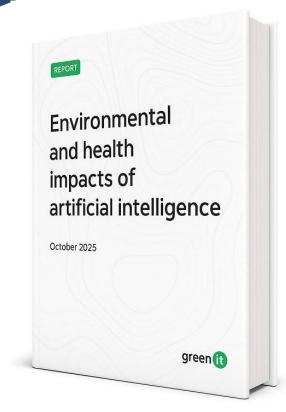
Artificial Intelligence

What are the real environmental and health Impacts?

10th december 2025



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Methodology



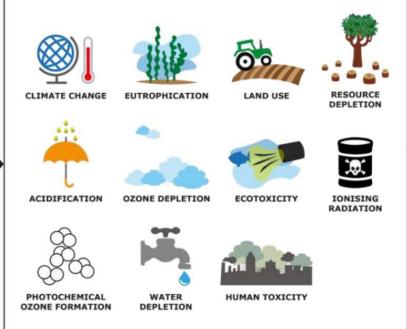
LCI - Life Cycle Inventory

For each stage of a product life cycle (e.g. resource extraction, manufacturing, use, etc.) data on emissions into the environment (e.g. CO₂, benzene, organic chemicals) and resources used (e.g. metals, crude oil) are collected in an inventory.



Each emission in the environment and resource used are then characterised in term of potential impact in the LCIA, covering a number of impact categories.

LCIA - Life Cycle Impact Assessment





Interpretation



Goal and scope

e.g. LCA of a car of typology X,

assuming a use for

Y years, produced

in country Z, ect.

Product Environmental Footprint (PEF)



Multi-criteria
Life Cycle Assessment (LCA)



Product Category Standards (RCP) for Digital Services

Goal & Scope



Assess "Using *n* servers for one year (a) "

(a) = 2025; n = 1.133.500 Al servers

(a) = 2030; n = 7.625.000 Al servers



Initial inventory

Building and using an IA server



Surprising findings

- · Much shorter lifespan
 - · 1-3 years vs 7 years
- · 2-3x more power
 - . 1000 W/U vs 500 W/U





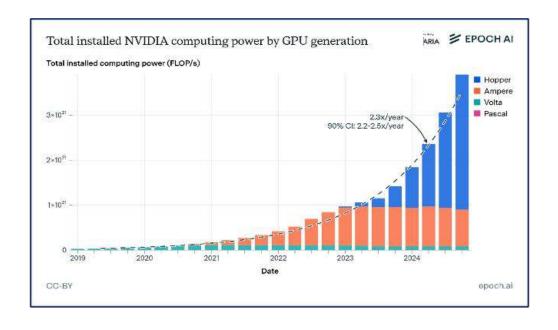
Components	Quantities
GPU Tensor Core Nvidia H100 SXM	8
CPU Intel Xeon	2
Motherboard	1
Power supply	4
Power supply - backup	2
RAM DDR5 64Gb DIMM	32
SSD TLC M.2 1Tb	4
Rack dimension (U)	7

World inventory

Using n servers during 1 year





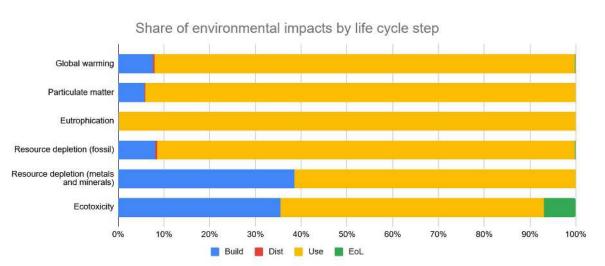


Surprising findings

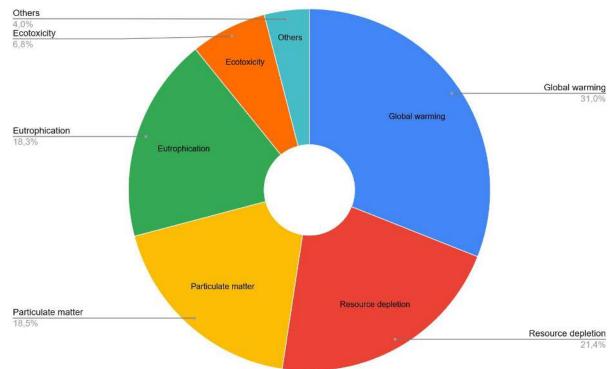
- · Very High thermal density
- · 80% of DCs worldwide are obsolete
- · Highly-specific infrastructure, dedicated to AI computing

Major impacts





Share of environmental impacts of AI (world, 2025)



Summary



x7

growth of impacts between 2025 and 2030 100%

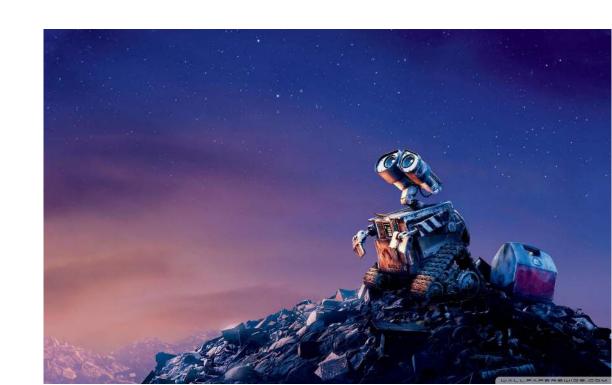
France GHG emission target 2030

6 days

of world oil consumption 2030

62%

of the sustainable annual budget of a European citizen in 2030



Recommandations



- O. Extend to end-to-end impact assessment
- 1. "No tech, before low-tech Analytics, before non-Gen Al, before Gen Al"
- 2. Eco-design and frugal Al
- 3. Quick-win: locate AI hosting in countries with low-impact watt production

Bonus: Embed the "social" dimension into your decision making process



our "metals & mineral" study





Official Report published!



Thank you for your attention!