AI ENVIRONMENTAL FOOTPRINT

Where are the environmental impacts of AI hidden?

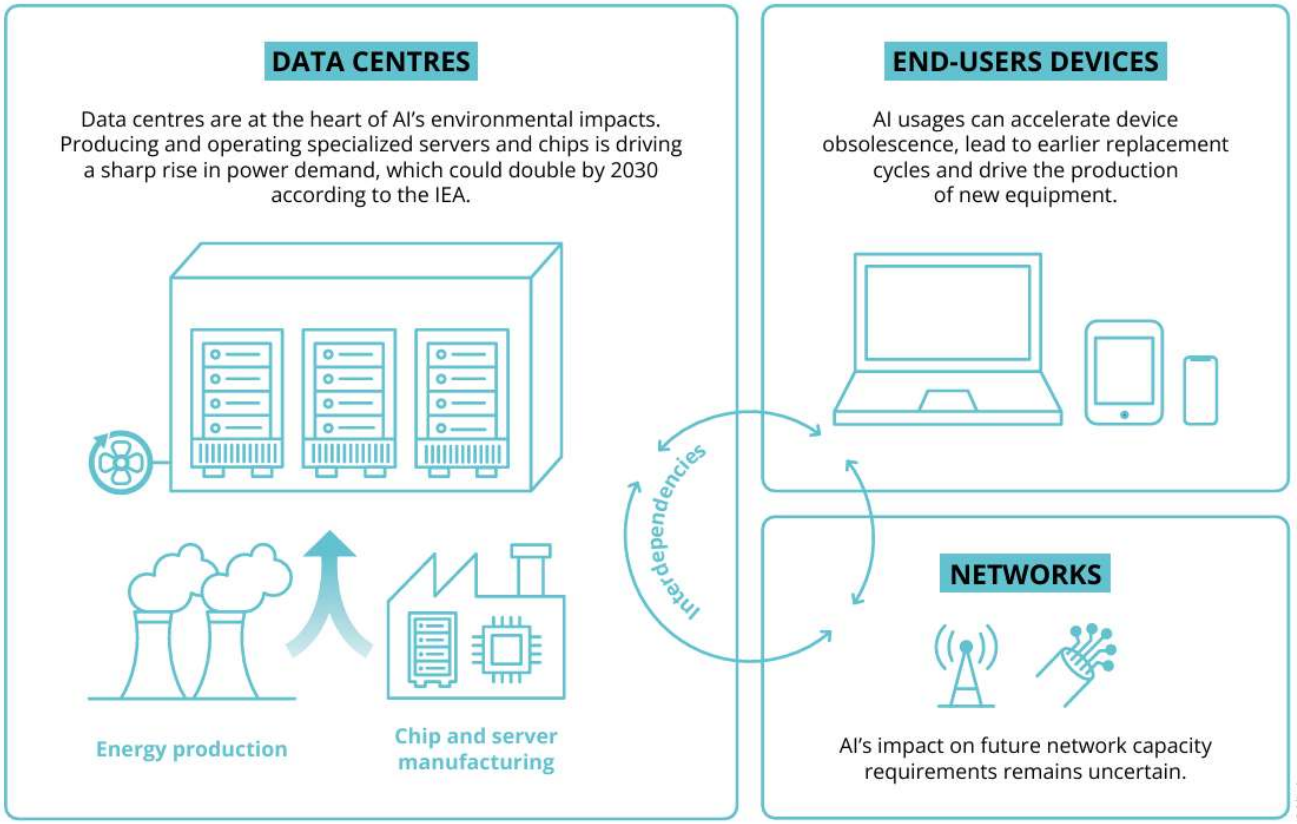
48% of people in France were using AI in 2025. Like any digital service, **AI runs on physical infrastructures and hardware**. It generates environmental impacts through AI models **training** and subsequent **usage** (“inference”).

Those impacts vary in nature:

- **Power consumption**
- **Greenhouse gas (GHG) emissions**
- **Water consumption**
- **Soil sealing**
- **Abiotic resources depletion (metals & minerals)**

AI models training requires significant computational power. The impact mainly depends on the size of the models (number of parameters), the electricity mix, and the hardware used (chips and servers). However, both the number of models and their size continue to grow.

The **environmental impact of usage** is linked to the number of prompts submitted by users. It also depends on the type of task requested, such as generating text, images, or videos. The number of prompts continues to grow in line with the number of users and the widespread adoption of these services.



Arcep’s report on “The environmental challenges of generative AI” revealed that the largest models are always the heaviest energy consumers, and that **some more energy-efficient models are capable of providing responses that are just as relevant as the large models**. Limiting energy consumption does therefore not necessarily mean having to compromise the model’s performance.

9 recommendations for making AI development compatible with planetary boundaries

Arcep's report "Generative AI: environmental issues and challenges"

IMPROVE THE ASSESSMENT AND UNDERSTANDING OF THE ENVIRONMENTAL IMPACT OF AI

HOW:

1) **Implement the collection and publication of AI environmental data** by public authorities
2) **Use internationally standardised** environmental impact assessment methodologies to facilitate comparisons between AI systems

WHERE? *DNA, CADA and AI Act*

PROMOTE THE ECODESIGN OF AI SERVICES AS A STRATEGIC LEVER FOR EUROPEAN COMPETITIVENESS

HOW:

3) **Integrate the ecodesign of AI services** into European regulation of providers
4) **Strengthen eco-conditionality** in innovation support and public procurement rules

WHERE? *DFA, DNA, CADA and EU Kids Act*

ENABLE USERS TO CHOOSE THEIR GENERATIVE AI SERVICES ON THE BASIS OF THEIR ENVIRONMENTAL IMPACT, THROUGH AN APPROPRIATE EUROPEAN REGULATORY FRAMEWORK

HOW:

5) **Require greater environmental transparency** from chip suppliers and the main AI model and service providers
6) **Ensure AI services remain open**

WHERE? *CADA, AI Act, Chips Act 2.0 and DMA*

CONSTRUCT A DEVELOPMENT STRATEGY FOR DATA CENTRES IN EUROPE THAT COMBINES SOVEREIGNTY AND SUSTAINABILITY

HOW:

7) **Inform government and investment choices:** make transparency and data-driven regulation assets for the development of data centres in Europe
8) **Strengthen European coordination between digital, energy and infrastructure policies to support the development of data centres**
9) **Encourage a coordinated territorial approach of data centre deployment**

WHERE? *Energy Efficiency Directive, DNA and CADA*