THE ENVIRONMENTAL IMPACT OF ARTIFICIAL INTELLIGENCE

Balancing Innovation with Environmental Cost



WHAT IS AI?

AI uses powerful computers to **analyze data, recognize patterns**, and make decisions.

These systems run in **energy-hungry data centers.**

ENVIRONMENTAL COSTS

High Electricity Use [1, 3]
1–2% of global electricity

Carbon Emissions [4,11]
Mainly from fossil fuels (CO_2)

Water Consumption [5]
Millions of gallons for cooling

E-Waste [6]
Growing problem



HOW AI CAN HELP THE ENVIRONMENT

Climate Research [7,11]
Model & predict change

Energy Efficiency [8]
Smarter grids, less waste

Wiidlife Protection [9]
Tracking & monitoring

Sustainable Agriculture [10]
Precision farming, less water

THE HIDDEN COST

Training large AI models can consume significant electricity, sometimes comparable to the yearly energy use of dozens to hundreds of homes. [2]

BUILDING SUSTAINABLE AI



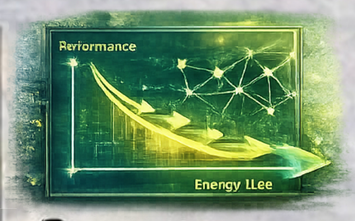
Renewable Energy [1,8]



Efficient Chips [3]



Eco-Friendly Cooling [5]



Smarter Software [2,7]

Sources

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Full sources and project details:

www.ai-environmentalimpact.org

Every Digital Thought Has a Physical Cost — Let's Power AI Responsibly.

Produced through a collaborative process between a human steward and an artificial intelligence system.
Full methodology and archival transcript: ai-environmentalimpact.org