Sustainability
at Google Cloud

Kel Markert
Cloud Geographer

Google Cloud

At Google, we build technology that helps people do more for the planet

Sustainability is no longer a nice-to-have: Industries and governments are investing funds while changing policies and regulation to make it a priority

Nine Ways Biden's $2 Trillion Plan Will Tackle Climate Change

Inside Climate News, March 2021

The S.E.C. moves closer to enacting a sweeping climate disclosure rule.

The New York Times, March 2022

Green Finance: Barclays to become Net Zero bank by 2050

Retail Banker International, July 2020

Deloitte announces $1 billion investment in global Sustainability & Climate practice

PR News, April 2022

Environment Bill: UK businesses to be banned from sourcing through deforesters overseas

Edie, November 2020

The CPG Industry Is Moving to Sustainable Packaging

Wiser, January 2022

Sustainability makes business sense

- **Growing Market** for Sustainable Goods and Services

- Being **Purpose-Driven** Is a Competitive Advantage

- Cooperative Action Can **Drive Change**

- Protect Your Brand and Mitigate Risks

Sustainability doesn't mean sacrificing profits or deprioritizing success
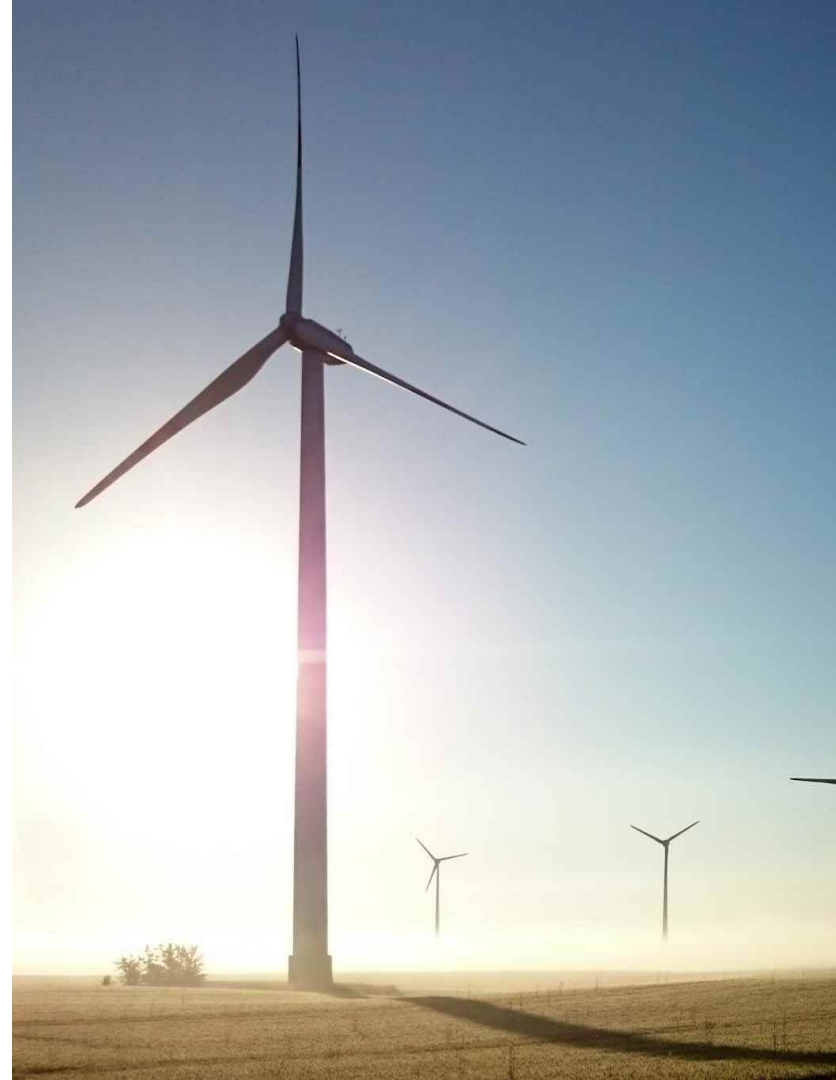
2007

First major company to become carbon neutral

2017

First major company to achieve 100% renewable energy

2030

First major company to operate 24/7 carbon free

Digital Sustainability

Reducing the impact of your IT operations and lowering your associated emissions

Operational Sustainability

Reimagine IT solutions to better enable the business to keep planet and profit in mind

Google Cloud

Operating the cleanest cloud in the industry

Use less energy

Take advantage of AI-optimized, efficient data centers and better utilization.

Google data centers **are twice as energy efficient** as a typical enterprise data center and compared to 5 years ago we deliver 7x the compute power for the same amount of electricity.

Zero net emissions

Meet your public sustainability commitments and reduce the environmental impact of IT operations.

Google has neutralized all legacy emissions since 1998 and **matched 100% of electricity use** with renewable energy since 2017, including the electricity that powers your workloads.

Carbon-free energy by 2030

First company to set the goal to completely decarbonize electricity

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

London 59%

Belgium 79%

Finland 94%

Google Cloud

Carbon Footprint

Measure, report, and reduce your cloud carbon emissions

- Provides *gross* emissions - your *net* emissions are always zero

- Methodology reviewed by 3rd party experts to be acceptable under GHG protocol

- Export data to BigQuery or to include in org-wide carbon accounting

- Available to all GCP users for free

- Integrated with recommendations to reduce emissions

Introducing

Google Cloud

Active Assist
Sustainability
Recommendations

- Uses advanced analytics and ML to identify idle projects

- Quantifies the impact of removing idle projects in terms of carbon footprint reduction

- Proactively surfaces recommendations via **Recommender API (Carbon Dashboard** and **Recommendation Hub** coming soon)

Proactive recommendations to delete unattended resources and reduce carbon emissions.

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Geospatial data and computational power enables businesses and governments to make faster decisions and drive sustainability goals

Real world data is critical for accuracy, speed and scale, trumping manual or post-facto measurements and certifications

1
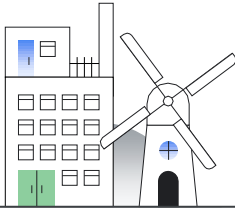
Collate business' physical locations prone to sustainability risk (mills, farms, factories, transport etc)

2

Link them to observable data about the Earth's surface globally, in near real-time and retroactively to track change

3

Analyze and evaluate how to reduce impact and improve business operations

Google Earth Engine

GEE is the the **world's largest archive of open Earth data** combined with a powerful tool to analyze and visualize the data at scale with a community of socially and environmentally conscious users.

80+ Petabytes
Growing daily

1000+
Curated datasets

**Continuously updated in
near real-time**

Google Cloud
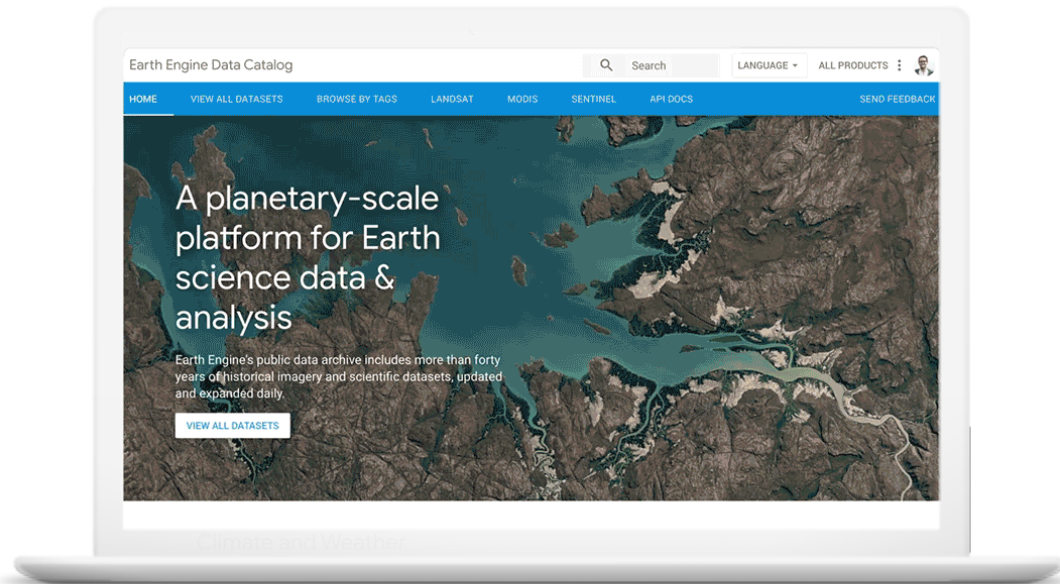
Case study:

Unilever

Google and our partner NGIS worked with Unilever to bring more transparency into the scale of deforestation around Unilever's palm oil production.

We use time-lapse images based on satellite data in Google Earth Engine to show whether deforestation is happening in near real time, which allows Unilever to have confidence that their suppliers are meeting their commitments. Unilever says that **"it brings us a step closer to our goals of regenerating nature and ending deforestation in our supply chain by 2023"**[1]

[1]Source: https://www.unilever.com/news/news-search/2020/how-google-will-help-end-deforestation-in-our-supply-chain

Case study:

SC Johnson

[Google and our partner Climate Engine worked with SC Johnson](#) to develop a new publicly available, predictive model of when and where mosquito populations are emerging in the United States.

Billions of individual weather data points are extracted from Google Earth Engine. This data is then merged with expert models on mosquito growth rates to produce a consumable forecast of mosquito populations, which can inform the public and also can drive inventory predictions for repellents and medications.[1]
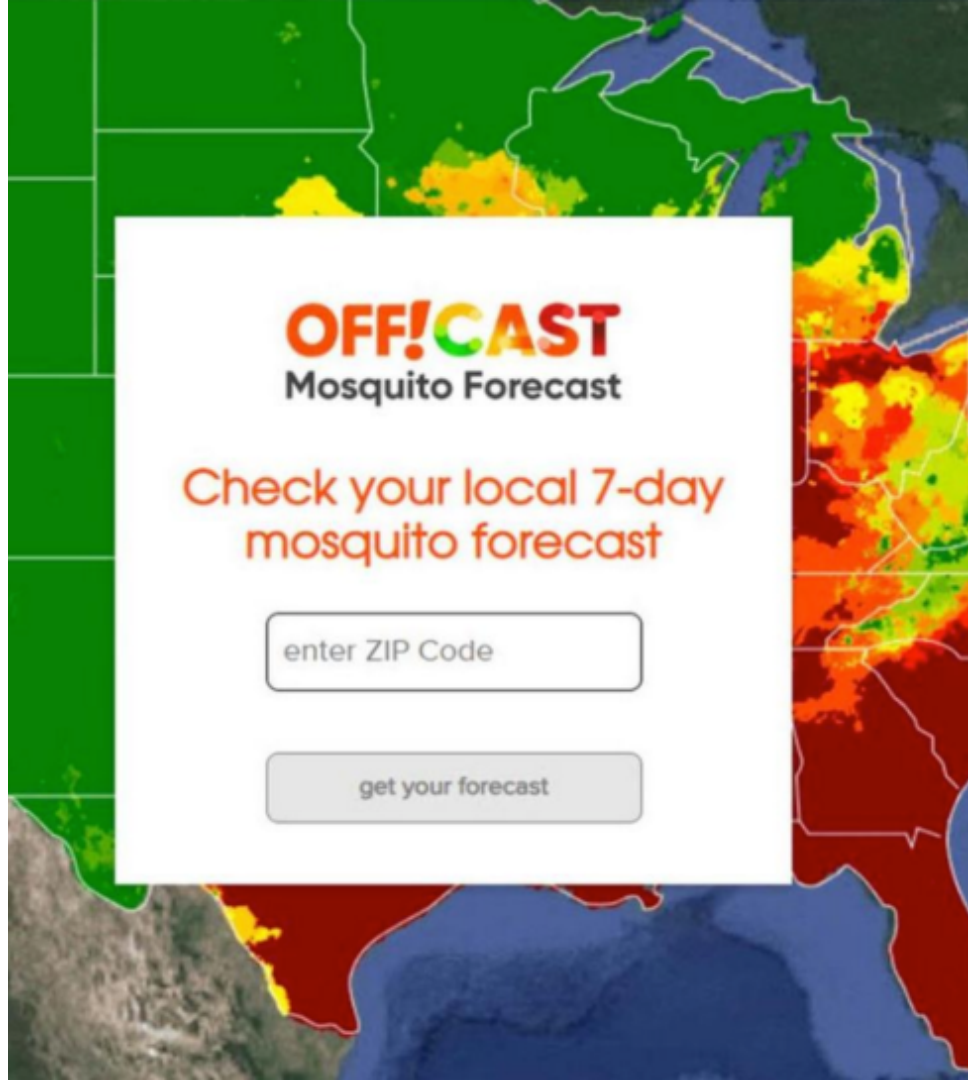
Case study:

Battelle NEON

[Battelle NEON collaborated with Google Public Sector to deploy their data on Google Cloud](#) to provide flexible and secure infrastructure to efficiently store and deliver data to NEON's users.

Data will be available in analysis ready formats on BigQuery and Google Earth Engine and will enable users who couldn't access data on this scale before or design new models without programming skills, to advance their research with cutting-edge tools.[1]

[1]Source: https://cloud.google.com/blog/topics/sustainability/google-and-battelle-neon-expand-ecological-data-access

Get involved

Workshops
- Startup Accelerators for climate
- Green@Google workshops

Learning
- Free 45-minute, interactive e-learning experience
- g.co/sustainableIT

Partnerships
- Looking to grow our nextworks of sustainability partners

Google Cloud

Environmental Disclosures

sustainability.google/reports/

Google Cloud

Accelerating climate action at Google and beyond.

Learn more at sustainability.google

That's a wrap.

Google Cloud