Scaleway

Empowering Devs to Act: Bringing Environmental Metrics into Infrastructure Decisions

Elise Auvray - Product Manager Environmental Footprint a Scaleway

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A Big, Open & efficient European provider of cloud & AI

And many others: Stancer ITRUST. OPCORE

Why measure the impact of the Cloud?

Digital and AI: a growing industry with increasingly significant environmental impacts

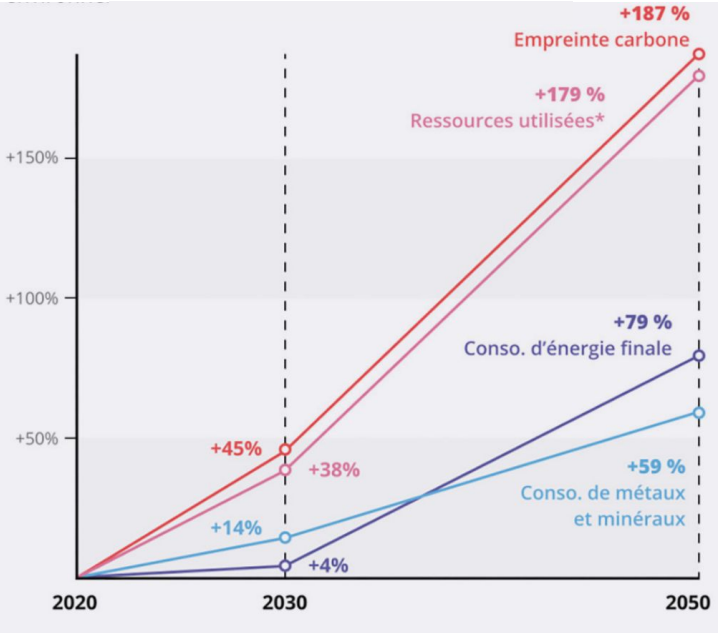
- ➔ The digital sector represents **4% of global greenhouse** gas emissions
- ➔ Global electricity consumption in data centers represents approximately **1.5% of global electricity demand** with a **growth rate of 13% per year** since 2019.

Artificial intelligence further increases the impact of cloud computing

- ➔ **If current trends continue, territorial emissions from French data centers would reach 1.5 MtCOe in 2030, an increase of 67% compared to 2020.**

Source : Shift project final report (2025)

Digital and AI: a growing industry with increasingly significant environmental impacts



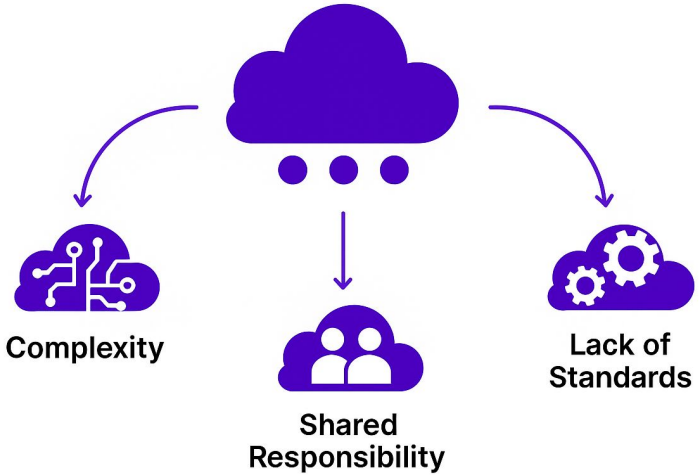
➔ If nothing is done, by 2050

- the carbon footprint could **triple**
- energy consumption could **double**
- resources used could almost **quadruple**

Source: ADEME - ARCEP 2023 - "Analyse prospective de l'empreinte environnementale du numérique en France aux horizons 2030 et 2050."

Pourquoi c’est si difficile de mesurer l’impact du cloud ?

- ➔ Le cloud semble “immatériel”… mais il repose sur **une chaîne physique complexe**
- ➔ Il n’existe **pas de méthodologie standard** utilisé par tous les Cloud providers
- ➔ Données parfois **absentes, incohérentes, fermées ou non standardisées**



Our goal

*Provide **accurate and comprehensive assessments** of the environmental footprint of cloud and bare metal services,*

*ensuring customers have **easy access to and understanding** of data to measure, report, and reduce their cloud-related emissions.*

🔍 Transparency

- Based on PCR (LCA) methodology
- including the impact at **all stages of our service lifecycle** and the impact related to actual use by service users

🤓 Education and Support

- Help our users **understand, control,** and **reduce their impact**

Our methodological and technical choices

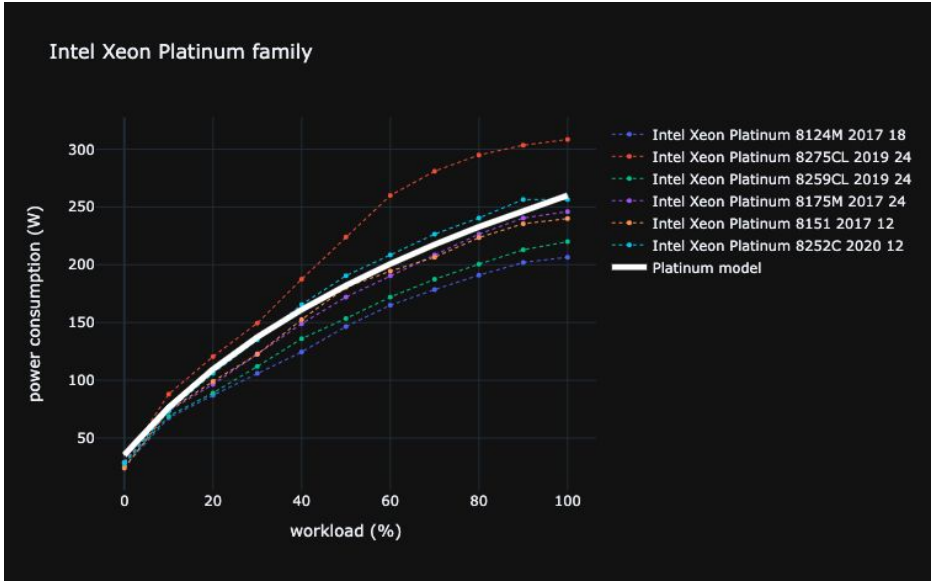
	Scope 1	Scope 2	Scope 3				Autre
	Fossil energy	Electricity	Hardware	Datacenter	Network	Employee Impact	Water (WUE)
Perimeter	Diesel backup generators, etc.	Electricity consumed	Equipment - Servers, storage devices, etc.	Buildings - Rooms where Scaleway is located	Network equipment park in DCs	Transport, administrative buildings, etc.	Amount of water consumed to cool DCs
Distribution of the weight of emission sources	2%	36%	62%				

Source: "Greening Digital Companies" study, ITU & World Benchmarking Alliance 2024

Our methodological and technical choices

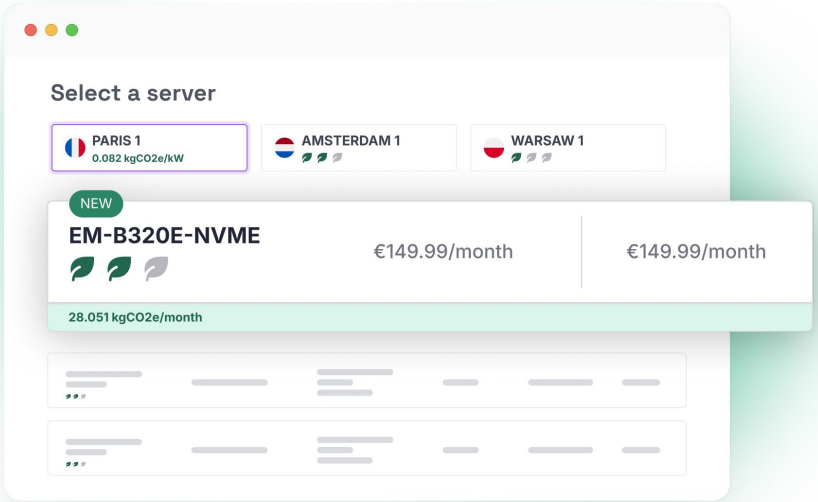
Data based on actual usage

- ➔ We use CPU utilization to determine a virtual machine's power consumption.
- ➔ A CPU's power consumption relative to its utilization is not linear.
- ➔ We base this on data calculated by Boavizta.

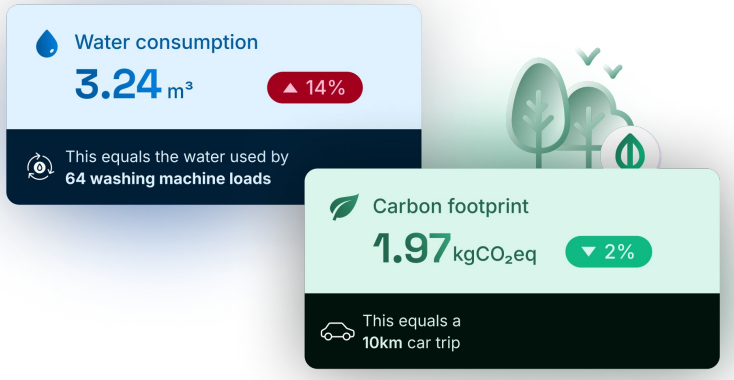


Concretely, what does that look like?

Estimate data



Monthly reports

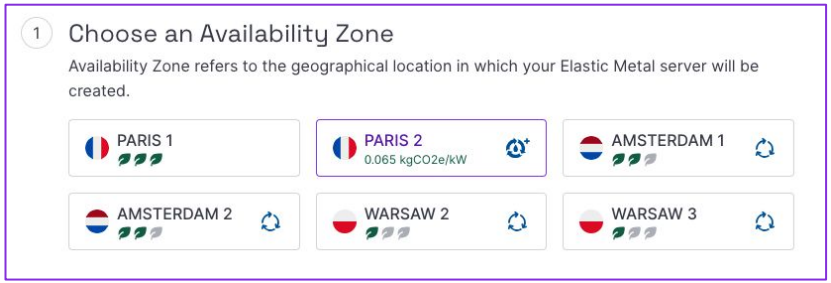


Concretely, what does that look like?

User API with daily row data (json format)

```
"zones": [
  {
    "zone": "fr-par-2",
    "total_zone_impact": {
      "kg_co2_equivalent": 3.633786,
      "m3_water_usage": 0.003593
    },
    "skus": [
      {
        "sku": "/storage/block/volume-low-latency-5k/fr-par-2",
        "total_sku_impact": {
          "kg_co2_equivalent": 3.633786,
          "m3_water_usage": 0.003593
        },
        "service_category": "storage",
        "product_category": "block_storage"
```

What we learned



Take environmental impact data into account when choosing infrastructure:

At the availability zone level, for example:

Paris-2 = 0,065 kgCo2e/kwh
Warsaw-2 = 1 kgCo2e/kwh

x 16

What we learned

PRO2-S 0.00645 kgCO2e/hr	€0.219/hr	8	32 GB	Block	1.5 Gbps

Name	Price (excl. tax.)	CPU(s)	Memory	Disk(s)	Bandwidth
EM-A115X-SSD 0.015 kgCO2e/hour	€0.091/hour	1x Intel Xeon E3 1220 or equivalent 4C/4T 3.1 GHz	32 GB	2 × 1.02 TB SSD	500 Mbps (to 1 Gbps*) public 1 Gbps private

Name	Price (excl. tax.)	CPU(s)	Memory	Disk(s)	Bandwidth
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NEW EM-I215E-NVME 0.05 kgCO2e/hour	€0.904/hour	1x AMD EPYC 7313P 16C/32T 3 GHz	256 GB	2 × 1.92 TB NVMe	1 Gbps (to 10 Gbps*) public 10 Gbps private

Includes faster installation and custom partitioning.

At the product level:

PRO2-S on Paris-2: 0,00645 kgCo2e/hour

EM-A115X-SSD on Paris-2: 0,015 kgCo2e/hour

x 2,5

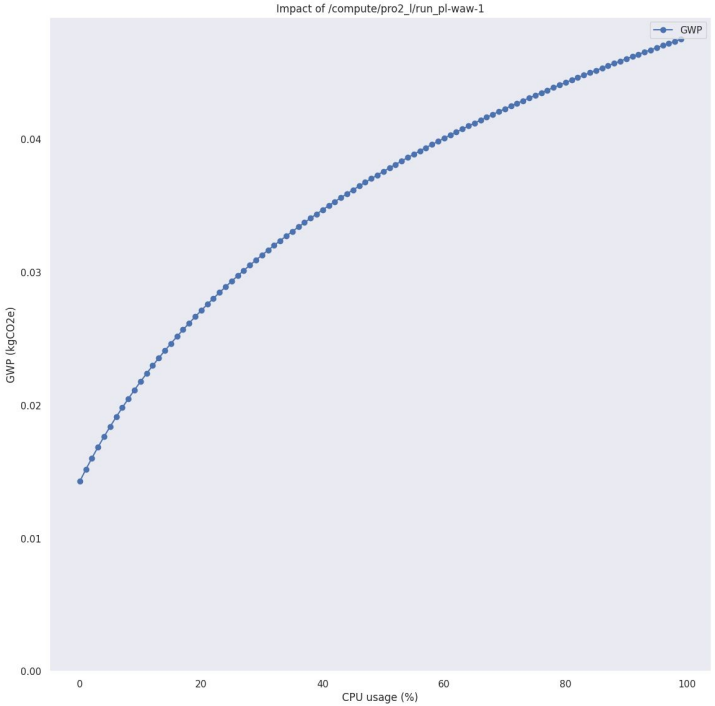
At the resource level:

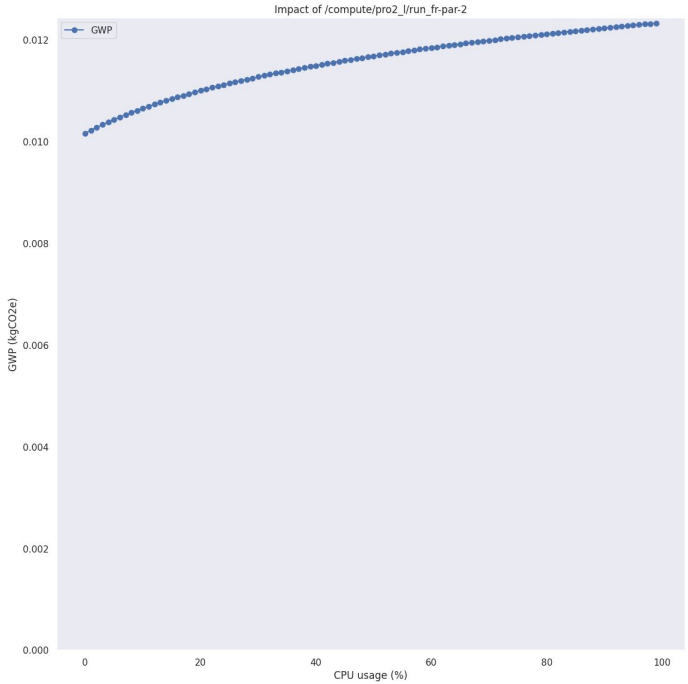
EM-A115X-SSD on Paris-2: 0,015 kgCo2e/hour

EM-I215E-NVME on Paris-2: 0,05 kgCo2e/hour

x 3,5

What we learned





Why is this important?

- ➔ **Reduce** long-term operational costs
- ➔ Positioning yourselves as a **leader** in markets where sustainability is becoming a **key differentiator.**
- ➔ An opportunity to **build responsible digital technology with a sustainable future.**

What indicators can you integrate today to make your infrastructure more sustainable?

Q&A