Impact Study

Ohio, US Data Center

2024

Google

Deloitte.

Google's Data Center Impact in Ohio

Google's data centers in Ohio 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 Ohio 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 $4.4B in Ohio's digital infrastructure, with an additional $2.3B announced in 2024. This Impact Study provides a summary of key economic, environmental, and social metrics that Google's digital infrastructure investments have had on Ohio in recent years.

Economic

Google's investments in digital infrastructure in Ohio support jobs in construction, engineering, and the service industry. Google's data center contribution to labor income in Ohio is equal to supporting **~17,080 households in the state each year.**

~$1,501M

Annual contribution to Ohio's GDP[1] (2021-2023)

~17,140

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 Purchase Power Agreement with EDP Renewables (EDPR) **to procure solar energy from over 80 solar projects throughout the US – with the first projects in Ohio.**

52% (2023) | 60% (2022)

Percentage of electricity matched with carbon-free energy[2,3] supply at every hour of every day at Google's data centers in Ohio

Social

Google's community investments include support to the Licking Heights Local Schools' STEM[4] program which helped empower the district's English Language Learner students, **generating a ~$18 social benefit for every Google-invested dollar** and fostering a diverse future workforce in Ohio.

~$2.9M

Invested in Ohio 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: 2021-2023[1]

~$1,501M

Annual Contribution to Local GDP

Includes ~$752M direct, ~$271M indirect, and ~$478M induced

~17,140

Annual Jobs Supported[2]

Includes ~405 direct jobs, ~12,145 indirect, and ~4,585 induced

~$1,123M

Annual Labor Income

Includes ~$41M direct, ~$828M indirect, and ~$253M induced

Google's contribution to **Ohio's GDP increased by ~95% between 2021 and 2023**, compared to the state's overall GDP growth of ~7% during the same period.

Google's data center contribution to direct, indirect, and induced labor income in Ohio is equal to supporting **~17,080 households in the state each year.**

Top GDP Contributions

Construction

(45% of Total GDP Contribution from Google's investments in Ohio)

Other (various sectors such as real estate and professional, scientific, and technical services[3])

(55%)

Spotlight: Small Businesses

Google achieved and exceeded its goal to reach **22% of its total spending in Columbus on Minority and Women-Owned Business Enterprises.** Due to the success of the diversity spending initiative, Google is expanding the work to projects in Lancaster and New Albany.

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]

52% *(2023)* vs. 41% *(2023 Regional Grid)*
60% *(2022)* vs. 40% *(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.

1.10 *(2023)*
1.14 *(2022)*
vs. 1.58 *(industry average)*

Avg. Power Usage Effectiveness

Compared to the industry average, Google's Ohio data centers are achieving an 83% reduction in overhead power usage. For every watt of power used to run servers and network equipment, only 0.10 watts are used to run supporting infrastructure like cooling and lighting.

Spotlight: Carbon Free Energy

To advance Google's 24/7 CFE commitment, in 2023, Google signed a Purchase Power Agreement with EDP Renewables (EDPR) to **procure around 650 MW of solar energy via over 80 solar projects** throughout the US. EDPR noted that this agreement is the biggest corporate sponsorship for distributed generation in the US.

The first projects will begin in Ohio, with targeted operation by the end of 2024.

In addition to the energy benefits, it will also **reduce electricity bills for ~25K low-to-moderate income families.**

"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

158.1M Gal. *(2023)*
49.6M Gal. *(2022)*

Water Consumption

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

Sustainability Spotlight

Google supports Green Columbus' development of the Franklin County **Tree Equity Score Analyzer** (TESA) designed to improve the "Tree Equity Score" of the Census block. Leveraging Google's data, TESA provides support in identifying tree planting and preservation strategies to help **advance health outcomes, improve heat mitigation, and create resilient communities.**

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 & 2023[1]

~$2.9M

Given to communities in 2022 and 2023

Surrounding Google's data centers in Ohio in addition to other Google.Org programs[2]

43

Organizations supported in 2022 and 2023

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

~$18

Social benefit per Google-invested dollar[3]

Based on STEM educational program[4]

Google invested ~$2.9M in Ohio communities, including:

Career Readiness

In 2023, Google Skilled Trades and Readiness program partnered with Columbus State Community College to **provide pre-employment training to students.**

- The five-week course is intended to provide a full-time job for participants within construction, including carpentry, mechanical, electrical, plumbing, and other skilled trades roles – many of which end up contributing **to building Google's data center in New Albany, Lancaster, and Columbus.**
- *"I thought my dreams were crushed and crashed and over with, kaboom. But that's not true.* ***Because dreams can be realized no matter how old you are."*** - Kelly Lee, graduate entering a new full-time position as a pre-apprentice in carpentry.

STEM Education

In 2023, Google gave over $49K to help students at Licking Heights Local Schools explore STEM careers.

- Google's investments helped **establish a robotics club and coding program** across five schools, generating the social benefit referenced above.
- Students felt empowered to demonstrate their learning. In particular, the **district's significant population of English Language Learners** (ELLs) took on leadership roles to showcase and teach their skills to others.

> *"This was such an* ***amazing opportunity for our students,*** *especially our ELL students, and ultimately our community...[it created] an* ***infectious excitement among students."***
>
> *-* ***Vicki Willett,*** *Technology Integration Specialist, Licking Heights Local Schools*

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 Licking Heights Local Schools programs.

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 Ohio.

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 Ohio articulates Google's impact across these three domains. As Google considers its future strategy in Ohio, 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 Ohio**. 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 Ohio 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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