

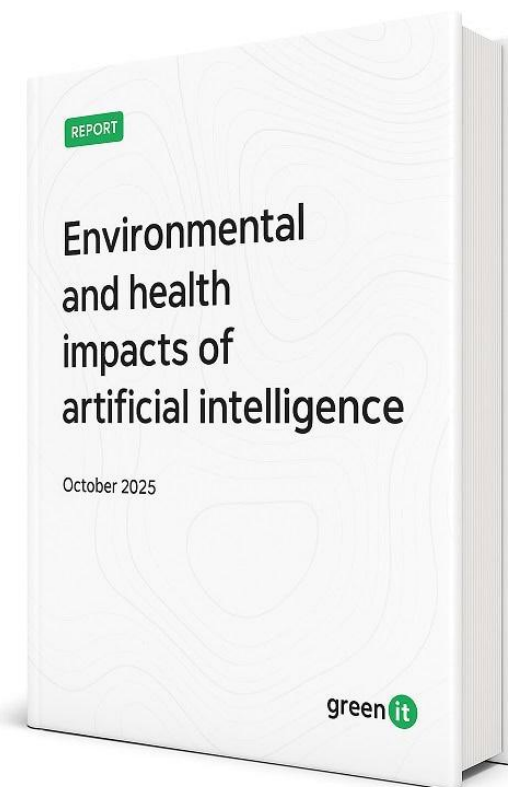
Artificial Intelligence

What are the real environmental and health impacts?

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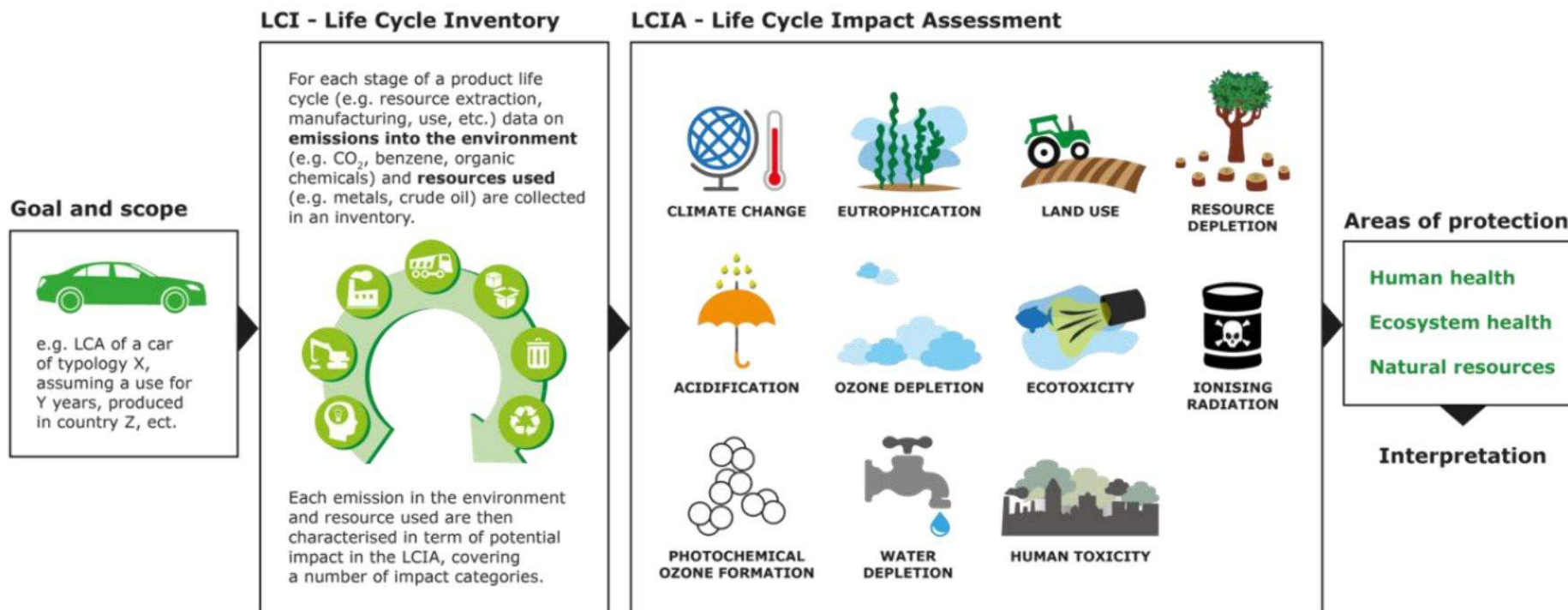
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Editor

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Product Environmental
Footprint (PEF)



Multi-criteria
Life Cycle Assessment (LCA)



Product Category Standards
(RCP) for Digital Services

Assess “ Using n servers for one year (a) ”

$(a) = 2025$; $n = 1.133.500$ AI servers

$(a) = 2030$; $n = 7.625.000$ AI servers



Initial inventory

Building and using an IA server

Surprising findings

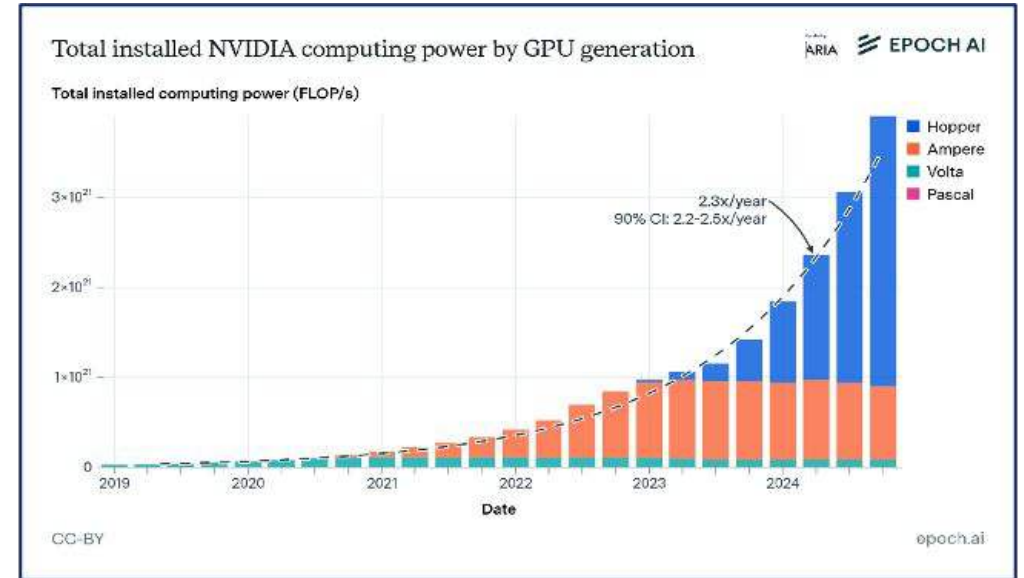
- Much shorter lifespan
 - 1-3 years vs 7 years
- 2-3x more power
 - 1000 W/U vs 500 W/U



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

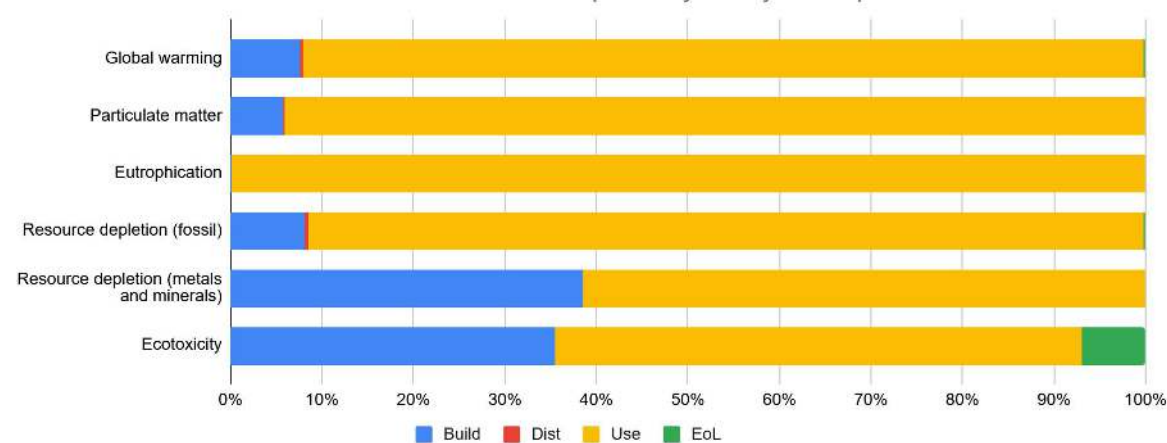
Using n servers during 1 year



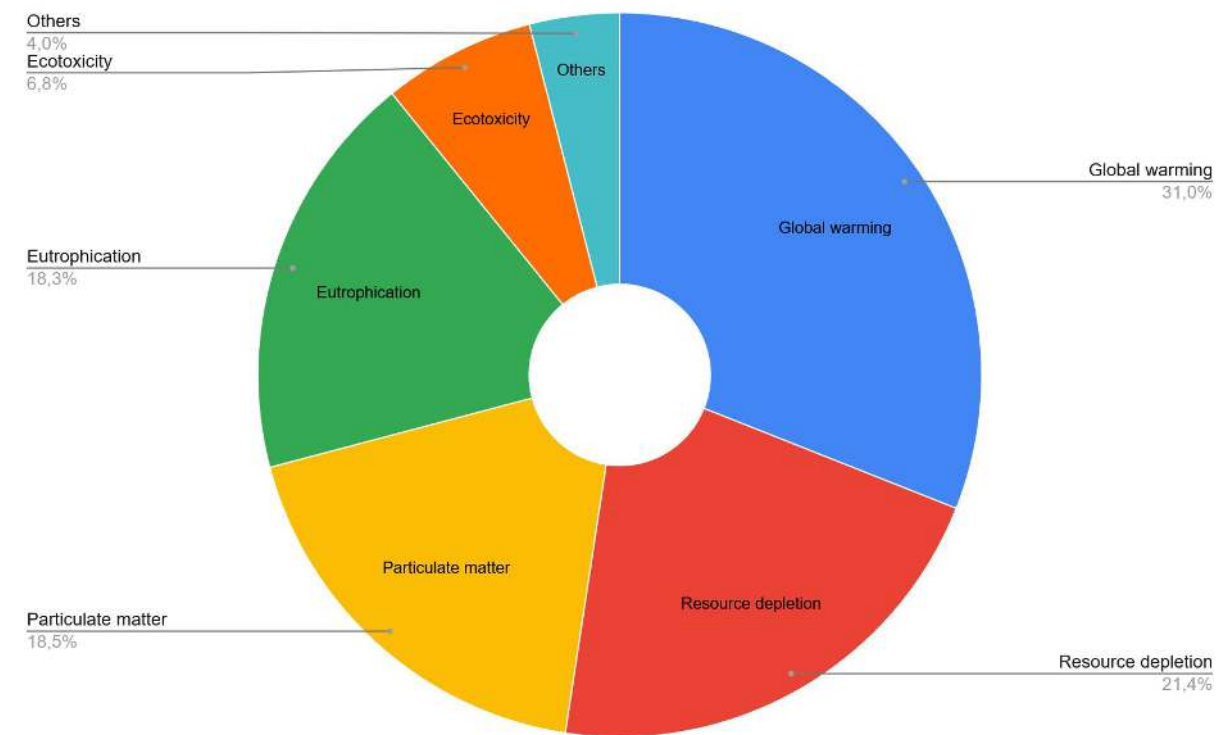
Surprising findings

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

Share of environmental impacts by life cycle step



Share of environmental impacts of AI (world, 2025)



x7

growth of impacts
between 2025 and 2030

100%

France GHG emission
target 2030

6 days

of world oil consumption
2030

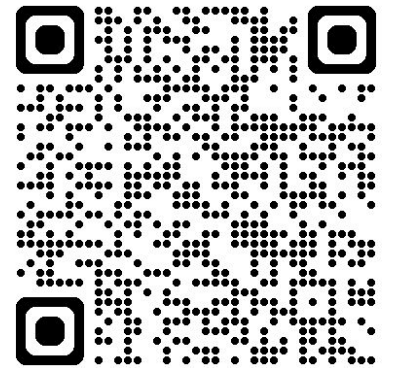
62%

of the sustainable annual
budget of a European
citizen in 2030



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

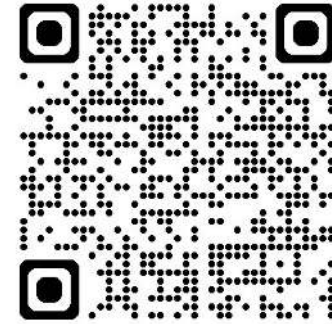
Bonus: Embed the "social" dimension into your decision making process




our "metals &
mineral" study



Official Report
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Thank you for your attention!