

Yes, the planet got destroyed.
But for a beautiful moment in time
we turned everything into a
Ghibli studio movie.

Is AI Helping or Hurting the Climate?

Assessment, Compliance,
and Opportunity

Jean-Philippe EHRET
27/05/2026



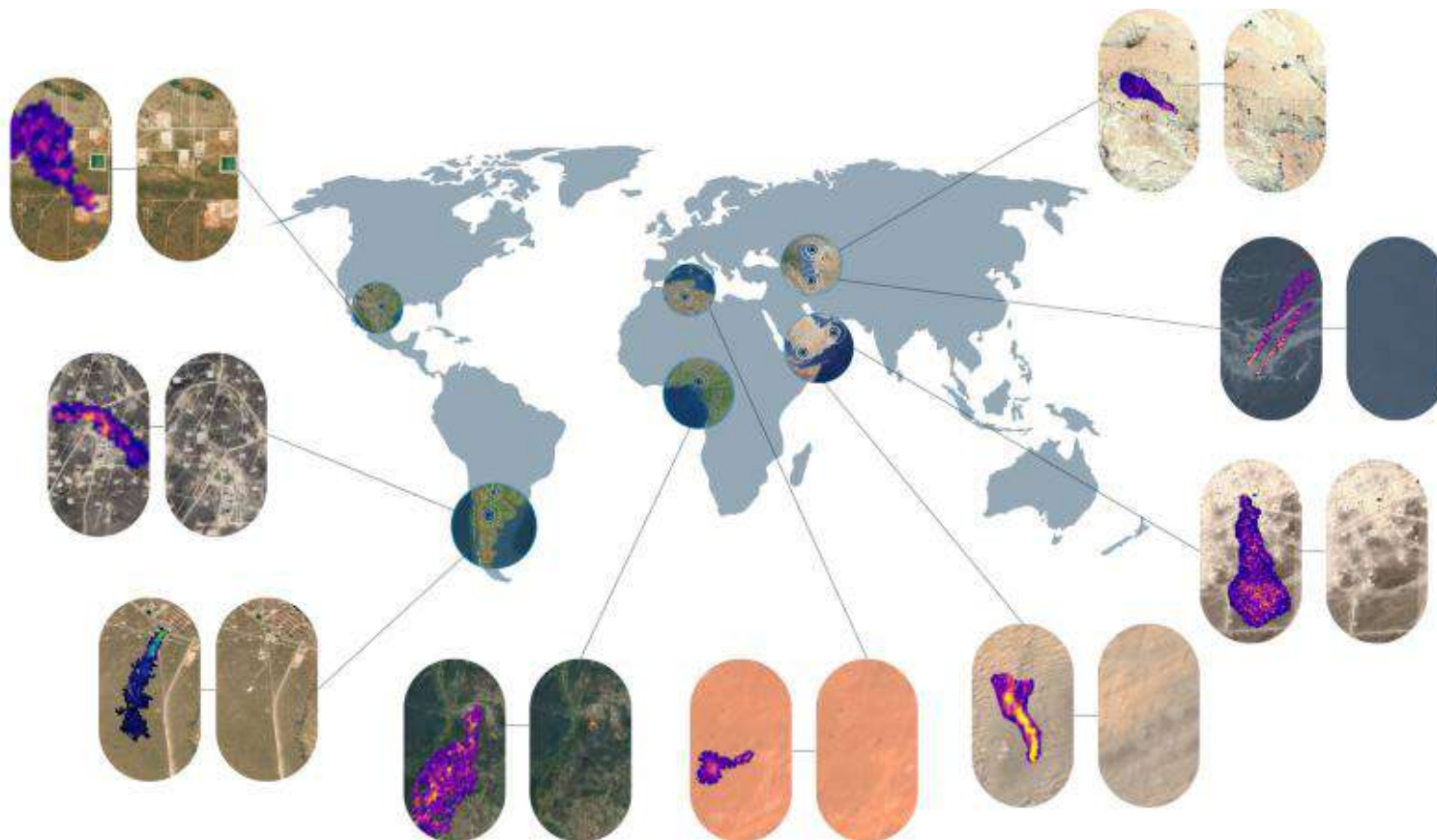


MARS-S2L (Methane Alert and Response System)

Methane leaks detection system
Machine Learning techniques and
Computer Vision.

Verified, permanent mitigations

In Algeria only: prevented >27,000 tons of methane emissions annually, which is equivalent to 500,000 standard passenger vehicles' yearly emissions.





AI for Green/Handprint - A New Hope



AI for Green/Handprint - A New Hope?

A study of 154 AI climate claims found:

- 74% lack peer-reviewed evidence
- 36% cite no evidence at all

Source: Joshi, K. — "The AI Climate Hoax", Feb. 2026 / Beyond Fossil Fuels & Climate Action Against Disinformation

Meta identified 135 CO₂-absorbing materials using AI. Independent scientists found none worked — and some were completely fabricated.

Google's long-running claim that AI could mitigate 5–10% of global greenhouse gas emissions by 2030 based on a third-party blogpost containing unverified information.



Not All AIs are the same

Traditional / Applied AI

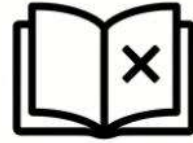
Distribution of Claims



150 out of 154 total claims

97% of climate benefit narratives rely on older technologies like **predictive modeling** and **computer vision**

Generative AI



0

Zero climate claims are verified
(No consumer generative system has proven material emissions reduction)

13x

Greater Energy Consumption



Gigatonne-Scale Reductions are Unfounded

Evidence for massive AI climate benefits is weak, while evidence of data center harm is strong.

- > ... At no point did this analysis uncover examples where consumer generative systems such as ChatGPT, Gemini, or Copilot led to a verifiable and substantial level of emissions reductions.
- > ... much of the projected energy consumption of AI will stem specifically from “generative AI”, rather than more traditional forms of machine learning

The AI Climate Hoax: Behind the Curtain of How Big Tech Greenwashes Impacts

Ketan Joshi - February 2026

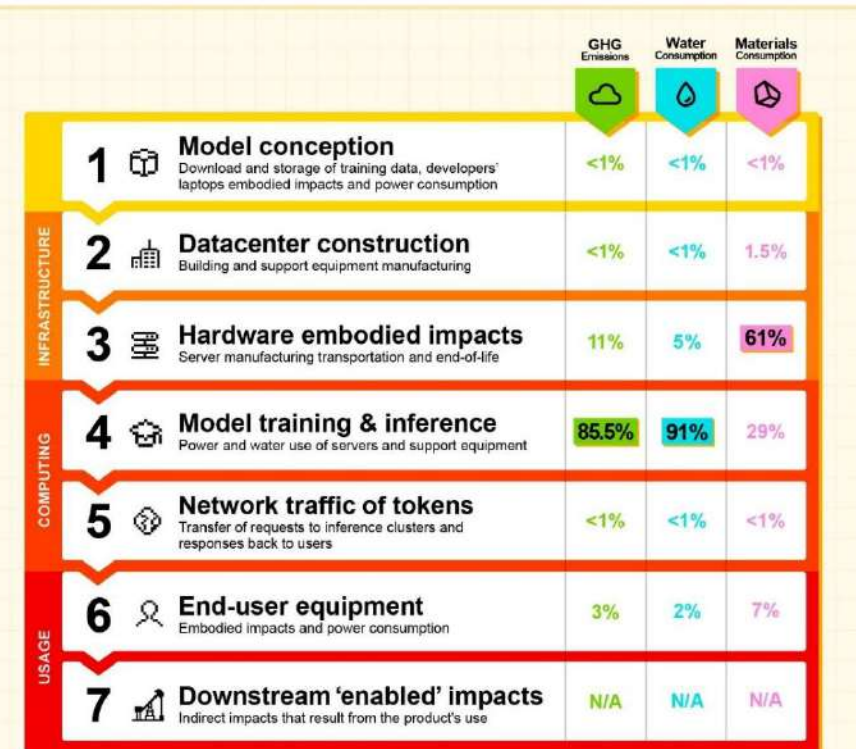
Environmental Impacts of LLMs

Tech companies successfully lobbied to have data centre energy and water consumption classified as *commercially sensitive* under EU law — making independent measurement nearly impossible.

Source: Investigate Europe / The Guardian, April 2026



Mistral AI's Large 2 Model Lifecycle Analysis



The location of data centers is one of the main factors of a model's environmental impact.

At Mistral AI, we are building our own data center in France, leveraging low-carbon electricity and a cool climate to reduce GHG emissions and water usage.

The footprint of a model is strongly correlated with its size. Choosing smaller or case-specific models helps mitigate the environmental impact.

At Mistral AI, we offer our customers a broad range of model sizes, starting with our smallest model, Mistral 3B.

Inference is a key part of a model's life cycle. End users can also help reducing the impact.

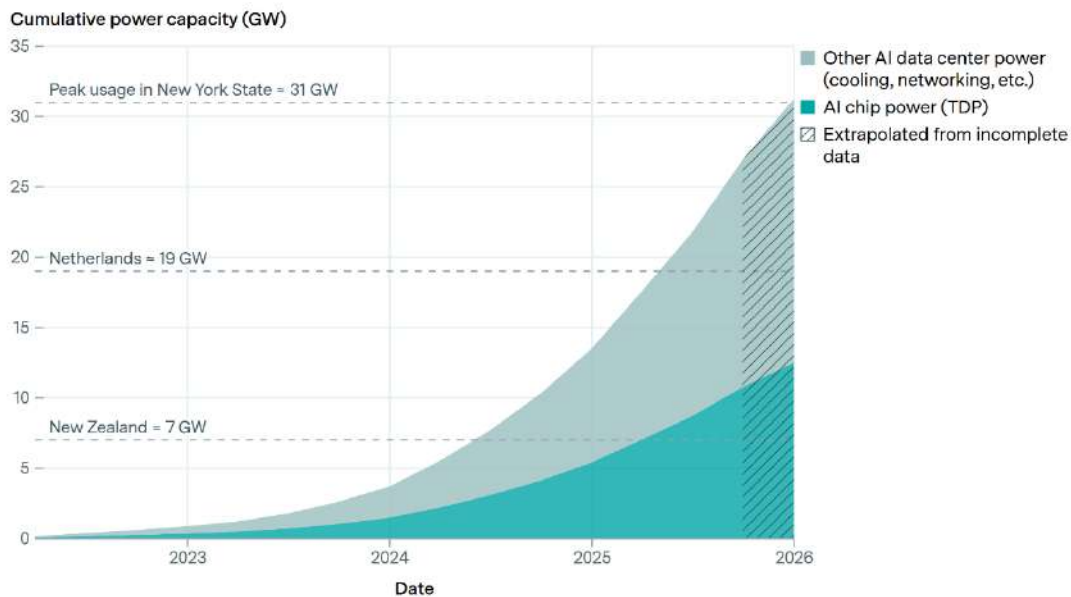
At Mistral AI, we recommend writing precise prompts and asking for short, grouped answers whenever possible.



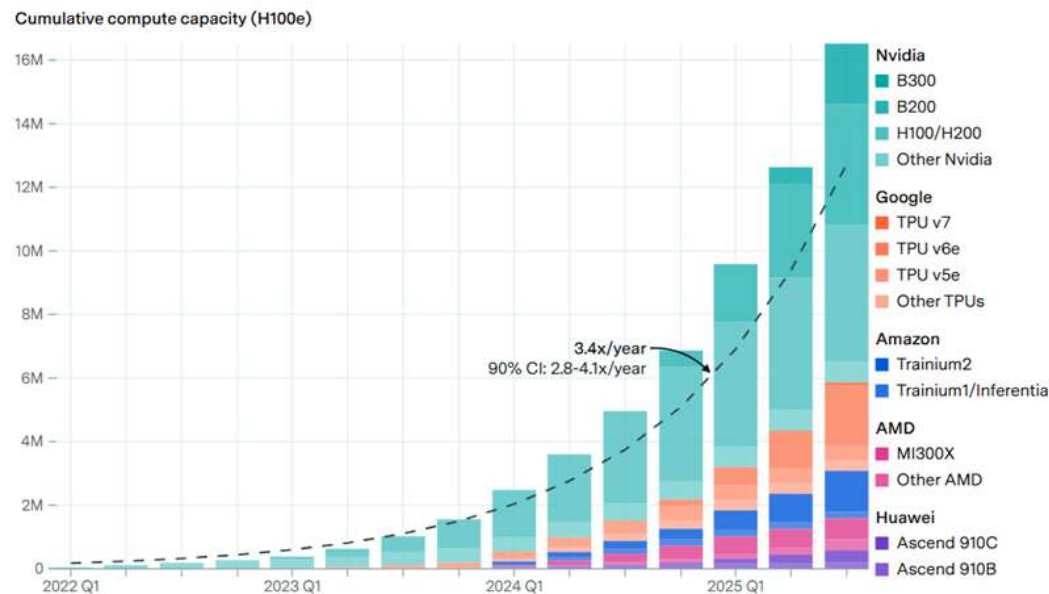
Environmental Impacts of AI Datacentres

Land, Energy and Water are the hot topics.

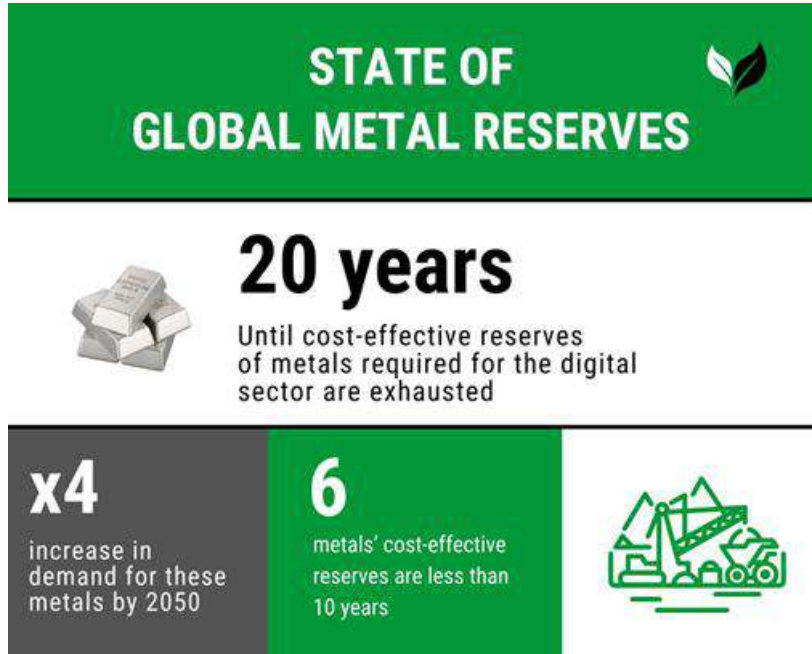
Global AI power capacity is now comparable to peak power usage of New York State



Global AI computing capacity is doubling every 7 months



AI vs. Societal Essentials



How long can Generative AI remain a Mass Market product?

■ The Optimisation Case/Enabled Emissions

Efficiency ≠ Sustainability as it comes with **indirect impact** and **rebound effect**

Optimisation is available to everyone. Including the fossil fuel industry.

"Microsoft's AI contracts with ExxonMobil and Chevron enabled an estimated **57 million additional tons of CO₂** – more than 3× Microsoft's own annual emissions." – *Global Witness, 2026*





AI Governance – Environmental Sustainability

- Regulatory & disclosure risk regarding environmental impact
- Reputational & greenwashing risk
- Cost & operational efficiency risk
- ...



RESPONSIBLE AI INCLUDES ENVIRONMENTAL RESPONSIBILITY



WHY CARE

As AI adoption scales, some AI systems can materially increase energy use, emissions, and infrastructure demand. If these impacts are not understood and governed, organisations face regulatory, reputational, and operational risk.

Environmental sustainability is now a core dimension of AI governance.

KEY RISK DRIVERS

- Regulatory & disclosure risk (CRD, certifications, overseas regulation)
- Environmental impact (energy, carbon, water, raw materials)
- Reputational & greenwashing risk (credibility of AI sustainability claims)
- Cost & operational efficiency risk (energy and compute-intensive AI systems)

AOTEAROA NZ CONTEXT

In Aotearoa New Zealand, AI environmental governance reflects Kaitiakitanga (stewardship and guardianship of resources for long-term resilience) alongside existing obligations.

Climate-related disclosures (CRD): AI can materially affect reported energy use and supplier impacts.

Environmental certifications: Programmes such as Toitū Envirocare, ISO 14001, and B Corp require identification of material environmental impacts, including digital and AI services.

Procurement and suppliers: Cloud and AI vendors increasingly influence sustainability performance and disclosure quality.

Where organisations operate overseas, **extraterritorial** requirements (e.g., EU AI Act) may also apply.

GOVERNANCE DECISION

AI environmental sustainability should be managed through existing risk and AI governance frameworks, not standalone programmes.

MATERIALITY & PROPORTIONALITY

Not all AI systems are environmentally material. Governance depth should match environmental impact.

- High inference volume?
- Frequent training or experimentation?
- Meaningful cloud or electricity spend?
- Significant supplier exposure?



IS AI MATERIAL?

Proportionate response:

- AI READY > VISIBILITY
- AI SMART > MEASUREMENT
- AI TRUSTED > OPTIMISATION

LEARN MORE



Read the full guide

Contact Resilio Solutions



AI READY

Know your role as a guardian

ESTABLISH VISIBILITY

Determine **materiality** of AI environmental impacts and avoid obvious **inefficiencies**

Actions

Integrate sustainability into AI risk assessment

Extend AI system inventory with basic

AI SMART

Be an active guardian

MEASURE & DESIGN BETTER

Move from estimates to **defensible**, decision-grade **measurements**

Adopt lifecycle-aligned (ILCA) Actions measurement methods

Define KPIs (e.g., emissions per

AI TRUSTED

Lead as a guardian

OPTIMISE CONTINUOUSLY

Actively **manage and reduce** AI environmental impacts over time

Monitor energy and workload patterns

Apply carbon-aware operations practices (time/region shifting)



AI Governance – Environmental Sustainability

Climate-related disclosures (CRD)

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Materiality assessment: make impact visible



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AI SMART > MEASUREMENT

AI TRUSTED > OPTIMISATION

ITU-T L.1801

New Standard · ITU-T Study Group 5 · Approved 06 February 2026

AI finally has an environmental report card.

ITU-T L.1801 is the world's first standard for measuring how much AI systems actually cost the planet — from GPU mining to your last query. This is what it means, layer by layer.

4

Life cycle stages every AI must account for

5

Environmental impact categories defined

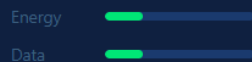
3

Orders of effect — including ripple effects on the world

TYPE 01

Expert Systems

Medical diagnosis, fraud detection, energy optimisation — rule-based, human-defined logic



Hardware: CPU only

TYPE 02

Machine Learning

Email filtering, product recommendations — learns from statistical patterns in data



Hardware: CPU + GPU

TYPE 03

Deep Learning

Image recognition, CNNs, RNNs — multiple layers of neural networks



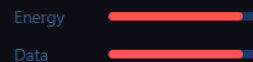
Hardware: CPU + GPU

TYPE 04

Highest Impact

Generative AI

LLMs, image/video generation, multi-modal models — generating new content at scale



Hardware: Significant GPUs and/or TPUs



→ **Key insight:** The standard explicitly classifies GenAI as "comparatively high" in both energy and hardware demands — a level above all other AI types. When people debate "AI's environmental impact," they are mostly talking about Type 04.



Materiality assessment: make impact visible

Extend you IT Inventory to include environmental drivers

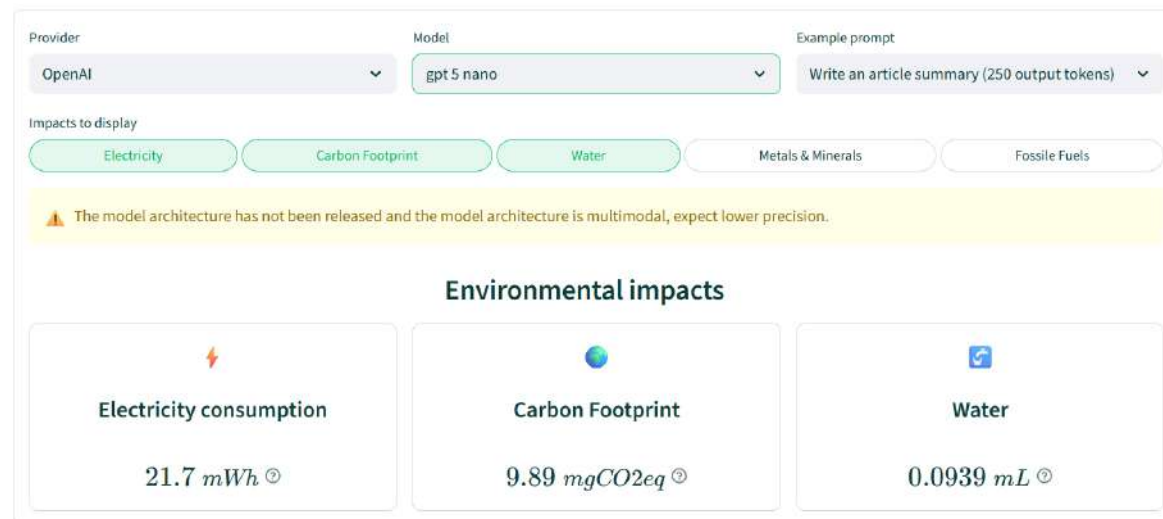
When organisations start looking, they find:

- far more AI than they thought
- only a small share that's environmentally material
- the ones material far more material than they thought.

INVENTORY DATA: The four questions main questions

- Where/When does it run? – cloud provider, region, what's the grid like
- How much does it run? – volume, frequency of inference but also frequency of retraining (including R&D)
- What kind of AI is it? – output format (Text, Image, Video), Reasoning, Agentic
- Who's exposed? – which suppliers, which disclosures (CRD), which rules (EU AI Act, certifications)

At this stage, coarse is fine. The goal is to separate the few material systems from the many that aren't.



Estimate and track the environmental footprint of GenAI models at inference.

Made with by CodeCarbon non-profit.

■ AgenticAI, a major shift in Sustainability

Recursive, parallel, switches on storage, APIs, jobs, autonomously and sometimes for hours.

A single agentic task can use around a **1000x** more compute than a standard AI question.

Impacts entire IT infrastructures, within and outside the organisation.





LCA & GreenOps

AI providers burned **tens of billions** in 2025 to offer free access to **hundreds of millions of users**.

Price has been deliberately **decoupled from cost**.

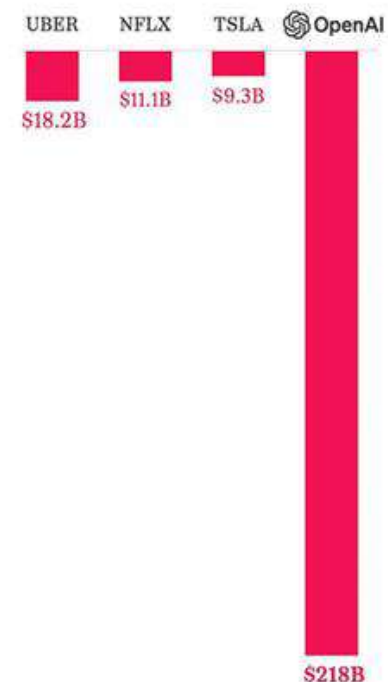
Measure tokens, not seats or licenses. And monitor the impact of token consumption on your entire IT infrastructure, not only the AI compute.

Spend-based emission factors don't work here (they never worked for IT anyway).

Scope 3 can represent over **90%** of an org. total carbon footprint, especially in the services sector.

OpenAI's Planned Cash Burn Is Insane

Free Cash Flow, Selected Companies [Annual, \$ billions]



CHARTR Sources: Bloomberg, The Information | N.B. OpenAI's cash burn is forecasted from 2026 to 2029.

When measured appropriately, **AI exacerbates Digital Emissions** across categories **1, 2, 11, 12** and **15**.

- Right-size models
- Choose lower-carbon regions/time
- Implement eco-design principles for efficiency
- Reduce unnecessary inference & retraining
- Extend hardware lifetime & support circular procurement
- Green Prompting



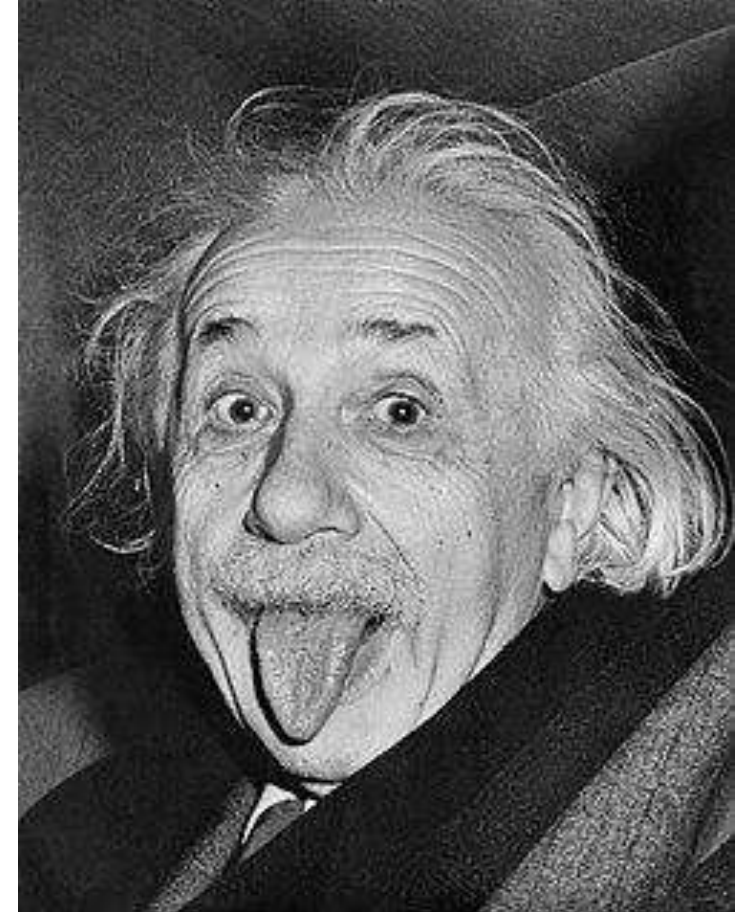
Mitigation Principles

■ Right-sized models

"Stop using a sledgehammer to crack a nut."

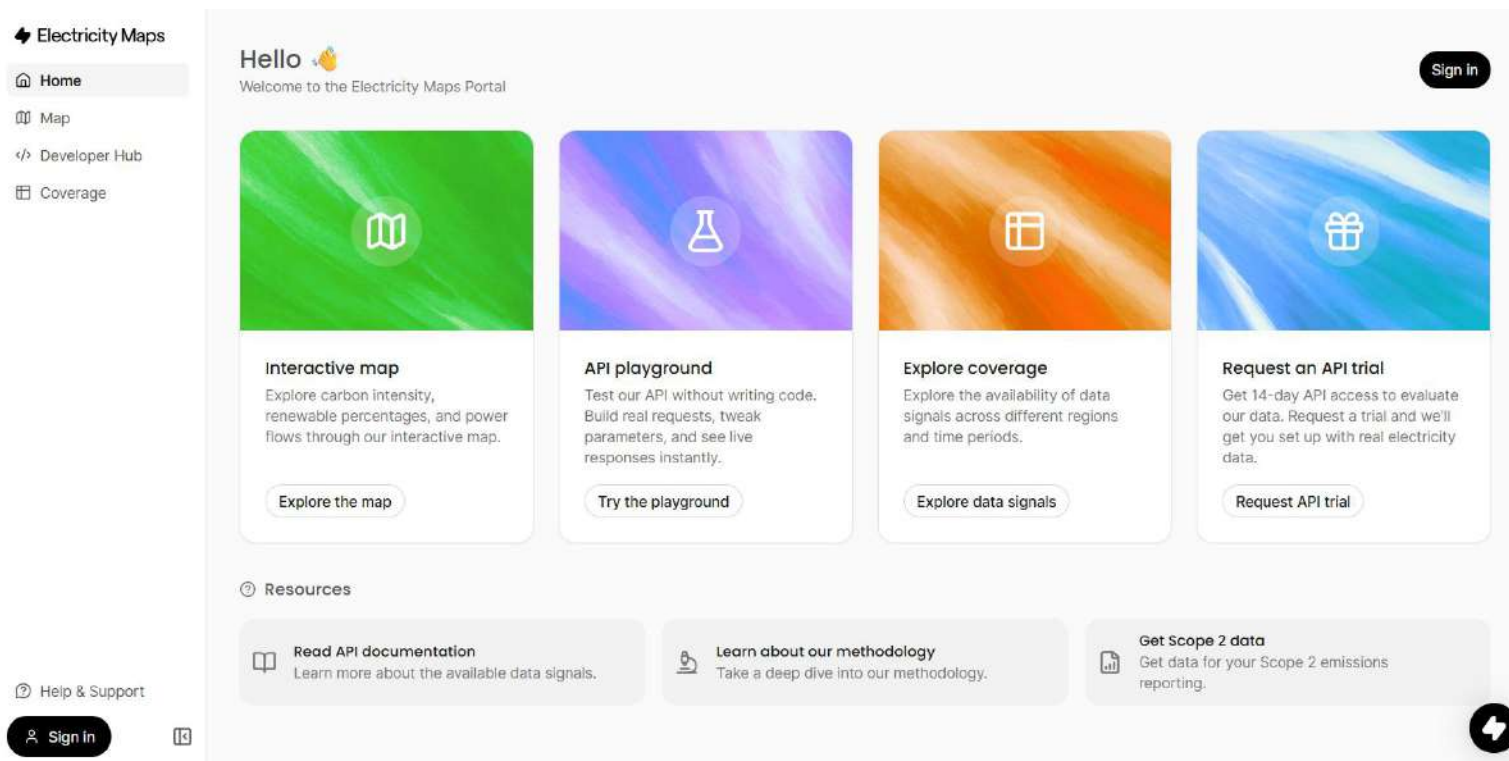
Defaulting to the largest general-purpose model wastes **20–30× the energy of a fit-for-purpose smaller one** — for no extra value.

(Luccioni, Hugging Face)



Region/Time

75% of the US data centers currently being built are set to be powered by natural gas.



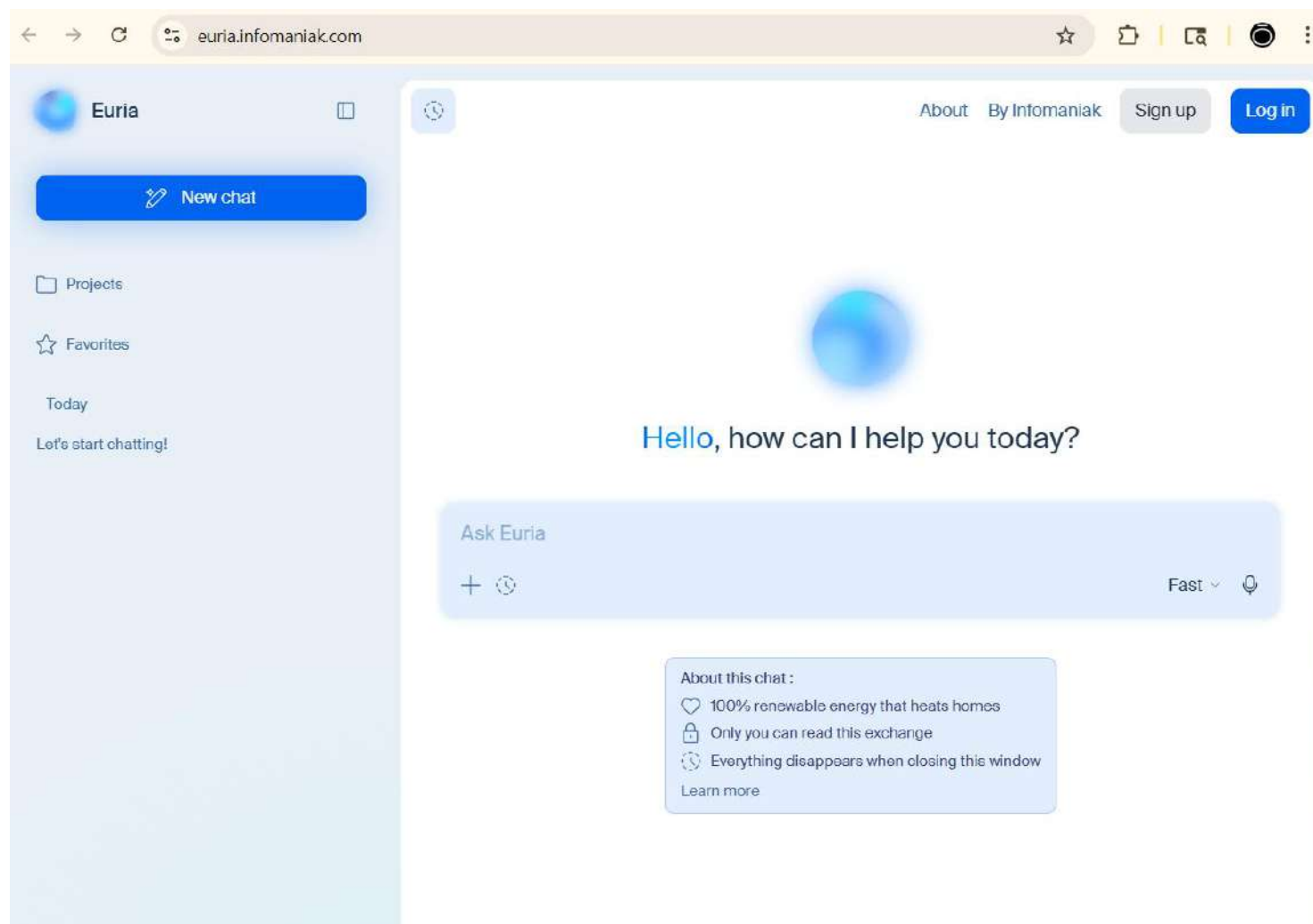
The screenshot shows the Electricity Maps Portal homepage. On the left is a navigation sidebar with links for Home, Map, Developer Hub, and Coverage. The main content area features a 'Hello' greeting and a 'Sign in' button. Below this are four interactive cards: 'Interactive map' (green background, book icon), 'API playground' (purple background, flask icon), 'Explore coverage' (orange background, grid icon), and 'Request an API trial' (blue background, gift icon). Each card has a brief description and a call-to-action button. At the bottom, there is a 'Resources' section with three links: 'Read API documentation', 'Learn about our methodology', and 'Get Scope 2 data'. A 'Sign in' button is also located at the bottom left of the page.

Easy: Run your AI at the right place, at the right time.

Advanced: Adopt Load Shifting/Grid Aware computing.



Environmentally Friendly Chatbot - Euria





■ The Greenest Prompt? Keep Conversations Short

*Because transformer attention scales **quadratically** with context length, turn 20 doesn't cost 20× turn 1, it costs closer to 400×.*

Summarize and restart to reduce **energy** and **cost** (compact/handoff)

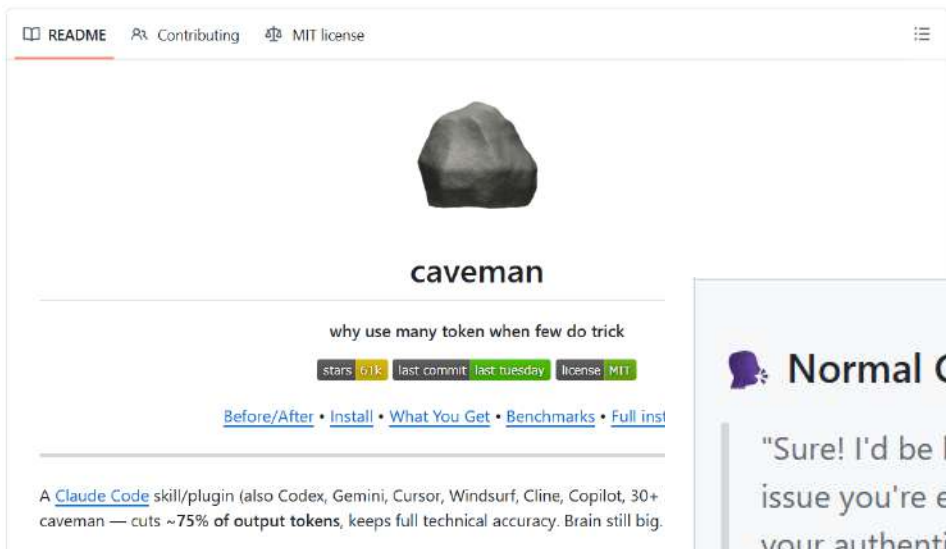
give me a conversation handoff summary designed to restart a fresh session with zero loss of context. Structure it as:

1. My goal / what I'm trying to achieve (2-3 sentences)
2. Key decisions made and conclusions reached (bullet points)
3. What we tried and ruled out (brief)
4. Open questions or next steps (bullet points)
5. Critical context or constraints I should carry forward (anything the AI needs to know about me, my project, my constraints)

Write it as something I can paste at the top of a new conversation as the very first message, so the new session picks up exactly where this one left off. Be concise — this is a brief, not a transcript."**



The Greenest Prompt? LLMs don't need literature



Normal Claude

"Sure! I'd be happy to help you with that. The issue you're experiencing is most likely caused by your authentication middleware not properly validating the token expiry. Let me take a look and suggest a fix."

Caveman Claude

"Bug in auth middleware. Token expiry check use < not <=. Fix:"

Same fix. 75% less word. Brain still big.

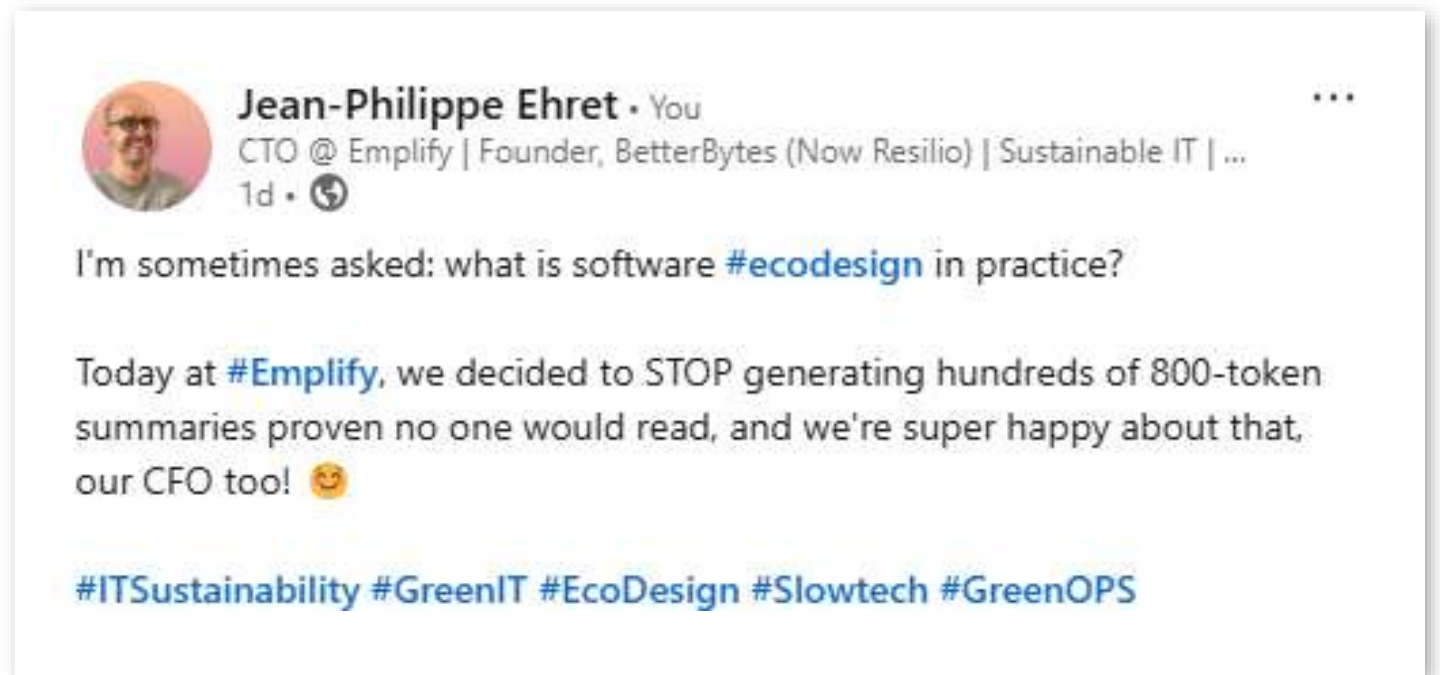
TOKENS SAVED	██████████	75%
TECHNICAL ACCURACY	██████████	100%
SPEED INCREASE	██████████	~3x
VIBES	██████████	00G




■ Eco-Design

Eco-design your software: Delete non-essentials

Allow a budget for it.
It is worth it!



A screenshot of a tweet from Jean-Philippe Ehret. The tweet text reads: "I'm sometimes asked: what is software #ecodesign in practice? Today at #Emplify, we decided to STOP generating hundreds of 800-token summaries proven no one would read, and we're super happy about that, our CFO too! 😊 #ITSustainability #GreenIT #EcoDesign #Slowtech #GreenOPS". The user's profile information includes a circular profile picture, the name "Jean-Philippe Ehret • You", and the bio "CTO @ Emplify | Founder, BetterBytes (Now Resilio) | Sustainable IT | ...". The tweet is timestamped "1d" and includes a location pin icon.

 **Jean-Philippe Ehret** • You ⋮
CTO @ Emplify | Founder, BetterBytes (Now Resilio) | Sustainable IT | ...
1d • 📍

I'm sometimes asked: what is software [#ecodesign](#) in practice?

Today at [#Emplify](#), we decided to STOP generating hundreds of 800-token summaries proven no one would read, and we're super happy about that, our CFO too! 😊

[#ITSustainability](#) [#GreenIT](#) [#EcoDesign](#) [#Slowtech](#) [#GreenOPS](#)

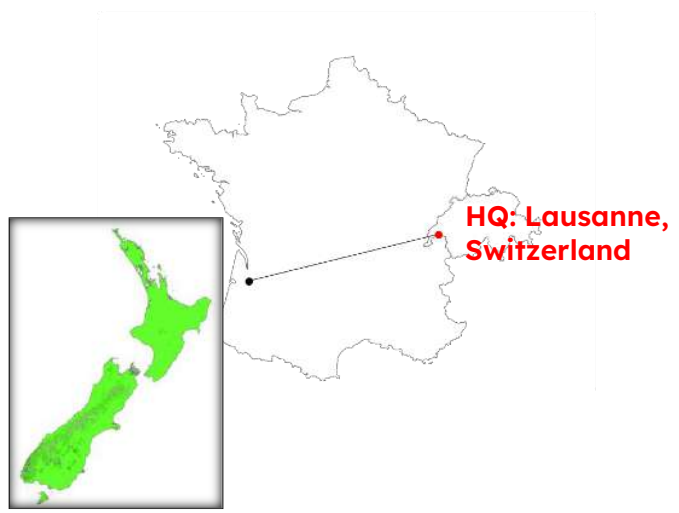


■ Take-aways

- Traditional/Applied AI proven positive for climate; not consumer GenAI.
- Generative AI impacts energy, carbon, water, and raw materials – impact resilience and sovereignty.
- All organisations must embed environmental sustainability in their AI Governance.
- Materiality assessment: always. Measurement: likely when CRD, certifications, extraterritorial rules, or agentic AI are present.
- AI's footprint extends to the entire IT infrastructure, agentic AI amplify impact significantly
- Right-size models, choose lower-carbon regions/times, apply eco-design – and remember optimisation can enable others' emissions too.
- Green Prompting: Not a silver bullet, but a few best practice worth knowing



Together, let's build a more **sustainable** digital future



HQ: Lausanne,
Switzerland



Questions?

Resilio SA is a **Swiss** based company helping organisations define and implement **Sustainable IT** strategies.
Its **NZ** based subsidiary is based in Hawke's Bay and offering services in APAC.

