# Google Reports Rise in Greenhouse Gas Emissions Amid AI Expansion; Fervo Energy Secures Geothermal Power Agreements in California



### Google Reports Increased Greenhouse Gas Emissions for 2023 Amid AI Expansion

Google has disclosed a 13 percent increase in greenhouse gas emissions for 2023, largely driven by the growing energy demands of artificial intelligence (AI) and limited availability of renewable energy in Asia and parts of the United States. The company’s total emissions for the year reached 14,314,800 metric tons, showing a 48 percent rise since 2019.

The company's 2024 Environmental Report, released on July 2, provides detailed data on various categories of emissions:

* Scope 1 emissions (direct operations): Decreased by 13 percent.
* Scope 2 emissions (energy purchases): Increased by 37 percent.
* Scope 3 emissions (includes purchased goods like data center construction materials): Grew by 8 percent.

As Google aims for a net-zero target with a 50 percent reduction across all scopes by 2030, it also reports that its data centers consumed over 24 terawatt-hours of energy in 2023—a 17 percent increase from the previous year. The rise is largely attributed to AI, which has become more integrated into Google’s products.

In 2023, Google signed contracts for 4 gigawatts of new power projects and invested in enhancing its renewable energy portfolio, particularly in Asia. Other strategic focuses include model optimization, efficient infrastructure, and emissions reductions through renewable energy investments.

Google and Microsoft both highlight the challenge of balancing data center expansion with sustainability goals, with Microsoft's emissions also rising by 29.1 percent since 2020.

### California's Geothermal Energy Push

Fervo Energy has secured two power purchase agreements (PPAs) with Southern California Edison (SCE), totaling 320 megawatts of geothermal energy. This 15-year agreement aims to power 350,000 homes and support California's transition to a cleaner energy future. The power will come from Fervo Energy's 400-MW Cape Station project in southwest Utah, expected to have its first phase operational by 2026 and the second by 2028.

The agreements align with California's mid-term reliability (MTR) mandate issued in 2021, requiring 1,000 MW of non-weather-dependent, zero-emission energy to enhance grid reliability. Enhanced geothermal systems offer a stable base load, complementing wind and solar energy.

Fervo’s drilling technology, inspired by the oil and gas industry, has shown promise in reducing costs and drilling times. Fervo has already contracted 373 MW of renewable power from Cape Station and secured $244 million in funding. Moreover, a commercial pilot in Nevada began supplying power to Google’s data centers in November 2023.

In February 2023, the U.S. Department of Energy selected Fervo’s Utah project among three for potential funding up to $60 million, supporting advanced geothermal energy demonstration and contributing to the goal of 100 percent clean electricity by 2035.