

Impact Study

Texas, US Data Center

2024



Google's Data Center Impact in Texas

Google's data centers in Texas are helping to rapidly grow the digital economy. They are what you rely on to pull up a map to a new restaurant, attend online classes, or access your healthcare records.

Google's digital infrastructure investments in Texas drive local economic development through job creation, promote environmental stewardship through carbon-free energy production, and foster thriving communities.

Since 2019, Google has invested more than [\\$2.7B in Texas' digital infrastructure](#). This Impact Study provides a summary of key economic, environmental, and social metrics that Google's digital infrastructure investments have had on Texas in recent years.

Economic

Google's investments in digital infrastructure in Texas support jobs in construction, engineering, and the service industry. Google's data center contribution to labor income in Texas is equal to supporting **~5,320 households in the state each year**.

~\$601M

Annual contribution to Texas's GDP¹ (2021-2023)

~4,690

Annual jobs supported (2021-2023)

Environmental

As part of Google's commitment to operate all of its data centers using carbon-free energy by 2030, Google signed a 15-year agreement in 2023 with Ørsted to **bring 150 MW of power from Helena Wind Farm**, an onshore wind farm located in Pawnee, Texas.

79% (2023) | 41% (2022)

Percentage of electricity matched with carbon-free energy^{2,3} supply at every hour of every day at Google's data centers in Texas

Social

Google's community investments include support to the Red Oak Independent School District's STEM⁴ program which helped empower ~200 students, **generating a ~\$3.20 social benefit for every Google-invested dollar** and fostering a more digitally skilled future workforce in Texas.

~\$1.4M

Invested in Texas communities surrounding Google's data centers in 2022 and 2023

This report provides a summary of Google's data center impact. The overall impact of all Google operations is significantly larger, encompassing contributions beyond data centers, including economic benefits from its platforms, products, and services used across various sectors.

Notes: 1. GDP stands for gross domestic product. 2. Google defines [carbon-free energy](#) (CFE) as 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. 3. Google's CFE is influenced by various factors, such as overall electricity usage, purchases of carbon-free energy, technological advancements, and changes in the broader energy landscape. 4. STEM stands for science, technology, engineering, and mathematics.

Economic Impact: 2021-2023¹



~\$601M

Annual Contribution
to Local GDP

Includes ~\$300M direct, ~\$135M indirect, and ~\$165M induced



~4,690

Annual
Jobs Supported²

Includes ~600 direct jobs, ~2,570 indirect, and ~1,525 induced



~\$384M

Annual
Labor Income

Includes ~\$90M direct, ~\$206M indirect, and ~\$89M induced

Google's contribution to Texas's GDP increased by ~74% between 2021 and 2023, compared to the state's overall GDP growth of ~11% during the same period.

Google's data center contribution to direct, indirect, and induced labor income in Texas is equal to supporting ~5,320 households in the state each year.

Top GDP Contributions



Professional, scientific, and technical services³

(26% of Total GDP Contribution from Google's investments in Texas)



Construction
(14%)



Other (various sectors such as real estate and manufacturing)
(60%)

Spotlight: Carbon-Free Energy

Google's investments in clean energy in Texas have created...



~\$25M

Annual
Contribution to
Local GDP



75

Annual Jobs
Supported



~\$7M

Annual Labor
Income

Direct: includes Google employees and contractors (incl. their payroll and benefits) and annual spend on Google's suppliers

Indirect: includes Google's suppliers' employees and contractors, the suppliers' payroll and benefits due to Google orders, and suppliers spend

Induced: includes impact generated by the household spending of Google's employees and their suppliers in their local economies

Notes: 1. GDP and labor income rounded to the nearest one-million; Jobs and household numbers rounded to the nearest multiple of five. 2. Google's support to jobs includes construction, engineering, networking, renewable energy jobs, security, and services, among others. 3. Includes computer systems, data processing, software services, and other computer-related facility management support, etc.

Environmental Impact: 2022 & 2023^{1,2}

79% (2023) vs. 41% (2023 Regional Grid)

41% (2022) vs. 41% (2022 Regional Grid)

24/7 Carbon-Free Energy (CFE)

Google has matched 100% of its global annual electricity consumption with renewable energy purchases, and has further committed to operating at 24/7 CFE by 2030. This means matching electricity demand with CFE supply every hour of every day.

1.13 (2023)

1.16 (2022)

vs. 1.58 (industry average)

Avg. Power Usage Effectiveness

Compared to the industry average, Google's Texas data centers are achieving an 78% reduction in overhead power usage. For every watt of power used to run servers and network equipment, only 0.13 watts are used to run supporting infrastructure like cooling and lighting.

Spotlight: Carbon-Free Energy

To advance Google's 24/7 CFE commitment, Google has contracted 2,800 MW of renewable energy in Texas as of 2024.

One of those contracts was signed in 2023 with Ørsted and brings 150 MW of power from Helena Wind Farm, a 268 MW onshore wind farm located in Pawnee, Texas, for the next 15 years.

In addition to providing clean energy to Google and an estimated 90,000 homes, 300 jobs were expected to be created in Bee County, Texas to build and operate the facility.

"Our long-standing data center efficiency efforts are important because our data centers represent the vast majority of our direct electricity use. Google's [global] data center consumption was more than 24 TWh in 2023 which translates to approximately 7-10% of global data center electricity consumption."

- 2023 & 2024 Google Environmental Reports

135.8M Gal. (2023)

93.3M Gal. (2022)

Water Consumption

Google strives to protect water quality and ecosystem health in the communities where it operates, including Texas.³

Sustainability Spotlight

Google is investing over \$1M to help restore the Longleaf pine forests in the Trinity River Watershed, in conjunction with Texan By Nature and the Texas Longleaf Team. By removing the understory of longleaf pine forests, the project will help restore the area and reduce evapotranspiration, enhancing the natural hydrological function of the longleaf systems.

Notes: 1. For more information on the environmental statistics, refer to the 2023 & 2024 Google Environmental Reports. 2. As applicable, the water consumption represents total water consumption across all data centers in the state; CFE and PUE are averages across data centers. 3. Google seeks to replenish 120% of the freshwater it consumes, on average, across its offices and data centers by 2030.

Social Impact: 2022 & 2023¹



~\$1.4M

Given to communities
in 2022 and 2023

Surrounding Google's data centers in Texas in addition to other Google.Org programs²



18

Organizations supported
in 2022 and 2023

Focused on education, workforce, and community development, among other areas



~\$3.20

Social benefit per
Google-invested dollar³

Based on STEM educational program⁴

Google invested ~\$1.4M in Texas communities, including:

Digital Literacy

In 2023, Google provided a total of \$200K to the public libraries in Red Oak and Midlothian to support digital literacy and fund new technology.



"The new public library will be a place of opportunity, particularly for students in Midlothian; this donation from

Google will help foster curiosity in learning. In addition to offering access to books, the new facility offers access to creative spaces and technology, inspiring exploration and experimentation.

We're thankful for Google's contribution to this community, and we cannot wait to see the impact the library will have on generations to come."

- Justin Coffman, Mayor of Midlothian

STEM Education

Since 2019, Google has provided nearly \$500K across the Midlothian and Red Oak Independent School Districts (ISD) to support educational opportunities, including:

- At Midlothian ISD, Google supported the expansion of mental health programming to help increase graduation rates among participating students.
- At Red Oak ISD, Google's funding helped expand STEM education programming, particularly in engineering and robotics topics. One of the programs reached 200 students, generating the social benefit referenced above.

Notes: 1. When applicable, numbers were rounded to the nearest thousand. 2. The amounts listed are in addition to other Google programs, like Grow with Google, Google.Org's Impact Challenge, and other initiatives. 3. This calculation is directional and represents Google's step toward understanding social value associated with its community investments. 4. Calculation based on Red Oak ISD's STEM programming.

The Google Differentiator

Google recognizes that its data center operations and value chain can be engines of economic, environmental, and social progress. Google aims for its investments to catalyze positive spillover effects within Texas.

Google thinks about its investments holistically.

Google recognizes that it can catalyze greater impact when it looks at its economic, environmental, and social efforts collectively, which is why Google's 2024 Impact Study in Texas articulates Google's impact across these three domains. As Google considers its future strategy in Texas, it will continue to look for opportunities to keep digital infrastructure secure and sustainable while driving local economic development, fostering thriving communities, and spurring environmental stewardship.

Google seeks to harness AI to drive innovation and accelerate climate action.

Google continues to invest in state-of-the-art infrastructure to support its artificial intelligence (AI) efforts and rapidly grow the digital economy in Texas. However, Google recognizes that these benefits also come with increased energy usage and emissions and might have unintended consequences if not properly managed. As part of its AI for Sustainability strategy, Google is taking steps to use AI to accelerate climate progress and through its AI Opportunity Agenda Google is providing recommendations for governments to amplify the positive impacts of AI for the broadest possible range of people.

Google seeks to engage directly with community members to advance and measure impact.

Google continues to work closely with community members in Texas to understand its impact and refine its strategy. This report represents a step toward measuring impact as Google moves from measuring inputs to measuring impact and value. This includes Google's approximation of a "social return on investment", intended to estimate the social value created per Google-invested dollar based on educational empowerment and future job opportunities. Google will continue to find ways to be more transparent and articulate its impact to local communities across all dimensions.

Thank you!

To the many community members and Googlers who strive to make Google's ambitious economic, environmental, and social goals a reality.

For additional information or any questions please reach out to:



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DISCLAIMER: This Impact Study was prepared by Deloitte Consulting LLP ("Deloitte") for Google LLC ("Google") during Fall 2024. The purpose of the study is to assess the economic, environmental, and social impacts of Google's data centers modeled from the years of 2021-2023. The modeling, analysis, and results shown as part of the impact are based on information provided directly by Google LLC, publicly available information, and third-party information. Any revisions to those data will affect the assessments shown as part of the study. To calculate economic impacts, this study used an input-output model developed by IMPLAN. In preparing this study, Deloitte has, without independent verification, relied on the accuracy of information made available by Google.