

Google's Sustainability commitments

Use less energy

Enable customers to take advantage of energy-optimized data centers and efficient machine utilization

Google data centers **are more than 1.5 as energy efficient** than a typical enterprise data center, and compared to 5 years ago we deliver **3x the compute power for the same amount of electricity**

24/7 Carbon-free energy by 2030

Set the goal to completely decarbonize electricity

By 2030, we aim to **run on carbon-free energy at all our data centers, 24/7**

Net Zero carbon emissions by 2030

Set the goal to completely decarbonize electricity

By 2030, **reduce absolute emissions by 50%** from a 2019 baseline, and **source carbon removals to neutralize remaining emissions**

Google Data Center Emissions for informed action

Data center emissions monitored by



Workload

customer, AI, product



Location

local renewable mix



Hour

hourly renewable mix

enables Google to integrate sustainability into internal decision-making and optimization

Energy-Efficient Hardware



Google's Trillium TPUs are over 67% more energy-efficient than TPU v5e

↓ kWh/FLOP

Carbon-Aware Compute



↓ CO₂e/kWh

Customer Sustainability Tools

Cloud Carbon
Footprint Report &
Region Picker

Region *	Zone *
us-west4 (Las Vegas)	
Europe	
europe-north1 (Finland) 🌿	Low CO ₂
europe-west1 (Belgium) 🌿	Low CO ₂

↓ CO₂e/kWh