Press release

ENVIRONMENT

The environmental impact of connected objects and devices:
The Technical experts committees, overseen by Arcep and ADEME, publishes a report proposing a harmonised measurement methodology

Paris, 2nd July 2024

The Technical experts committee on measuring the digital environmental footprint, created by Arcep and ADEME in 2020, is publishing its second report, titled "The scope of IoT devices with respect to ICT", which is also available in English. This independent committee, which Arcep and ADEME assembled to inform their investigation into the technical issues surrounding digital technologies' environmental footprint, includes digital industry experts (network and data centre operators, equipment suppliers, content and service providers), environmental think tanks and researchers.

In its first report, the Experts committee noted that connected objects and devices could account for an increasingly large share of Information and Communication Technologies'[1] (ICT) carbon footprint. It also underscored that particular attention needed to be paid to calculating this footprint, to avoid double counting (attributed to both the ICT sector and another sector for which the device is used) or not being counted at all.

The Experts committee's proposals will make it easier to monitor the emissions generated by connected devices by allocating all or a portion of their GHG emissions to ICT, depending on their degree of proximity with the sector

At a time when society is being increasingly digitalised, the goal is to be able to monitor the environmental impact of connected devices and objects that belong to the ICT sector (e.g. smartphones, computers and tablets), and those that should be allocated to economic sectors on which the connected devices depend (e.g. the transportation sector for connected vehicles or home appliances for smart washing machines).

This second report, which is being published today, proposes a methodology for categorising and calculating connected devices and objects' carbon footprint

This report proposes a methodological framework for categorising and calculating connected devices according to their proximity to the ICT sector[2], and a method for allocating these devices' environmental impact.

To this end, a series of questions on these devices' connectivity level, and how integral connectivity is to their operation, guides experts through a decision tree. This tree helps assess each type of device's proximity to the ICT sector then, based on this categorisation, the report lays out a method for determining the percentage of the device's overall environmental impact that must be allocated to the ICT sector.

A harmonised methodology

The method chosen by the Experts committee is based on the framework developed by the Organisation for Economic Cooperation and Development (OECD) to represent the "digital economy" with respect to the ICT sector, to work within a standardised framework. It also provides the ability to harmonise the methods used to measure connected objects and devices' environmental footprint, for every sector.

Arcep is committed to carrying the Committee's work to the OECD and the International Telecommunication Union (ITU).

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[1] The OECD defines the ICT sector as "a combination of manufacturing and services industries that capture, transmit and display data and information electronically".

[2] Four main categories have been defined to this end: "Media & Entertainment", "ICT-native", "ICT-enabled" and "non ICT-enabled".

Associated documents

- [Report on "The scope of IoT devices with respect to Information and Communication Technologies (ICT)")](#)
- [Executive Summary](#)
- [Report Table of Contents](#)

Overseen by Arcep and ADEME, the Technical Experts Committee seeks to promote greater mutual understanding between digital industry stakeholders and environmental protection actors

Chaired by Catherine Mancini, of Nokia, the Committee is made up of digital industry experts (network and data centre operators, equipment suppliers, content and service providers), researchers and environmental think tanks. The Committee's experts seek to provide technical insights and offer recommendations on topics and issues relating to measuring and assessing the digital environmental impact.

The Committee's analyses inform the work that Arcep does as part of its "Achieving digital sustainability platform," and particularly its annual "Achieving digital sustainability" survey which compiles indicators collected from telecom operators, to monitor the evolution of their environmental footprint.

In 2023, the Committee published a first report on "Assessing ICT's impact on the environment: methodological gap analysis".

Find out more about the Technical experts committee on measuring the digital environmental footprint.

The ADEME – Arcep study on digital technology's environmental footprint in 2020, 2030 and 2050 had already, back in 2023, revealed that user devices account for the lion's share of ICT's environmental footprint. In 2020, the Internet of Things (IoT) represented close to 4% of this building block's carbon footprint: the study estimates that this percentage could reach close to 25% by 2050. The proliferation of these connected devices will also have an impact on networks and data centres.

Arcep at a glance

The Regulatory Authority for Electronic Communications, Postal Affairs and Press Distribution (Arcep), a neutral and expert arbitrator with the status of independent administrative authority (IAA), is the architect and guardian of internet, fixed and mobile communications and postal networks in France.

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