

Impact Study

Oregon, US Data Center

2024



Google's Data Center Impact in Oregon

Google's data centers in Oregon 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 Oregon drive local economic development through job creation, promote environmental stewardship through carbon-free energy production, and foster thriving communities.

Since 2006, Google has invested more than [\\$1.8B in Oregon's digital infrastructure](#), with an [additional \\$600M invested in 2024](#). This Impact Study provides a summary of key economic, environmental, and social metrics that Google's digital infrastructure investments have had on Oregon in recent years.

Economic

Google's investments in digital infrastructure in Oregon support jobs in construction, engineering, and the service industry. Google's data center contribution to labor income in Oregon is equal to supporting **~3,355 households in the state each year**.

~\$366M

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

~3,050

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's second [campus in The Dalles](#) is the most energy-efficient in Google's fleet.

84% (2023) | 89% (2022)

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

Social

Google's community investments include support to the Columbia Gorge Education Service District's after school STEM⁴ program which helped empower low-income students, **generating a ~\$1.20 social benefit for every Google-invested dollar** and fostering a more digitally skilled future workforce in Oregon.

~\$788K

Invested in Oregon 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



~\$366M

Annual Contribution to Local GDP

Includes ~\$195M direct, ~\$73M indirect, and ~\$98M induced



~3,050

Annual Jobs Supported²

Includes ~490 direct jobs, ~1,665 indirect, and ~895 induced



~\$254M

Annual Labor Income

Includes ~\$56M direct, ~\$143M indirect, and ~\$55M induced

Google's contribution to Oregon's GDP increased by ~74% 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 Oregon is equal to supporting ~3,355 households in the state each year.

Top GDP Contributions



Professional, scientific, and technical services³

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



Construction
(20%)



Other (various sectors such as utilities and real estate)
(54%)

Spotlight: Circularity

Did you know that one of Google's data centers in The Dalles was a former aluminum smelter – in operation from 1958 to 2003? In fact, it was even added to the Superfund National Priority List in 1986.

Google's operations help with both reusing existing infrastructure and cleaning up our environment.

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}

84% (2023) vs. 84% (2023 Regional Grid)

89% (2022) vs. 89% (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.

1.09 (2023)

1.09 (2022)

vs. 1.58 (industry average)

Avg. Power Usage Effectiveness

Compared to the industry average, Google's Oregon data centers are achieving an 84% reduction in overhead power usage. For every watt of power used to run servers and network equipment, only 0.09 watts are used to run supporting infrastructure like cooling and lighting.

Spotlight: Water Resilience

As part of the smelter redevelopment (one of data centers in The Dalles was a former aluminum smelter), Google is investing \$28.5M to upgrade The Dalles' water and sewer infrastructure.

One of the projects includes an innovative Aquifer Storage and Recovery (ASR) system, which will pump excess surface water into an existing aquifer, allowing the City to use the water during drier months. Acting as an underground "savings account," the system will help bring resiliency to the area.

In addition, Google has transferred water rights at no cost to the City.

"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

302.4M Gal. (2023)

274.2M Gal. (2022)

Water Consumption

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

Sustainability Spotlight

As part of Google's Data Center Community Grants, Google has supported the Farmers Conservation Alliance (FCA) to improve its data systems. This funding helps irrigation districts and farmers better track and share water data to help them make better decisions on infrastructure adjustments and upgrades.

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 volume it consumes, on average, across its offices and data centers by 2030.

Social Impact: 2022 & 2023¹



~\$788K²

Given to communities
in 2022 and 2023

*Surrounding Google's data
centers in Oregon in addition to
other Google.Org programs³*



20

Organizations supported
in 2022 and 2023

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



~\$1.20

Social benefit per
Google-invested dollar⁴

*Based on STEM educational
program⁵*

Google invested ~\$788K² in Oregon communities, including:

Food Security

Since 2020, Google has given over \$615K to support programming at the Columbia Gorge Food Bank and Oregon Food Bank. Funds came from a combination of Google's Data Center Community Grants Program and Google.Org and aim to support:

- Renovation of a warehouse, including a new community room, to expand services to The Dalles and surrounding areas of Wasco, Sherman, and Hood River Counties.
- Farmers and gardeners to help feed their families and communities.
- Assistance to local indigenous peoples with food and propane.

STEM Education

Since 2019, Google has provided over \$235K to the Columbia Gorge Education Service District for afterschool programming. The program serves over 240 low-income students across 6 afterschool programs in Hood River and Wasco County.

- Google's investments helped to purchase STEM Engineering, Maker Club & Robotics Kits for the afterschool program, as well as provide professional development to afterschool teachers, generating the social benefit referenced above.

"Funding from Google allows us to increase our impact and ensure that all students in our region have equitable access to quality STEM experiences, both in and out of school."

-Julie Cucuel, Columbia Gorge STEM Hub

Notes: 1. When applicable, numbers were rounded to the nearest thousand. 2. In 2024, Google contributed more than \$550,000 to organizations in Oregon working to build climate resilience, strengthen the local economy, and improve health and educational outcomes for Oregonians. 3. The amounts listed are in addition to other Google programs, like Grow with Google, Google.Org's Impact Challenge, and other initiatives. 4. This calculation is directional and represents Google's step toward understanding social value associated with its community investments. 5. Calculation based on Columbia Gorge Education Service District program.

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 Oregon.

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