Sustainability & Connectivity

Does Connectivity Serve Sustainability And Is It Sustainable Itself?

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The Politics of Connectivity – Digital divide, internet governance and cyberwar in the 2020s

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Presentation by: StR´ in D. Kindl

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Sustainable Development Goals

Source: Canva (Accessed: 05/31/26)

Hypothesis 1:

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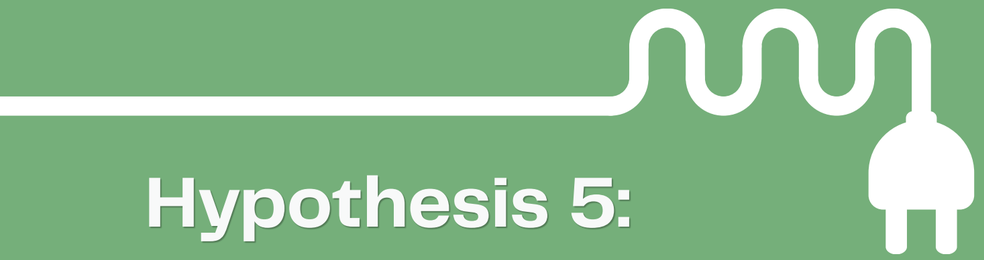

Hypothesis 5:

A **Zero-AI-Waste-Charter** would be attractive for countries and other stakeholders to join, because it would make the hidden environmental cost of AI much more visible and it provides a clearer way to judge how carbon-intensive AI really is.

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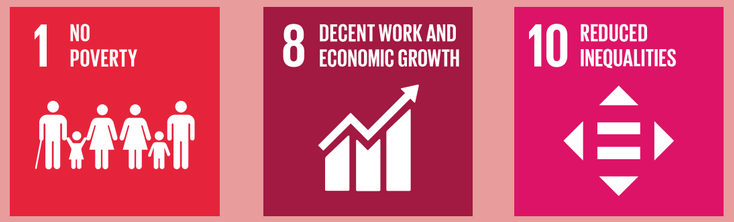


Sustainability Index

2. The Good News

Connectivity can be a **strong driver of human and social progress**

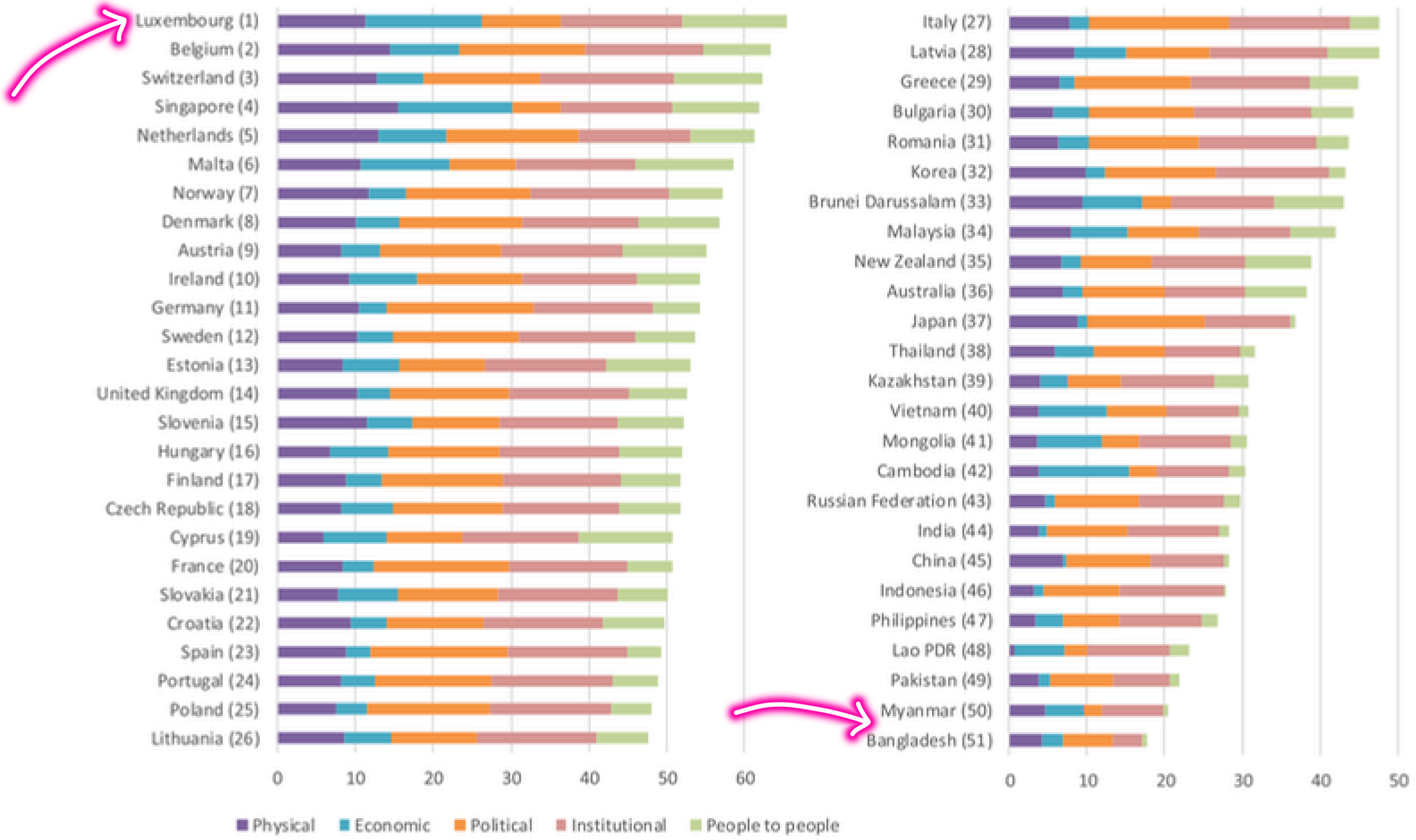
Remarkably **high correlation** of 0.85 **with social sustainability metrics**

11 of the 17 SDGs are **positively and significantly linked to connectivity**

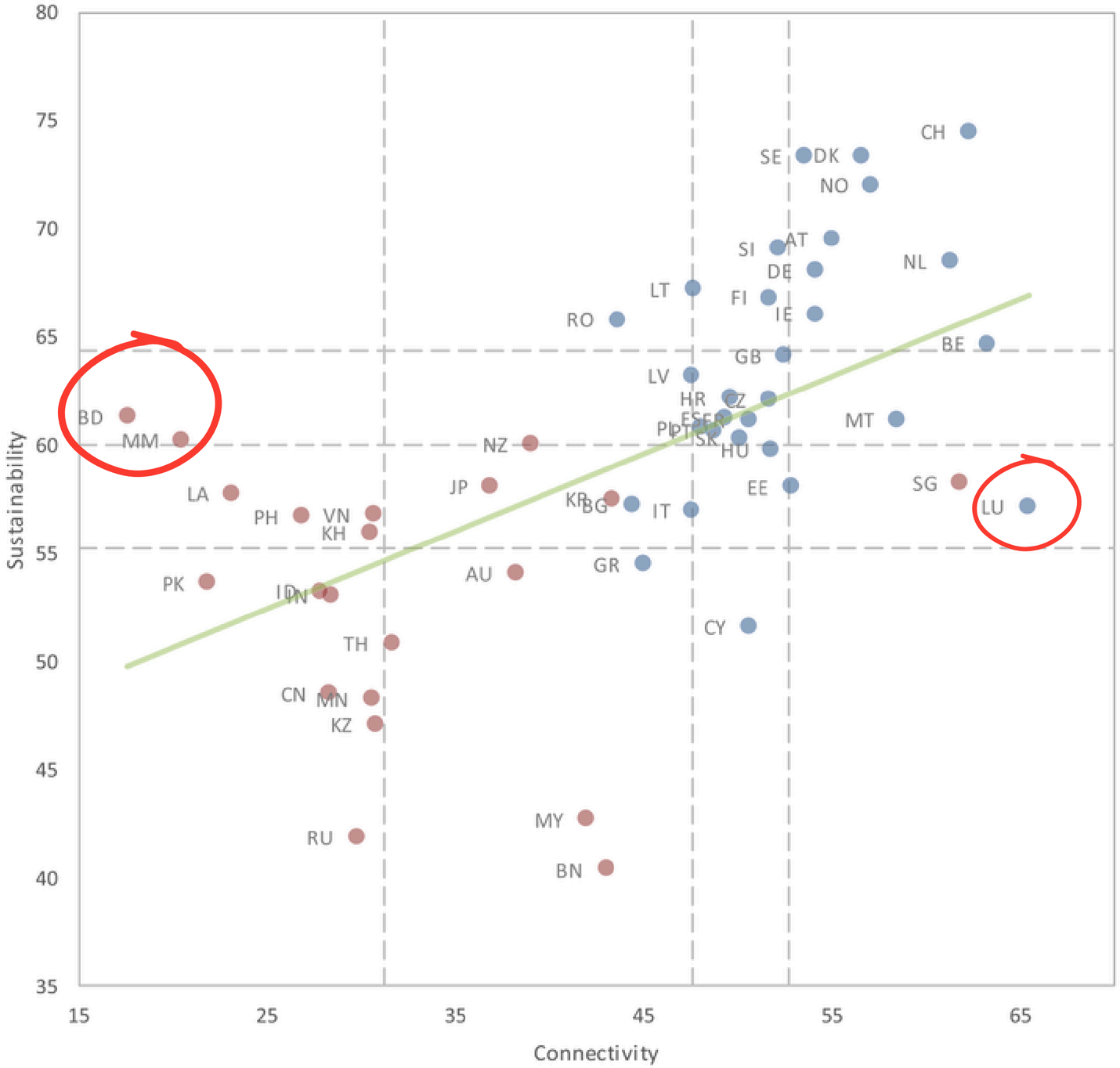
The Reality Check

The statistical relationship between **high connectivity and SDG 12** is strongly **negative** (–0,77)

As countries become **more connected**, their patterns of **consumption** often become **ressource-intensive** (greater waste and higher emissions)



Source: Becker et all., p. 6



Source: Becker et all., p. 7

5. IoT and IoW

Internet of Things (IoT)

= a network of **connected devices** that are embedded in everyday environments

Internet of Waste (IoW)

= highlights the hidden environment side-effects of the rapidly expanding Internet of Things (IoT)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34 kg


AI-Generated | Microsoft Copilot

4. The Bad News

Source: Regenwald Schützen (Access: 06/04/2026)

Source: TAZ (Access: 06/04/2026)

Source: Deutschlandfunk (Access: 06/04/2026)

Source: Die Zeit (Access: 06/04/2026)

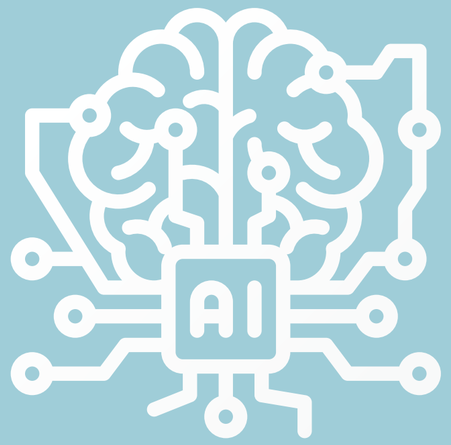
The more IoT devices are connected,

the more we tend to consume resources

and generate waste

IoT can be a green enabler, but it can also become an IoW if we ignore the embodied carbon and material intensity of the hardware.

AI



Training a state-of-the-art AI-Model can

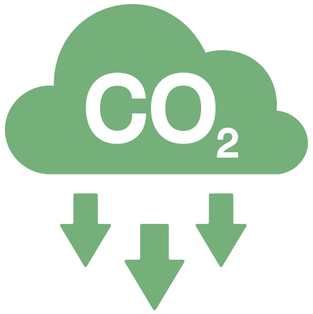
emit 300 t of Carbondioxide

Internet of Waste is nowadays both

material and computational

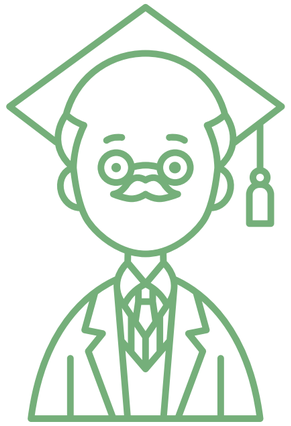
It must be addressed equally to avoid unsustainability

5 .
Scope 4

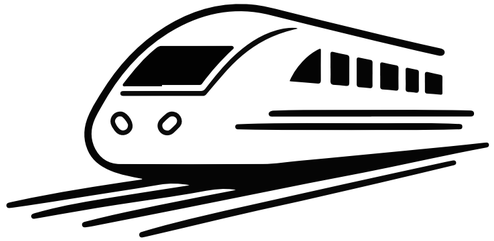


avoiding emissions

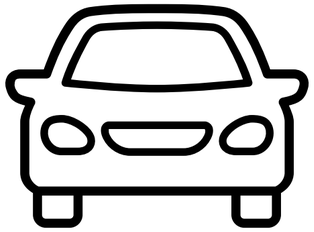
= carbon reductions that arise, because digital services make physical travel unnecessary



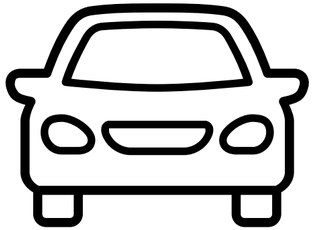
240 kg of CO_2



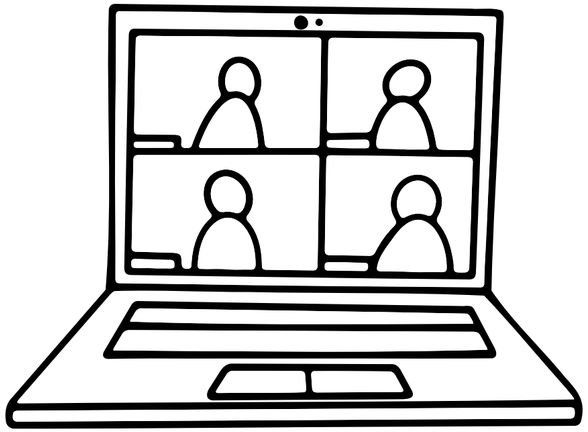
64 kg of CO_2



192 kg of CO_2



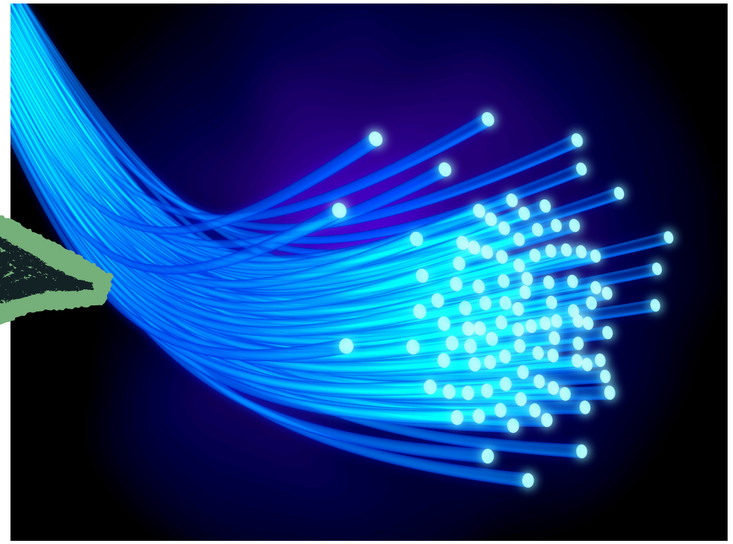
45 kg of CO_2



45 kg of CO_2

Why does Scope 4 matter?

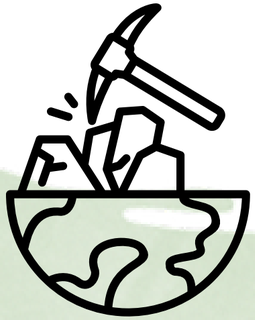
- It helps us see the indirect climate benefits of digital infrastructure
- It offers telecom operators a way to show that their services can reduce emissions elsewhere, which may improve how their overall climate impact is assessed
- It highlights an important data gap: Companies overstate or understate their indirect impact



Power Purchase Agreement

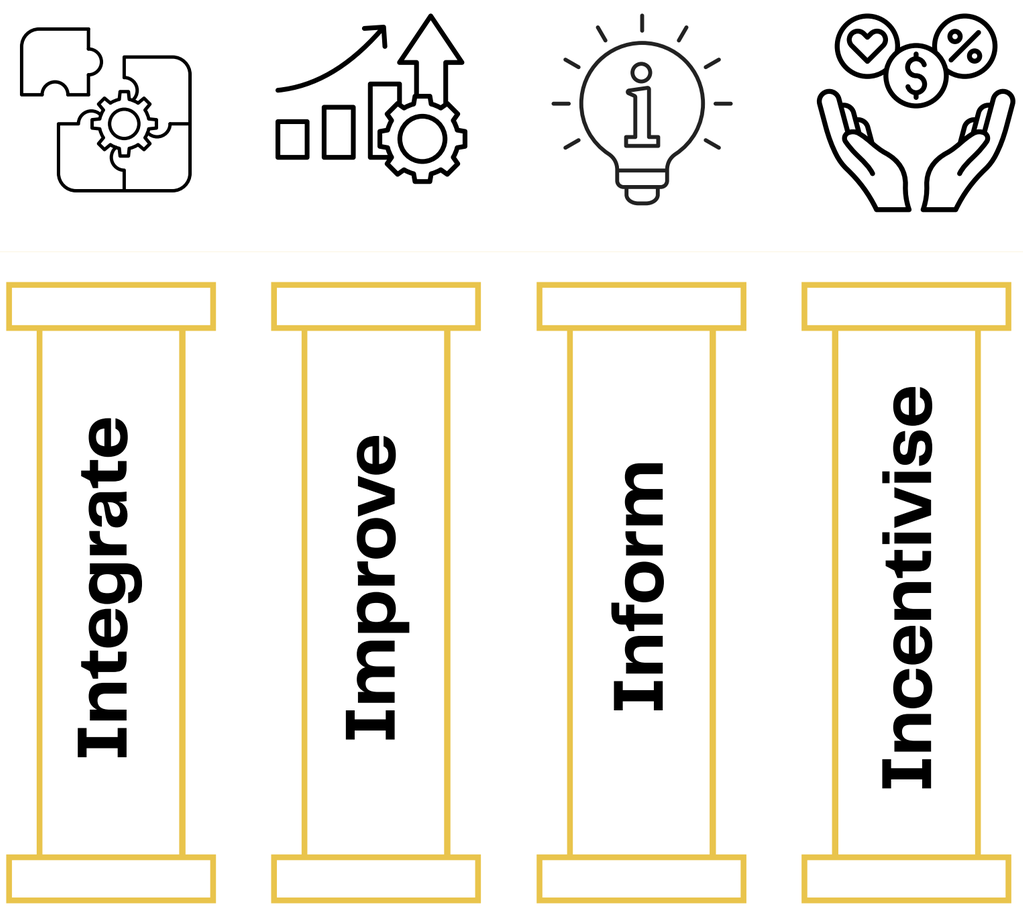
= a long-term contract between an energy buyer and an energy producer, where the buyer agrees to purchase electricity from the producer at a pre-agreed price over a defined period (typically 25 years)

Urban Mining



= refers to the process of reclaiming raw materials from man-made objects, buildings, and infrastructure

6. Four Pillars



Four pillars to **underpin sustainable internet poilicymaking**

The EU And Sustainable AI

- **AI act**

… **promote low-carbon** data canters, green cloud procurement […]

… **support energy-efficient** algorithms

… encourage **disclosure of environmental footprints for large models and services**

… **reduce AI´s own footprint** and **use AI to accelerate climate and sustainability goals**

… **measuring footprints** regularly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Zero-AI-Waste Charter

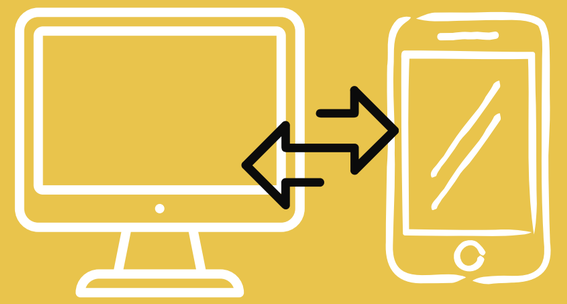
own Proposal

Pillar 1: Hardware acoountability

Pillar 2: Strict computational boundaries

Pillar 3: Stronger data minimalization

Practical Steps



12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Does Connectivity Serve Sustainability And Is It Sustainable Itself?

economically ✓

ecologically ✗

socially ✓

Conclusion

Connectivity can serve sustainability, but it only becomes sustainable itself if we change the system through policy action, circular-economy thinking, clean energy, and clear rules that reduce waste

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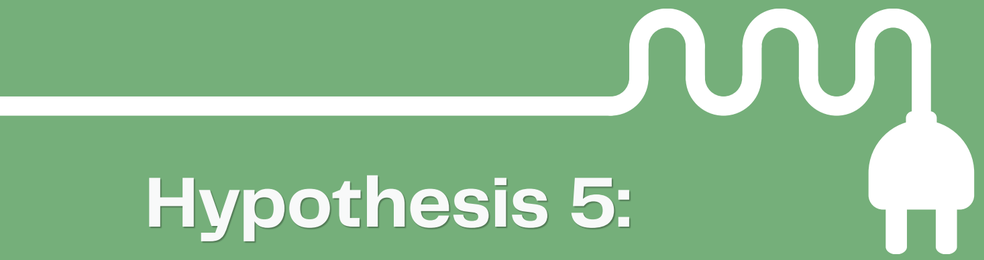

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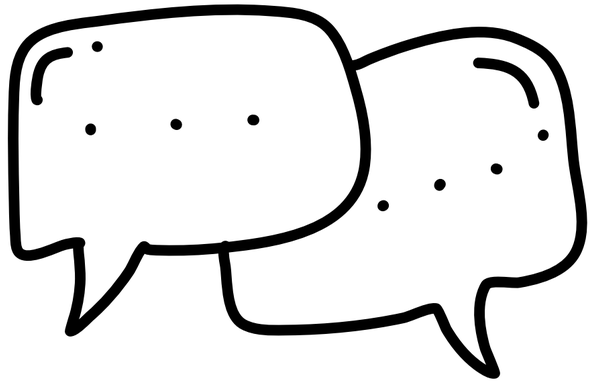
Discussion

1. **How could the “Internet of Waste” concept influence future EU digital-policy agendas, especially regarding the upcoming NGI Forward report?**

2. **In what ways might the combination of the “Internet of Things” and the “Internet of Waste” shape future energy policy?**



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