

Select from:
☑ LHV

(7.30.7.2) Total fuel MWh consumed by the organization

136800

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

Gas

(7.30.7.1) Heating value

Select from:
☑ LHV

(7.30.7.2) Total fuel MWh consumed by the organization

96100

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

Other non-renewable fuels (e.g. non-renewable hydrogen)

(7.30.7.1) Heating value

Select from:
☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

Total fuel

(7.30.7.1) Heating value

Select from:
☑ LHV

(7.30.7.2) Total fuel MWh consumed by the organization

301200

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0
[Fixed row]

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

Electricity

(7.30.9.1) Total Gross generation (MWh)

54500

(7.30.9.2) Generation that is consumed by the organization (MWh)

54500

(7.30.9.3) Gross generation from renewable sources (MWh)

10800

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

10800

Heat

(7.30.9.1) Total Gross generation (MWh)

93200

(7.30.9.2) Generation that is consumed by the organization (MWh)

93200

(7.30.9.3) Gross generation from renewable sources (MWh)

0

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

0

Steam

(7.30.9.1) Total Gross generation (MWh)

0

(7.30.9.2) Generation that is consumed by the organization (MWh)

0

(7.30.9.3) Gross generation from renewable sources (MWh)

0

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

0

Cooling

(7.30.9.1) Total Gross generation (MWh)

0

(7.30.9.2) Generation that is consumed by the organization (MWh)

0

(7.30.9.3) Gross generation from renewable sources (MWh)

0

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

0

[Fixed row]

(7.30.16) Provide a breakdown by country/area of your electricity/heat/steam/cooling consumption in the reporting year.

Argentina

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Australia

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Austria

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Belgium

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Brazil

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Canada

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Chile

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

China

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Colombia

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Croatia

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Czechia

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Denmark

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Finland

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

France

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Ghana

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Germany

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Greece

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Hong Kong SAR, China

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Hungary

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

India

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Indonesia

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Ireland

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Israel

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Italy

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Japan

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Kenya

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Lithuania

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Malaysia

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Mexico

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Netherlands

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

New Zealand

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Nigeria

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Norway

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Peru

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Philippines

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Poland

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Portugal

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Republic of Korea

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Romania

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Singapore

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Slovakia

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

South Africa

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Spain

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Sweden

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Switzerland

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Taiwan, China

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Thailand

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Turkey

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

United Arab Emirates

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

United Kingdom of Great Britain and Northern Ireland

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

United States of America

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00
[Fixed row]

(7.30.17) Provide details of your organization's renewable electricity purchases in the reporting year by country/area.

Row 1

(7.30.17.1) Country/area of consumption of purchased renewable electricity

Select from:
☑ United States of America

(7.30.17.2) Sourcing method

Select from:
☑ Physical power purchase agreement (physical PPA) with a grid-connected generator

(7.30.17.3) Renewable electricity technology type

Select from:
☑ Renewable electricity mix, please specify**:** Wind, Solar, Hydropower

(7.30.17.4) Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

11875400

(7.30.17.5) Tracking instrument used

Select from:
☑ US-REC

(7.30.17.6) Country/area of origin (generation) of purchased renewable electricity

Select from:
☑ United States of America

(7.30.17.7) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:
☑ Yes

(7.30.17.8) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2010

(7.30.17.9) Vintage of the renewable energy/attribute (i.e. year of generation)

Select from:
☑ 2023

(7.30.17.10) Supply arrangement start year

2010

(7.30.17.11) Ecolabel associated with purchased renewable electricity

Select from:
☑ No additional, voluntary label

(7.30.17.12) Comment

In addition to MWhs from PPAs, this row includes MWhs from other sourcing methods.

Row 2

(7.30.17.1) Country/area of consumption of purchased renewable electricity

Select from:
☑ Chile

(7.30.17.2) Sourcing method

Select from:
☑ Project-specific contract with an electricity supplier

(7.30.17.3) Renewable electricity technology type

Select from:
☑ Renewable electricity mix, please specify**:** Wind, Solar

(7.30.17.4) Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

336200

(7.30.17.5) Tracking instrument used

Select from:
☑ Other, please specify**:** Environmental Attributes Attestation

(7.30.17.6) Country/area of origin (generation) of purchased renewable electricity

Select from:
☑ Chile

(7.30.17.7) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:
☑ Yes

(7.30.17.8) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2022

(7.30.17.9) Vintage of the renewable energy/attribute (i.e. year of generation)

Select from:
☑ 2022

(7.30.17.10) Supply arrangement start year

2022

(7.30.17.11) Ecolabel associated with purchased renewable electricity

Select from:
☑ No additional, voluntary label

Row 3

(7.30.17.1) Country/area of consumption of purchased renewable electricity

Select from:
☑ Taiwan, China

(7.30.17.2) Sourcing method

Select from:
☑ Project-specific contract with an electricity supplier

(7.30.17.3) Renewable electricity technology type

Select from:
☑ Solar

(7.30.17.4) Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

4100

(7.30.17.5) Tracking instrument used

Select from:
☑ T-REC

(7.30.17.6) Country/area of origin (generation) of purchased renewable electricity

Select from:
☑ Taiwan, China

(7.30.17.7) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:
☑ Yes

(7.30.17.8) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2023

(7.30.17.9) Vintage of the renewable energy/attribute (i.e. year of generation)

Select from:
☑ 2023

(7.30.17.10) Supply arrangement start year

2023

(7.30.17.11) Ecolabel associated with purchased renewable electricity

Select from:
☑ No additional, voluntary label

Row 4

(7.30.17.1) Country/area of consumption of purchased renewable electricity

Select from:
☑ Belgium

(7.30.17.2) Sourcing method

Select from:
☑ Physical power purchase agreement (physical PPA) with a grid-connected generator

(7.30.17.3) Renewable electricity technology type

Select from:
☑ Wind

(7.30.17.4) Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

330000

(7.30.17.5) Tracking instrument used

Select from:
☑ GO

(7.30.17.6) Country/area of origin (generation) of purchased renewable electricity

Select from:
☑ Belgium

(7.30.17.7) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:
☑ Yes

(7.30.17.8) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2020

(7.30.17.9) Vintage of the renewable energy/attribute (i.e. year of generation)

Select from:
☑ 2022

(7.30.17.10) Supply arrangement start year

2020

(7.30.17.11) Ecolabel associated with purchased renewable electricity

Select from:
☑ No additional, voluntary label

(7.30.17.12) Comment

We selected Belgium in the 'Country/area of renewable electricity consumption', however, the renewable electricity from these projects is consumed in the European market, including Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, and the United Kingdom.

Row 5

(7.30.17.1) Country/area of consumption of purchased renewable electricity

Select from:
☑ Denmark

(7.30.17.2) Sourcing method

Select from:
☑ Physical power purchase agreement (physical PPA) with a grid-connected generator

(7.30.17.3) Renewable electricity technology type

Select from:
☑ Solar

(7.30.17.4) Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

218700

(7.30.17.5) Tracking instrument used

Select from:
☑ GO

(7.30.17.6) Country/area of origin (generation) of purchased renewable electricity

Select from:

☑ Denmark

(7.30.17.7) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:
☑ Yes

(7.30.17.8) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2020

(7.30.17.9) Vintage of the renewable energy/attribute (i.e. year of generation)

Select from:
☑ 2022

(7.30.17.10) Supply arrangement start year

2020

(7.30.17.11) Ecolabel associated with purchased renewable electricity

Select from:
☑ No additional, voluntary label

(7.30.17.12) Comment

We selected Denmark in the 'Country/area of renewable electricity consumption', however, the renewable electricity from these projects is consumed in the European market, including Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, and the United Kingdom.

Row 6

(7.30.17.1) Country/area of consumption of purchased renewable electricity

Select from:
☑ Finland

(7.30.17.2) Sourcing method

Select from:
☑ Physical power purchase agreement (physical PPA) with a grid-connected generator

(7.30.17.3) Renewable electricity technology type

Select from:
☑ Wind

(7.30.17.4) Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

1169300

(7.30.17.5) Tracking instrument used

Select from:
☑ GO

(7.30.17.6) Country/area of origin (generation) of purchased renewable electricity

Select from:
☑ Finland

(7.30.17.7) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:
☑ Yes

(7.30.17.8) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2019

(7.30.17.9) Vintage of the renewable energy/attribute (i.e. year of generation)

Select from:
☑ 2022

(7.30.17.10) Supply arrangement start year

2019

(7.30.17.11) Ecolabel associated with purchased renewable electricity

Select from:
☑ No additional, voluntary label

(7.30.17.12) Comment

In addition to MWhs from PPAs, this row includes MWhs from another sourcing method. We selected Finland in the 'Country/area of renewable electricity consumption', however, the renewable electricity from these projects is consumed in the European market, including Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, and the United Kingdom.

Row 7

(7.30.17.1) Country/area of consumption of purchased renewable electricity

Select from:
☑ Germany

(7.30.17.2) Sourcing method

Select from:
☑ Project-specific contract with an electricity supplier

(7.30.17.3) Renewable electricity technology type

Select from:
☑ Wind

(7.30.17.4) Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

331700

(7.30.17.5) Tracking instrument used

Select from:
☑ GO

(7.30.17.6) Country/area of origin (generation) of purchased renewable electricity

Select from:
☑ Germany

(7.30.17.7) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:
☑ Yes

(7.30.17.8) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

1998

(7.30.17.9) Vintage of the renewable energy/attribute (i.e. year of generation)

Select from:
☑ 2022

(7.30.17.10) Supply arrangement start year

2023

(7.30.17.11) Ecolabel associated with purchased renewable electricity

Select from:
☑ No additional, voluntary label

(7.30.17.12) Comment

We selected Germany in the 'Country/area of renewable electricity consumption', however, the renewable electricity from these projects is consumed in the European market, including Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, and the United Kingdom.

Row 8

(7.30.17.1) Country/area of consumption of purchased renewable electricity

Select from:
☑ Netherlands

(7.30.17.2) Sourcing method

Select from:
☑ Financial (virtual) power purchase agreement (VPPA)

(7.30.17.3) Renewable electricity technology type

Select from:
☑ Renewable electricity mix, please specify**:** Wind, Solar

(7.30.17.4) Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

246600

(7.30.17.5) Tracking instrument used

Select from:
☑ GO

(7.30.17.6) Country/area of origin (generation) of purchased renewable electricity

Select from:
☑ Netherlands

(7.30.17.7) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:
☑ Yes

(7.30.17.8) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2016

(7.30.17.9) Vintage of the renewable energy/attribute (i.e. year of generation)

Select from:
☑ 2023

(7.30.17.10) Supply arrangement start year

2016

(7.30.17.11) Ecolabel associated with purchased renewable electricity

Select from:
☑ No additional, voluntary label

(7.30.17.12) Comment

In addition to MWhs from PPAs, this row includes MWhs from other sourcing methods. We selected Netherlands in the 'Country/area of renewable electricity consumption', however, the renewable electricity from these projects is consumed in the European market, including Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary,

Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, and the United Kingdom.

Row 9

(7.30.17.1) Country/area of consumption of purchased renewable electricity

Select from:
☑ Norway

(7.30.17.2) Sourcing method

Select from:
☑ Physical power purchase agreement (physical PPA) with a grid-connected generator

(7.30.17.3) Renewable electricity technology type

Select from:
☑ Wind

(7.30.17.4) Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

45400

(7.30.17.5) Tracking instrument used

Select from:
☑ GO

(7.30.17.6) Country/area of origin (generation) of purchased renewable electricity

Select from:
☑ Norway

(7.30.17.7) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:
☑ Yes

(7.30.17.8) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2017

(7.30.17.9) Vintage of the renewable energy/attribute (i.e. year of generation)

Select from:
☑ 2023

(7.30.17.10) Supply arrangement start year

2017

(7.30.17.11) Ecolabel associated with purchased renewable electricity

Select from:
☑ No additional, voluntary label

(7.30.17.12) Comment

We selected Norway in the 'Country/area of renewable electricity consumption', however, the renewable electricity from these projects is consumed in the European market, including Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, and the United Kingdom.

Row 10

(7.30.17.1) Country/area of consumption of purchased renewable electricity

Select from:
☑ Sweden

(7.30.17.2) Sourcing method

Select from:
☑ Physical power purchase agreement (physical PPA) with a grid-connected generator

(7.30.17.3) Renewable electricity technology type

Select from:
☑ Wind

(7.30.17.4) Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

536400

(7.30.17.5) Tracking instrument used

Select from:
☑ GO

(7.30.17.6) Country/area of origin (generation) of purchased renewable electricity

Select from:
☑ Sweden

(7.30.17.7) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:
☑ Yes

(7.30.17.8) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2015

(7.30.17.9) Vintage of the renewable energy/attribute (i.e. year of generation)

Select from:
☑ 2023

(7.30.17.10) Supply arrangement start year

2015

(7.30.17.11) Ecolabel associated with purchased renewable electricity

Select from:
☑ No additional, voluntary label

(7.30.17.12) Comment

In addition to MWhs from PPAs, this row includes MWhs from another sourcing method. We selected Sweden in the 'Country/area of renewable electricity consumption', however, the renewable electricity from these projects is consumed in the European market, including Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, and the United Kingdom.

Row 11

(7.30.17.1) Country/area of consumption of purchased renewable electricity

Select from:
☑ United Kingdom of Great Britain and Northern Ireland

(7.30.17.2) Sourcing method

Select from:
☑ Financial (virtual) power purchase agreement (VPPA)

(7.30.17.3) Renewable electricity technology type

Select from:
☑ Wind

(7.30.17.4) Renewable electricity consumed via selected sourcing method in the reporting year (MWh)

578100

(7.30.17.5) Tracking instrument used

Select from:
☑ REGO

(7.30.17.6) Country/area of origin (generation) of purchased renewable electricity

Select from:
☑ United Kingdom of Great Britain and Northern Ireland

(7.30.17.7) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:
☑ Yes

(7.30.17.8) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2022

(7.30.17.9) Vintage of the renewable energy/attribute (i.e. year of generation)

Select from:
☑ 2022

(7.30.17.10) Supply arrangement start year

2022

(7.30.17.11) Ecolabel associated with purchased renewable electricity

Select from:
☑ No additional, voluntary label

(7.30.17.12) Comment

We selected United Kingdom in the 'Country/area of renewable electricity consumption', however, the renewable electricity from these projects is consumed in the European market, including Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, and the United Kingdom.
[Add row]

(7.30.18) Provide details of your organization's low-carbon heat, steam, and cooling purchases in the reporting year by country/area.

	Sourcing method
Row 1	*Select from:* ☑ None (no purchases of low-carbon heat, steam, or cooling)

[Add row]

(7.45) 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.

Row 1

(7.45.1) Intensity figure

0.0000114

(7.45.2) Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

3502800

(7.45.3) Metric denominator

Select from:
☑ unit total revenue

(7.45.4) Metric denominator: Unit total

307394000000

(7.45.5) Scope 2 figure used

Select from:
☑ Market-based

(7.45.6) % change from previous year

25

(7.45.7) Direction of change

Select from:
☑ Increased

(7.45.8) Reasons for change

Select all that apply
☑ Change in renewable energy consumption

(7.45.9) Please explain

Compared to 2022, our Scope 2 (market-based) emissions—which originate primarily from our data center electricity consumption—increased by 37%, despite considerable efforts and progress on carbon-free energy. This was due to data center electricity consumption outpacing our ability to bring more CFE projects online, specifically in the United States and Asia-Pacific region, CFE contracts terminating prior to those projects becoming operational, and the current mismatch between our approach to CFE and the GHG Protocol's Scope 2 guidance. For more details, see the Scope 2 emissions section in our 2024 Google Environmental Report: https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf The year-over-year rate of change for Scope 2 emissions was greater than the year-over-year change in total revenue.

Row 2

(7.45.1) Intensity figure

19.02

(7.45.2) Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

3502800

(7.45.3) Metric denominator

Select from:
☑ full time equivalent (FTE) employee

(7.45.4) Metric denominator: Unit total

184134

(7.45.5) Scope 2 figure used

Select from:
☑ Market-based

(7.45.6) % change from previous year

29

(7.45.7) Direction of change

Select from:
☑ Increased

(7.45.8) Reasons for change

Select all that apply
☑ Change in renewable energy consumption

(7.45.9) Please explain

Compared to 2022, our Scope 2 (market-based) emissions—which originate primarily from our data center electricity consumption—increased by 37%, despite considerable efforts and progress on carbon-free energy. This was due to data center electricity consumption outpacing our ability to bring more CFE projects online, specifically in the United States and Asia-Pacific region, CFE contracts terminating prior to those projects becoming operational, and the current mismatch between our approach to CFE and the GHG Protocol's Scope 2 guidance. For more details, see the Scope 2 emissions section in our 2024 Google Environmental Report: https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf The year-over-year rate of change for Scope 2 emissions was greater than the year-over-year change in average annual FTEs.

Row 3

(7.45.1) Intensity figure

0.1352

(7.45.2) Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

3502800

(7.45.3) Metric denominator

Select from:
☑ Other, please specify**:** Megawatt-hour of energy consumed

(7.45.4) Metric denominator: Unit total

25910500

(7.45.5) Scope 2 figure used

Select from:
☑ Market-based

(7.45.6) % change from previous year

17

(7.45.7) Direction of change

Select from:
☑ Increased

(7.45.8) Reasons for change

Select all that apply
☑ Change in renewable energy consumption

(7.45.9) Please explain

Compared to 2022, our Scope 2 (market-based) emissions—which originate primarily from our data center electricity consumption—increased by 37%, despite considerable efforts and progress on carbon-free energy. This was due to data center electricity consumption outpacing our ability to bring more CFE projects online, specifically in the United States and Asia-Pacific region, CFE contracts terminating prior to those projects becoming operational, and the current mismatch between our approach to CFE and the GHG Protocol's Scope 2 guidance. For more details, see the Scope 2 emissions section in our 2024 Google Environmental Report: https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf The year-over-year rate of change for Scope 2 emissions was greater than the year-over-year change in energy consumption.
[Add row]

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

Row 1

(7.52.1) Description

Select from:
☑ Energy usage

(7.52.2) Metric value

1.1

(7.52.3) Metric numerator

Noncomputing overhead data center energy use

(7.52.4) Metric denominator (intensity metric only)

Energy used to power IT equipment

(7.52.5) % change from previous year

0

(7.52.6) Direction of change

Select from:
☑ No change

(7.52.7) Please explain

Power usage effectiveness (PUE) is a standard industry ratio that compares the amount of non-computing overhead energy (used for things like cooling and power distribution) to the amount of energy used to power IT equipment. A PUE of 2.0 means that for every watt of IT power, an additional watt is consumed to cool and distribute power to the IT equipment. A PUE closer to

1.0 means nearly all the energy is used for computing. In 2023, the average annual PUE for our global fleet of data centers was 1.10, compared with the industry average of 1.58—meaning that Google data centers use about 5.8 times less overhead energy. We measure and monitor PUE and each quarter, we publish PUE data on our public website. For more information, see: https://www.google.com/about/datacenters/efficiency/
[Add row]

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

Select all that apply
☑ Absolute target

(7.53.1) Provide details of your absolute emissions targets and progress made against those targets.

Row 1

(7.53.1.1) Target reference number

Select from:
☑ Abs 1

(7.53.1.2) Is this a science-based target?

Select from:
☑ Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science Based Targets initiative in the next two years

(7.53.1.4) Target ambition

Select from:
☑ 1.5°C aligned

(7.53.1.5) Date target was set

10/26/2021

(7.53.1.6) Target coverage

Select from:
☑ Organization-wide

(7.53.1.7) Greenhouse gases covered by target

Select all that apply
☑ Carbon dioxide (CO2)
☑ Methane (CH4)
☑ Nitrous oxide (N2O)
☑ Hydrofluorocarbons (HFCs)

(7.53.1.8) Scopes

Select all that apply
☑ Scope 1
☑ Scope 2
☑ Scope 3

(7.53.1.9) Scope 2 accounting method

Select from:
☑ Market-based

(7.53.1.10) Scope 3 categories

Select all that apply
☑ Other (upstream)
☑ Scope 3, Category 6 – Business travel
☑ Other (downstream)
☑ Scope 3, Category 7 – Employee commuting
☑ Scope 3, Category 14 – Franchises
☑ Scope 3, Category 11 – Use of sold products
☑ Scope 3, Category 15 – Investments
☑ Scope 3, Category 8 - Upstream leased assets
☑ Scope 3, Category 2 – Capital goods
☑ Scope 3, Category 13 – Downstream leased assets
☑ Scope 3, Category 1 – Purchased goods and services
☑ Scope 3, Category 9 – Downstream transportation and distribution
☑ Scope 3, Category 10 – Processing of sold products
☑ Scope 3, Category 3 – Fuel- and energy- related activities (not included in Scope 1 or 2)
☑ Scope 3, Category 5 – Waste generated in operations
☑ Scope 3, Category 12 – End-of-life treatment of sold products
☑ Scope 3, Category 4 – Upstream transportation and distribution

(7.53.1.11) End date of base year

12/31/2019

(7.53.1.12) Base year Scope 1 emissions covered by target (metric tons CO2e)

81900

(7.53.1.13) Base year Scope 2 emissions covered by target (metric tons CO2e)

835500

(7.53.1.14) Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)

2676000

(7.53.1.15) Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)

2378000

(7.53.1.16) Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)

381000

(7.53.1.17) Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)

508000

(7.53.1.18) Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)

11000

(7.53.1.19) Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)

369000

(7.53.1.20) Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)

173000

(7.53.1.21) Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)

0

(7.53.1.22) Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)

0

(7.53.1.23) Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)

0

(7.53.1.24) Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)

0

(7.53.1.25) Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)

0

(7.53.1.26) Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)

0

(7.53.1.27) Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)

0

(7.53.1.28) Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)

0

(7.53.1.29) Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)

2258000

(7.53.1.30) Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)

0

(7.53.1.31) Base year total Scope 3 emissions covered by target (metric tons CO2e)

8754000.000

(7.53.1.32) Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

9671400.000

(7.53.1.33) Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

(7.53.1.34) Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

(7.53.1.35) Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)

100

(7.53.1.36) Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)

100

(7.53.1.37) Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

100

(7.53.1.38) Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)

100

(7.53.1.39) Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)

100

(7.53.1.40) Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)

100

(7.53.1.41) Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)

100

(7.53.1.42) Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)

100

(7.53.1.43) Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)

100

(7.53.1.44) Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)

100

(7.53.1.45) Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)

100

(7.53.1.46) Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)

100

(7.53.1.47) Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)

100

(7.53.1.48) Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)

100

(7.53.1.49) Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)

100

(7.53.1.50) Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)

100

(7.53.1.51) Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)

100

(7.53.1.52) Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

100

(7.53.1.53) Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

(7.53.1.54) End date of target

12/31/2030

(7.53.1.55) Targeted reduction from base year (%)

50

(7.53.1.56) Total emissions at end date of target covered by target in all selected Scopes (metric tons CO2e)

4835700.000

(7.53.1.57) Scope 1 emissions in reporting year covered by target (metric tons CO2e)

79400

(7.53.1.58) Scope 2 emissions in reporting year covered by target (metric tons CO2e)

3423400

(7.53.1.59) Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)

4038000

(7.53.1.60) Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)

1605000

(7.53.1.61) Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)

1186000

(7.53.1.62) Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)

584000

(7.53.1.63) Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)

10000

(7.53.1.64) Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)

283000

(7.53.1.65) Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)

113000

(7.53.1.66) Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)

0

(7.53.1.67) Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)

0

(7.53.1.68) Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)

0

(7.53.1.69) Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)

0

(7.53.1.70) Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)

0

(7.53.1.71) Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)

0

(7.53.1.72) Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)

0

(7.53.1.73) Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)

0

(7.53.1.74) Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)

2993000

(7.53.1.75) Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)

0

(7.53.1.76) Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)

10812000.000

(7.53.1.77) Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

14314800.000

(7.53.1.78) Land-related emissions covered by target

Select from:

☑ No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

(7.53.1.79) % of target achieved relative to base year

-96.02

(7.53.1.80) Target status in reporting year

Select from:
☑ Underway

(7.53.1.82) Explain target coverage and identify any exclusions

We aim to reduce 50% of our combined Scope 1, Scope 2 (market-based), and Scope 3 absolute emissions (compared to our 2019 base year) by 2030, and we plan to invest in nature-based and technology-based carbon removal solutions to neutralize our remaining emissions. This target covers emissions from our operations and value chain.

(7.53.1.83) Target objective

This target is part of our goal to reach net-zero emissions across all of our operations and value chain by 2030.

(7.53.1.84) Plan for achieving target, and progress made to the end of the reporting year

Our total GHG emissions were 14.3 million tCO2e, representing a 13% year-over-year increase and a 48% increase compared to our 2019 target base year—primarily due to increases in data center energy consumption and supply chain emissions. We're working toward this goal in two key ways: first, we're focused on reducing emissions across our operations and value chain (including advancing 24/7 CFE), and after reducing our emissions, we're addressing our residual emissions with carbon removals. As our business and industry continue to evolve, we expect our total GHG emissions to rise before dropping toward our absolute emissions reduction target. We've analyzed our operations and value chain to pinpoint specific levers that will drive carbon reductions across Scope 1, Scope 2, and Scope 3 emissions. While our reduction efforts are crucial, they alone won't get us all the way to our net zero goal. Examples of some of our key emissions reduction levers include: electrification, refrigerant mitigation, renewable fuels, energy management and carbon-free energy procurement, supplier engagement, minimizing embodied carbon, and sustainable travel. As an example, in 2023, we maintained our CFE percentage for Google's global portfolio of data centers and offices at 64% from 2022 to 2023, despite growth in electricity demand over this period.

(7.53.1.85) Target derived using a sectoral decarbonization approach

Select from:
☑ No
[Add row]

(7.54) Did you have any other climate-related targets that were active in the reporting year?

Select all that apply
☑ Targets to increase or maintain low-carbon energy consumption or production
☑ Net-zero targets

(7.54.1) Provide details of your targets to increase or maintain low-carbon energy consumption or production.

Row 1

(7.54.1.1) Target reference number

Select from:
☑ Low 1

(7.54.1.2) Date target was set

12/03/2012

(7.54.1.3) Target coverage

Select from:

☑ Organization-wide

(7.54.1.4) Target type: energy carrier

Select from:
☑ Electricity

(7.54.1.5) Target type: activity

Select from:
☑ Consumption

(7.54.1.6) Target type: energy source

Select from:
☑ Renewable energy source(s) only

(7.54.1.7) End date of base year

12/31/2015

(7.54.1.8) Consumption or production of selected energy carrier in base year (MWh)

5221500

(7.54.1.9) % share of low-carbon or renewable energy in base year

48

(7.54.1.10) End date of target

12/31/2023

(7.54.1.11) % share of low-carbon or renewable energy at end date of target

100

(7.54.1.12) % share of low-carbon or renewable energy in reporting year

100

(7.54.1.13) % of target achieved relative to base year

100.00

(7.54.1.14) Target status in reporting year

Select from:
☑ Achieved

(7.54.1.16) Is this target part of an emissions target?

No

(7.54.1.17) Is this target part of an overarching initiative?

Select all that apply
☑ RE100

(7.54.1.19) Explain target coverage and identify any exclusions

In 2012, we set a long-term goal to purchase enough renewable energy to match all the electricity we consume globally on an annual basis. In 2023, we matched 100% of the annual electricity consumption of our global operations with renewable energy purchases for the seventh consecutive year. Reaching our 100% renewable purchasing goal means that Google buys on an annual basis the same amount of megawatt-hours (MWh) of renewable energy as the amount of MWh of electricity that we consume for our operations around the world. Matching 100% renewable energy is just the beginning. Achieving 24/7 CFE is a far more complex and technically challenging pursuit than annually matching our energy use with renewable energy purchases, but we see this effort as crucial to a bigger picture: scaling new, global solutions for clean energy. In 2015, Google joined the RE100 initiative—an initiative led by the Climate Group and CDP—as well as the We Mean Business coalition, committing to procure 100% of our electricity from renewable sources.

(7.54.1.20) Target objective

We started addressing our Scope 2 emissions in 2010 with our first power purchase agreement from a new wind farm, and in 2017, we became the first major company to match 100% of the annual electricity consumption of our global operations with renewable energy purchases.

(7.54.1.22) List the actions which contributed most to achieving this target

We're buying electricity directly from new clean energy projects through various methods depending on the market, including: contracting directly via long-term PPAs; working with utilities or developers to buy and deliver carbon-free energy; structuring energy supply contracts with energy providers through the CFE Manager model; and making targeted investments in renewable energy to enable additional projects on the grids where we operate. From 2010 to 2023, we signed more than 115 agreements to purchase approximately 14 gigawatts of clean energy generation capacity. The total GW figure represents primarily PPAs, and includes some generation capacity from targeted renewable energy investments where we also receive EACs. Actual generation capacity may vary from the signed amounts based on changes during construction or project terminations.

Row 2

(7.54.1.1) Target reference number

Select from:
☑ Low 2

(7.54.1.2) Date target was set

09/14/2020

(7.54.1.3) Target coverage

Select from:
☑ Organization-wide

(7.54.1.4) Target type: energy carrier

Select from:
☑ Electricity

(7.54.1.5) Target type: activity

Select from:
☑ Consumption

(7.54.1.6) Target type: energy source

Select from:
☑ Low-carbon energy source(s)

(7.54.1.7) End date of base year

12/31/2019

(7.54.1.8) Consumption or production of selected energy carrier in base year (MWh)

12237200.0

(7.54.1.9) % share of low-carbon or renewable energy in base year

61.0

(7.54.1.10) End date of target

12/31/2030

(7.54.1.11) % share of low-carbon or renewable energy at end date of target

100

(7.54.1.12) % share of low-carbon or renewable energy in reporting year

64

(7.54.1.13) % of target achieved relative to base year

7.69

(7.54.1.14) Target status in reporting year

Select from:
☑ Underway

(7.54.1.16) Is this target part of an emissions target?

In 2021, we set an ambitious goal to reach net-zero emissions across all of our operations and value chain by 2030. We're working toward this goal in two key ways: first, we're focused on reducing emissions across our operations and value chain (including advancing 24/7 CFE), and after reducing our emissions, we're addressing our residual emissions with carbon removals. We set a goal to run on 24/7 carbon-free energy—every hour of every day on every grid where we operate—by 2030.

(7.54.1.17) Is this target part of an overarching initiative?

Select all that apply
☑ No, it's not part of an overarching initiative

(7.54.1.19) Explain target coverage and identify any exclusions

Low 2 represents our goal to run on 24/7 carbon-free energy on every grid where we operate by 2030. This is one of the ways in which we are working toward our net-zero emissions goal. We maintained our CFE percentage for Google's global portfolio of data centers and offices at 64% from 2022 to 2023, despite growth in electricity demand over this period. This represents the load-weighted average of carbon-free energy percentages across Google's global portfolio of data centers and offices (referred to as "Google CFE"). This metric is inclusive of third-party data centers, and it represents the clean energy purchased to meet our electricity needs, every hour of every day, within every grid where we operate. Carbon-free energy is any type of electricity generation that doesn't directly emit carbon dioxide, including (but not limited to) solar, wind, geothermal, hydropower, and

nuclear. Sustainable biomass and carbon capture and storage (CCS) are special cases considered on a case-by-case basis, but are often also considered carbon-free energy sources.

(7.54.1.20) Target objective

Our pursuit of 24/7 CFE remains one of our primary approaches to reducing our Scope 2 emissions.

(7.54.1.21) Plan for achieving target, and progress made to the end of the reporting year

We're working to achieve this goal through three main initiatives: purchasing carbon-free energy, accelerating new and improved technologies, and transforming the energy system through policy, partnerships, and advocacy. We maintained our CFE percentage for Google's global portfolio of data centers and offices at 64% from 2022 to 2023, despite growth in electricity demand over this period. While we had increases in both our contracted CFE as well as in the availability of CFE on many of the grids where we operate, progress was also impacted in part by project owners terminating some CFE projects prior to those projects becoming operational.
[Add row]

(7.54.3) Provide details of your net-zero target(s).

Row 1

(7.54.3.1) Target reference number

Select from:
☑ NZ1

(7.54.3.2) Date target was set

10/26/2021

(7.54.3.3) Target Coverage

Select from:
☑ Organization-wide

(7.54.3.4) Targets linked to this net zero target

Select all that apply
☑ Abs1

(7.54.3.5) End date of target for achieving net zero

12/31/2030

(7.54.3.6) Is this a science-based target?

Select from:
☑ Yes, we consider this a science-based target, but we have not committed to seek validation of this target by the Science Based Targets initiative within the next two years

(7.54.3.8) Scopes

Select all that apply
☑ Scope 1
☑ Scope 2
☑ Scope 3

(7.54.3.9) Greenhouse gases covered by target

Select all that apply

☑ Carbon dioxide (CO2)
☑ Methane (CH4)
☑ Nitrous oxide (N2O)
☑ Hydrofluorocarbons (HFCs)

(7.54.3.10) Explain target coverage and identify any exclusions

In 2021, we set a goal to reach net-zero emissions across all of our operations and value chain by 2030. To meet this goal, we aim to reduce 50% of our combined Scope 1, Scope 2 (market-based), and Scope 3 absolute emissions (compared to our 2019 base year) by 2030, and we plan to invest in nature-based and technology-based carbon removal solutions to neutralize our remaining emissions. Our net-zero goal is aligned with the IPCC's definition of "net zero emissions," which is "when anthropogenic emissions of greenhouse gasses to the atmosphere are balanced by anthropogenic removals over a specified period." We've formally committed to the Science Based Targets initiative (SBTi) to validate our absolute emissions reduction target.

(7.54.3.11) Target objective

We're working to accelerate the transition to a net-zero future, and we've taken significant steps over the past two decades to minimize our GHG emissions. In 2021, we set an ambitious goal to reach net-zero emissions across all of our operations and value chain by 2030. We're working toward this goal in two key ways: first, we're focused on reducing emissions across our operations and value chain (including advancing 24/7 CFE), and after reducing our emissions, we're addressing our residual emissions with carbon removals.

(7.54.3.12) Do you intend to neutralize any residual emissions with permanent carbon removals at the end of the target?

Select from:

☑ Yes

(7.54.3.13) Do you plan to mitigate emissions beyond your value chain?

Select from:

☑ Yes, and we have already acted on this in the reporting year

(7.54.3.14) Do you intend to purchase and cancel carbon credits for neutralization and/or beyond value chain mitigation?

Select all that apply

☑ Yes, we plan to purchase and cancel carbon credits for neutralization at the end of the target

(7.54.3.15) Planned milestones and/or near-term investments for neutralization at the end of the target

We aim to neutralize our residual emissions with high-quality carbon removal credits by 2030, and to do so in a way that maximizes our positive impact on global decarbonization. As of the end of 2023, we signed three carbon credit offtake deals representing a total purchase of approximately 62,500 tCO2e of removal credits, which are contracted for delivery by 2030. We recognize that this is just the beginning, and we look forward to accelerating our carbon removal efforts in the years to come. We'll continue evolving our approach to counterbalancing our residual emissions. In March 2024, Google pledged to match the U.S. Department of Energy's Carbon Dioxide Removal Purchase program dollar for dollar: through our own initiatives, we plan to contract for at least $35 million of carbon removal credits over the next 12 months following the announcement. For more details, see: https://blog.google/outreach-initiatives/sustainability/pledge-to-support-carbon-removal-solutions/

(7.54.3.16) Describe the actions to mitigate emissions beyond your value chain

In 2023, Google.org provided a $1 million grant to the Integrity Council on Voluntary Carbon Markets (ICVCM) to help them orient the market toward various high-integrity solutions with adequate certainty to merit support. This grant brings Google.org's cumulative contributions to strengthening carbon markets to more than $7 million as of the end of 2023. Additional examples of our policy advocacy and coalition engagements from 2023 include: - Google participated in many regulatory proceedings and dockets across the United States, collaborating with coalition partners to promote the cost-effective adoption of clean energy resources. - Google led discussions with the National Association of Regulatory Utility Commissioners and the National Association of State Energy Officials to discuss how Google's 24/7 CFE goal can be a supportive framework to drive cost-effective grid decarbonization. - In 2023, we worked with RE-Source to advocate for a stronger role for corporate clean energy buyers within Europe's evolving Electricity Market Design. These efforts led to the adoption of new measures promoting PPAs and improving renewable energy access for smaller buyers.

(7.54.3.17) Target status in reporting year

Select from:
☑ Underway

(7.54.3.19) Process for reviewing target

Our net-zero goal is a key tool by which we can help accelerate global decarbonization. To ensure our efforts maximize impact, we'll continue evaluating our plan on a regular basis to ensure it's rigorous, grounded in science, and realistic in light of evolving challenges and standards. The world's understanding of "net zero" remains in a dynamic state and is subject to refinement as global consensus develops. We'll proactively monitor the evolution of global standards to ensure our definition maintains general alignment while maximizing our positive impact on the planet.
[Add row]

(7.55) 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.

Select from:
☑ Yes

(7.55.1) 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*	
To be implemented	*0*	*0*
Implementation commenced	*0*	*0*
Implemented	*30*	*5849900*
Not to be implemented	*0*	

[Fixed row]

(7.55.2) Provide details on the initiatives implemented in the reporting year in the table below.

Row 1

(7.55.2.1) Initiative category & Initiative type

Transportation
☑ Employee commuting

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

14900

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply
☑ Scope 3 category 7: Employee commuting

(7.55.2.4) Voluntary/Mandatory

Select from:
☑ Voluntary

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

0

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

0

(7.55.2.7) Payback period

Select from:
☑ No payback

(7.55.2.8) Estimated lifetime of the initiative

Select from:
☑ Ongoing

(7.55.2.9) Comment

This initiative covers employee commuting. Our transportation team supports sustainable commuting options to help Googlers get to work—like offering shuttles and encouraging carpooling, public transit, biking, and walking. Google offers commuter shuttles to several of its campuses to reduce individual vehicle commuting. For 2023, our shuttle buses in the San Francisco Bay Area produced savings of approximately 14,900 tCO2e emissions. Monetary savings and investment required are confidential, so we've input $0. Google has many emissions reduction initiatives and we've chosen only a small subset to include here as examples of the activities we've implemented in the reporting year.

Row 2

(7.55.2.1) Initiative category & Initiative type

Energy efficiency in buildings
☑ Other, please specify**:** Various energy efficiency in buildings

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

5100

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply

☑ Scope 1

☑ Scope 2 (market-based)

(7.55.2.4) Voluntary/Mandatory

Select from:

☑ Voluntary

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

2927619

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

2822510

(7.55.2.7) Payback period

Select from:

☑ <1 year

(7.55.2.8) Estimated lifetime of the initiative

Select from:

☑ Ongoing

(7.55.2.9) Comment

Implementation of ongoing energy efficiency improvements in our San Francisco Bay Area offices. In 2023, eight individual projects were implemented. Google has many emissions reduction initiatives and we've chosen only a small subset to include here as examples of the activities we've implemented in the reporting year.

Row 3

(7.55.2.1) Initiative category & Initiative type

Energy efficiency in buildings

☑ Other, please specify**:** Various energy efficiency in buildings

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

200

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply

☑ Scope 2 (market-based)

(7.55.2.4) Voluntary/Mandatory

Select from:

☑ Voluntary

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

35961

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

0

(7.55.2.7) Payback period

Select from:
☑ No payback

(7.55.2.8) Estimated lifetime of the initiative

Select from:
☑ Ongoing

(7.55.2.9) Comment

In 2023, we rolled out nearly 20 energy conservation initiatives across our offices in the Asia-Pacific region, which we estimate helped reduce energy consumption by nearly 290 MWh, as compared to the prior year. Google has many emissions reduction initiatives and we've chosen only a small subset to include here as examples of the activities we've implemented in the reporting year.

Row 4

(7.55.2.1) Initiative category & Initiative type

Energy efficiency in buildings
☑ Lighting

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

200

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply
☑ Scope 2 (market-based)

(7.55.2.4) Voluntary/Mandatory

Select from:
☑ Voluntary

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

18221

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

30000

(7.55.2.7) Payback period

Select from:
☑ 1-3 years

(7.55.2.8) Estimated lifetime of the initiative

Select from:
☑ 16-20 years

(7.55.2.9) Comment

Small pilot to upgrade fluorescent fixtures to LEDs with smart controls at our Iowa data center. This represents progress made on this project in 2023. Google has many emissions reduction initiatives and we've chosen only a small subset to include here as examples of the activities we've implemented in the reporting year.

Row 5

(7.55.2.1) Initiative category & Initiative type

Low-carbon energy consumption
☑ Low-carbon electricity mix

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

5829500

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply
☑ Scope 2 (market-based)

(7.55.2.4) Voluntary/Mandatory

Select from:
☑ Voluntary

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

0

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

0

(7.55.2.7) Payback period

Select from:
☑ No payback

(7.55.2.8) Estimated lifetime of the initiative

Select from:
☑ 16-20 years

(7.55.2.9) Comment

As of the end of 2023, we achieved seven consecutive years of 100% renewable energy matching on a global and annual basis. Through our power purchase agreements (PPAs), we achieved a 63% reduction in the emissions from our electricity use in 2023. This represents the difference between our Scope 2 location-based emissions and Scope 2 market-based emissions. Google has many emissions reduction initiatives and we've chosen only a small subset to include here as examples of the activities we've implemented in the reporting year.
[Add row]

(7.55.3) What methods do you use to drive investment in emissions reduction activities?

Row 1

(7.55.3.1) Method

Select from:
☑ Dedicated budget for other emissions reduction activities

(7.55.3.2) Comment

We've calculated the cost per ton for emissions reduction levers and have used that to inform prioritization.
[Add row]

(7.74) Do you classify any of your existing goods and/or services as low-carbon products?

Select from:
☑ Yes

(7.74.1) Provide details of your products and/or services that you classify as low-carbon products.

Row 1

(7.74.1.1) Level of aggregation

Select from:
☑ Product or service

(7.74.1.2) Taxonomy used to classify product(s) or service(s) as low-carbon

Select from:
☑ No taxonomy used to classify product(s) or service(s) as low carbon

(7.74.1.3) Type of product(s) or service(s)

Other
☑ Other, please specify**:** Fuel-efficient routing in Google Maps

(7.74.1.4) Description of product(s) or service(s)

As an information company, we bring accurate, authoritative information to people to help them make key decisions in their lives, including information about sustainability. We're developing tools to help everyone reduce their environmental impact, understand the planet, and take sustainable action. For more details, see https://sustainability.google/empowering-individuals/. For the past two years, Google has provided information to over 1 billion users to help them make more sustainable choices annually through our products. We achieved this by offering sustainability features like fuel-efficient routing in Google Maps and more transportation options in Search, such as train routes. By building AI models on the emissions profile of different vehicle*

*types, fuel-efficient routing in Google Maps analyzes traffic, terrain, and the vehicle's engine (gas/petrol, diesel, hybrid, or electric) to find the most efficient route. This may mean fewer stops for gas engines, routes favoring highway speeds for diesel vehicles, and maximizing downhill stretches for electric cars to boost regenerative braking—all while providing the same or similar ETA. – *Unique, signed-in Google users that were provided information to make a more sustainable choice by at least one sustainable product feature.*

(7.74.1.5) Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Select from:
☑ Yes

(7.74.1.6) Methodology used to calculate avoided emissions

Select from:
☑ Other, please specify**:** For more information about how we calculated the emissions impact of fuel-efficient routing, see more details below.

(7.74.1.7) Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Select from:
☑ Use stage

(7.74.1.8) Functional unit used

Vehicle kilometers

(7.74.1.9) Reference product/service or baseline scenario used

To calculate enabled emissions reductions, we tally the fuel usage from the chosen fuel-efficient routes and subtract it from the predicted fuel consumption that would have occurred on the fastest route without fuel-efficient routing, and apply adjustments for factors such as: CO2e factors, fleet mix factors, well-to-wheels factors, and powertrain mismatch factors. See more details below.

(7.74.1.10) Life cycle stage(s) covered for the reference product/service or baseline scenario

Select from:
☑ Use stage

(7.74.1.11) Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

2900000

(7.74.1.12) Explain your calculation of avoided emissions, including any assumptions

Google uses an AI prediction model to estimate the expected fuel or energy consumption for each route option when users request driving directions. We identify the route that we predict will consume the least amount of fuel or energy. If this route is not already the fastest one and it offers meaningful energy and fuel savings with only a small increase in driving time, we recommend it to the user. To calculate enabled emissions reductions, we tally the fuel usage from the chosen fuel-efficient routes and subtract it from the predicted fuel consumption that would have occurred on the fastest route without fuel-efficient routing and apply adjustments for factors such as: CO2e factors, fleet mix factors, well-to-wheels factors, and powertrain mismatch factors. We then input the estimated prevented emissions into the EPA's Greenhouse Gas Equivalencies Calculator to calculate equivalent cars off the road for a year. The cumulative figure covers estimated emissions prevented after fuel-efficient routing was launched, from October 2021 through December 2023. Enabled emissions reductions estimates include inherent uncertainty due to factors that include the lack of primary data and precise information about real-world actions and their effects. These factors contribute to a range of possible outcomes, within which we report a central value. Fuel-efficient routing was first launched in the U.S. in 2021. In 2023, we started rolling out fuel-efficient routing to India and Indonesia, adding to our existing

coverage in the United States, Canada, Egypt, and nearly 40 European countries. As of the end of 2023, fuel-efficient routing is estimated to have helped enable more than 2.9 million metric tons of GHG emissions reductions since the feature launched in late 2021—equivalent to taking approximately 650,000 fuel-based cars off the road for a year. Explanation of revenue %: We are unable to provide precise estimates for this figure, so we have put 1% for the 'revenue generated from low carbon product(s) or service(s) as % of total revenue in the reporting year'.

(7.74.1.13) Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

1
[Add row]

(7.79) Has your organization canceled any project-based carbon credits within the reporting year?

Select from:
☑ Yes

(7.79.1) Provide details of the project-based carbon credits canceled by your organization in the reporting year.

Row 1

(7.79.1.1) Project type

Select from:
☑ Landfill gas

(7.79.1.2) Type of mitigation activity

Select from:
☑ Emissions reduction

(7.79.1.3) Project description

Project: Oneida Herkimer Landfill located in Ava, NY (CAR674) One of Google's long-standing carbon offset project partners is Oneida-Herkimer Solid Waste Management Authority. This Authority operates a landfill in upstate New York, the Oneida-Herkimer Regional Landfill, which serves rural communities. This is a methane gas destruction project. For more details, see: https://sustainability.google/progress/projects/landfill-NewYork/

(7.79.1.4) Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

121600

(7.79.1.5) Purpose of cancelation

Select from:
☑ Voluntary offsetting

(7.79.1.6) Are you able to report the vintage of the credits at cancelation?

Select from:
☑ Yes

(7.79.1.7) Vintage of credits at cancelation

2021

(7.79.1.8) Were these credits issued to or purchased by your organization?

Select from:
☑ Purchased

(7.79.1.9) Carbon-crediting program by which the credits were issued

Select from:
☑ CAR (The Climate Action Reserve)

(7.79.1.10) Method the program uses to assess additionality for this project

Select all that apply
☑ Consideration of legal requirements
☑ Other, please specify**:** Performance standard test (by meeting a performance threshold)

(7.79.1.11) Approaches by which the selected program requires this project to address reversal risk

Select all that apply
☑ No risk of reversal

(7.79.1.12) Potential sources of leakage the selected program requires this project to have assessed

Select all that apply
☑ Upstream/downstream emissions

(7.79.1.13) Provide details of other issues the selected program requires projects to address

Permanence: Greenhouse gases prevented from entering the atmosphere should be stopped permanently. We need to be certain that the projects we invest in are not temporary methods of carbon reduction or greenhouse gas sequestration. If there is significant risk that the stored carbon would be released through events such as a forest fire or a leak from sequestered carbon, the project would need to account for this, such as through insurance or a buffer of additional reductions. Verifiability: An objective third-party—someone other than the project developer and Google—must be able to look at project data and confirm that the carbon reductions are real and credible. The third-party verifier determines the proper baseline for greenhouse gas reductions and verifies that the reductions adhere to strict monitoring and reporting standards.

(7.79.1.14) Please explain

This is an example of carbon credits purchased as part of meeting the requirements for International Living Future Institute (ILFI) Living Building Challenge (LBC) Certifications for select buildings. For more details about our approach and due diligence for carbon credits, see https://static.googleusercontent.com/media/www.google.com/en//green/pdfs/google-carbon-offsets.pdf
[Add row]

C10. Environmental performance - Plastics

(10.1) Do you have plastics-related targets, and if so what type?

(10.1.1) Targets in place

Select from:
☑ Yes

(10.1.2) Target type and metric

Plastic packaging
☑ Other plastic packaging target, please specify**:** Make product packaging 100% plastic-free by 2025

Plastic goods/products
☑ Other plastic goods/products target, please specify**:** Use recycled or renewable material in at least 50% of plastic used across our consumer hardware product portfolio by 2025

(10.1.3) Please explain

We have a goal to eliminate plastic from our hardware product packaging by 2025. We're working to achieve this target by designing Pixel, Nest, Chromecast, and Fitbit packaging to minimize the use of plastic. For new Google products launched and manufactured in 2023, our packaging was at least 99% plastic-free. By focusing on fiber-based materials, we're also making our packaging more easily recyclable. We'll continue to work with suppliers to create plastic-free packaging solutions that are protective and aesthetic. We set a target to use recycled or renewable material in at least 50% of plastic used across our consumer hardware product portfolio by 2025, prioritizing recycled plastic where we can. 34% of the plastic Google used in products manufactured in 2023 was recycled content.** This represents a decrease in overall recycled content of plastics across our portfolio from 41% in 2022,*** which was due to changes in our product mix—some product types use less plastic than others, which can reduce opportunities to use recycled content. For more details, see Google's 2024 Environmental Report: https://www.gstatic.com/gumdrop/sustainability/google-2024-environmental-report.pdf – *Based on total weight of new Google Pixel and Fitbit retail packaging (excluding adhesive materials and required plastic stickers) as shipped by Google. To meet the request of some retail partners, stickers and/or security tags are applied to some packaging variations and may contain plastic. **Based on total plastic weight of Google Pixel, Nest, Chromecast, and Fitbit products manufactured in 2023. This does not include plastics in printed circuit boards, labels, cables, connectors, electronic components and modules, optical components, electrostatic discharge (ESD) components, electromagnetic interference (EMI) components, films, coatings, and adhesives. ***Based on total plastic weight of Google Pixel, Nest, and Chromecast products manufactured in 2022. This does not include plastics in printed circuit boards, labels, cables, connectors, electronic components and modules, optical components, electrostatic discharge (ESD) components, electromagnetic interference (EMI) components, films, coatings, and adhesives. [Fixed row]*

C11. Environmental performance - Biodiversity

(11.2) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

(11.2.1) Actions taken in the reporting period to progress your biodiversity-related commitments

Select from:
☑ Yes, we are taking actions to progress our biodiversity-related commitments

(11.2.2) Type of action taken to progress biodiversity- related commitments

Select all that apply
☑ Land/water management
☑ Species management
[Fixed row]

(11.3) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
	Select from: ☑ Yes, we use indicators	*Select all that apply* ☑ State and benefit indicators ☑ Response indicators

[Fixed row]

C13. Further information & sign off

(13.1) Indicate if any environmental information included in your CDP response (not already reported in 7.9.1/2/3, 8.9.1/2/3/4, and 9.3.2) is verified and/or assured by a third party?

	Other environmental information included in your CDP response is verified and/or assured by a third party
	Select from: ☑ Yes

[Fixed row]

(13.1.1) Which data points within your CDP response are verified and/or assured by a third party, and which standards were used?

Row 1

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply
☑ Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change
☑ Base year emissions

(13.1.1.3) Verification/assurance standard

General standards
☑ Attestation Standards (AT-C Section 105 & 210/205) established by the American Institute of Certified Public Accountants (AICPA)

(13.1.1.4) Further details of the third-party verification/assurance process

Base year GHG emissions (including recalculation) were assured as part of our Independent Accountants' Review. Limited assurance was provided under the AICPA AT-C Sections 105 and 210.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

alphabet-fy2023-environmental-indicators-assurance-letter.pdf

Row 2

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply
☑ Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change
☑ Other data point in module 7, please specify**:** Biogenic emissions, carbon intensity metrics, and Scope 1 and Scope 2 emissions by gas type and by region

(13.1.1.3) Verification/assurance standard

General standards
☑ Attestation Standards (AT-C Section 105 & 210/205) established by the American Institute of Certified Public Accountants (AICPA)

(13.1.1.4) Further details of the third-party verification/assurance process

Our biogenic GHG emissions and Scope 1 and Scope 2 emissions by gas type and by region were externally assured as part of our Independent Accountants' Review. The following carbon intensity metrics are externally assured as part of our Independent Accountants' Review: Scope 1 + Scope 2 emissions intensity per unit of revenue, Scope 1 + Scope 2 emissions intensity per full-time equivalent employee (FTE), and Scope 1 + Scope 2 emissions intensity per MWh of energy consumed. Limited assurance was provided under the AICPA AT-C Sections 105 and 210.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

alphabet-fy2023-environmental-indicators-assurance-letter.pdf

Row 3

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply
☑ Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change
☑ Other data point in module 7, please specify**:** Energy consumption, Total electricity consumption, Percentage of electricity procured from renewable sources, and Total electricity and total renewable energy allocated by region

(13.1.1.3) Verification/assurance standard

General standards
☑ Attestation Standards (AT-C Section 105 & 210/205) established by the American Institute of Certified Public Accountants (AICPA)

(13.1.1.4) Further details of the third-party verification/assurance process

Total energy consumption, Total electricity consumption, our percentage of electricity procured from renewable energy sources, and Total electricity and total renewable energy allocated by region were externally assured as part of our Independent Accountants' Review. Limited assurance was provided under the AICPA AT-C Sections 105 and 210.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

alphabet-fy2023-environmental-indicators-assurance-letter.pdf
[Add row]

(13.2) 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.

(13.2.1) Additional information

For more information, see the resources below: Google Sustainability website: https://sustainability.google Google Sustainability reports: https://sustainability.google/reports/ Google Sustainability blog: https://blog.google/outreach-initiatives/sustainability
[Fixed row]

(13.3) Provide the following information for the person that has signed off (approved) your CDP response.

(13.3.1) Job title

Chief Sustainability Officer, Google

(13.3.2) Corresponding job category

Select from:
☑ Chief Sustainability Officer (CSO)
[Fixed row]