Measuring the environmental impact of the digital ecosystem: a new chapter of Arcep's regulation

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Digital environmental footprint : a new chapter of regulation for Arcep

- **the French Electronic Communications Regulatory Authority**
  - Economic regulation of networks infrastructures since 1997
  - Digitalization as a way to decarbonize other industries (IT for Green)

- **2019-2020: Green for IT as a new concern**
  - Digitalization $\Rightarrow$ Growth in data volumes, increased network and data centers capacities, rapid renewal of devices, low recycling rates
  - Increased awareness in society (e.g. 5G frequencies) and questions from decision makers

- **Arcep started to address the environmental footprint of digital technologies**
  - Environmental data collection and Annual surveys *"Achieving digital sustainability"*
  - Assessment of the digital environmental footprint in France in 2020, 2030 and 2050 (government mission)

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Arcep's data collection and annual survey « Achieving digital sustainability »

- **Before being given a new legal mandate**: environmental data collection from main telco operators (2020) --> **Annual survey "Achieving digital sustainability"**

- Objectives: build and monitor over time environmental indicators from data directly collected by Arcep from digital players, using robust and transparent methodologies to:
  - **Improve measurement** to better assess environmental issues, **inform decision makers** and allow the implementation of appropriate measures
  - **Provide incentives** for economic actors to behave virtuously
  - **Enpower users** and make tools available to the general public

- End of 2021: legal mandate to collect environmental data from an extended scope of digital players
  - Annual survey Editions 1 and 2 on telecom operators published in 2022 and 2023
  - Edition 3: scope extended to terminal manufacturers and data centers operators (March 2024)
  - Next step: mobile equipment manufacturers

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Arcep's data collection and annual survey « Achieving digital sustainability » Edition n° 3
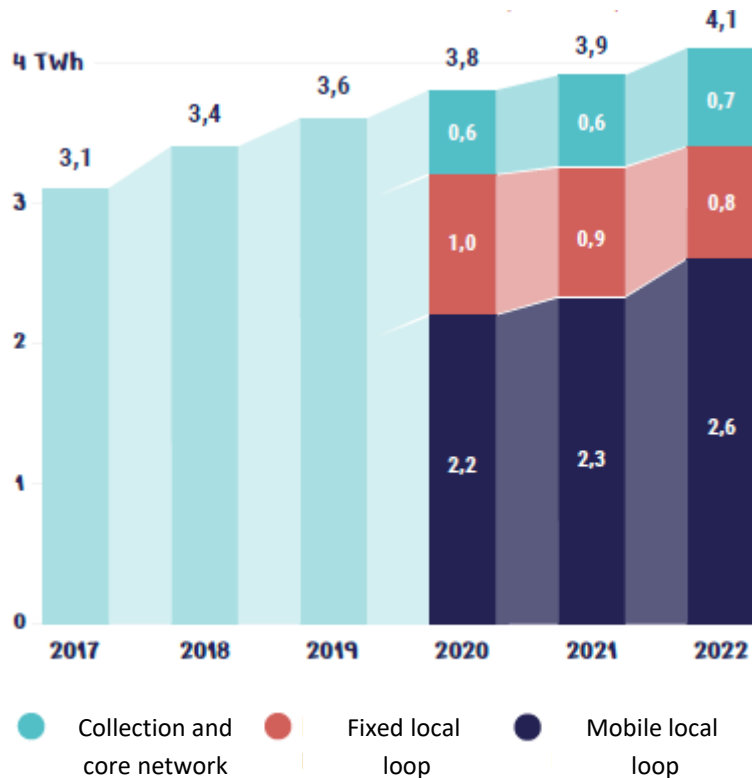
- **Telco operators**

- **Networks energy consumption: 4.1 TWh in 2022 (+7%)**
  - Growth driven by mobile networks
  - Decreasing consumption of fixed local loop driven by transition from copper to more energy efficient optical fiber
- **Electricity consumption of TV boxes and set-top boxes: 3.3 TWh in 2022**
  - Electricity consumption of all boxes = 3 times higher than fixed network consumption
- **Greenhouse Gas (GHG) emissions:** 382,000 tons CO_2eq in 2022 (+2 % over one year)

- **Data centers operators**

- **Total electricity consumption: 2.1 TWh in 2022 (+15%)**
  - As compared to +0% in the tertiary sector
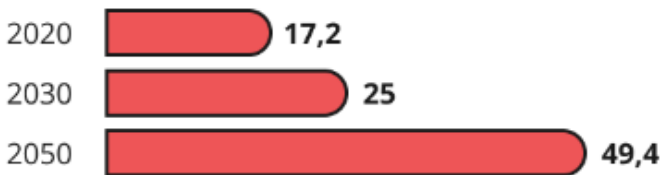- **Greenhouse Gas (GHG) emissions**: 95,000 tons CO_2eq in 2022 (+14%)

Energy consumption of fixed and mobile networks

Collection and core network · Fixed local loop · Mobile local loop

A broader picture: ADEME-Arcep assessment of the digital environmental footprint in France

- **Environmental impacts of digital services in France in 2020**
  - Electricity consumption : 48.7 TWh (10% of annual electricity consumption in France)
  - 2.5 % of the French carbon footprint (i.e. 17 Mt CO_2 eq)

- If no action is taken to contain ICT's growing impact on the environment, **electricity consumption of the digital ecosystem could double** between 2020 and 2050 **and digital carbon footprint could triple.**

- ➤ Necessary commitment of all stakeholders for a sustainable digital economy: everybody has to take its part for a digital sustainability

- ➤ 2021 **Law aimed at reducing the digital sector's environmental footprint** (REEN)
- ➤ **Government roadmap on "Digital sector and environment"** with objectives set based on Arcep's indicators

Carbon footprint
(million tonnes of CO2 eq.)

Year	
2020	17,2
2030	25
2050	49,4

Energy consumption
(in TWh)

Year	
2020	52
2030	54
2050	93

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Thank you for your attention

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To go further on the digital environmental footprint:

Annual survey « Achieving digital sustainability »

ADEME-Arcep press kit