ITUEvents

Expert Group on Telecommunication/ICT Indicators
Expert Group on ICT Household Indicators
Meetings 2025

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Advancing Monitoring of ICT Sector Climate Impact at National and Industry Levels

Importance of ICT sector climate data

- Precise emission estimates for ICT are elusive, ranging from 1.5-4% of global emissions (similar to aviation).
- Unlike high-emitting sectors (transport, energy, forestry) with established measurement, ICT lacks comprehensive approaches.
- Historical priorities, data complexities, and lower initial emissions contributed to limited ICT measurement.
- Lack of regulated GHG and energy tracking hinders policy-making, target setting, and progress.

Accurate data is crucial for understanding ICT's environmental impact.

ITU is spearheading work to collect and disseminate reliable GHG emissions and energy use data from the ICT sector, at the company and country level.

Empowering informed policy decisions and sustainable practices.

Monitoring ICT Industry Climate Impact

Greening Digital Companies report

Monitors emissions, energy use and climate commitments of 200 digital companies via an annual industry assessment report in partnership with the World Benchmarking Alliance

Greening Digital Dashboard

Provides open data on emissions, energy, and climate targets to drive accountability and progress

https://greeningdigital.itu.int

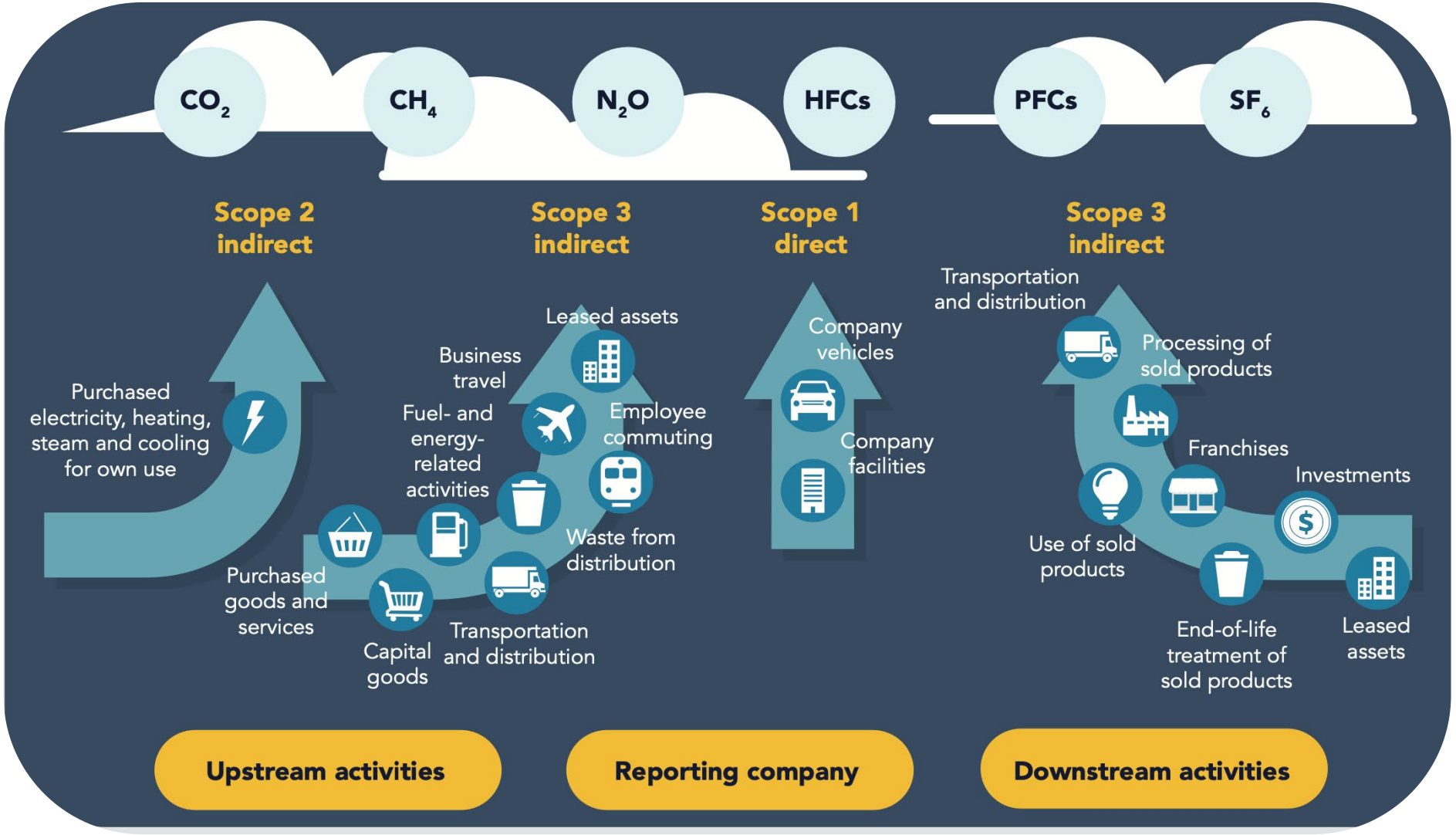
Objectives

- Monitor emissions and energy use
- Assess and benchmark climate commitments
- Strengthen transparency & accelerate action

What are emission Scopes?

The report helps track companies targets and progress to reduce emissions and energy use.

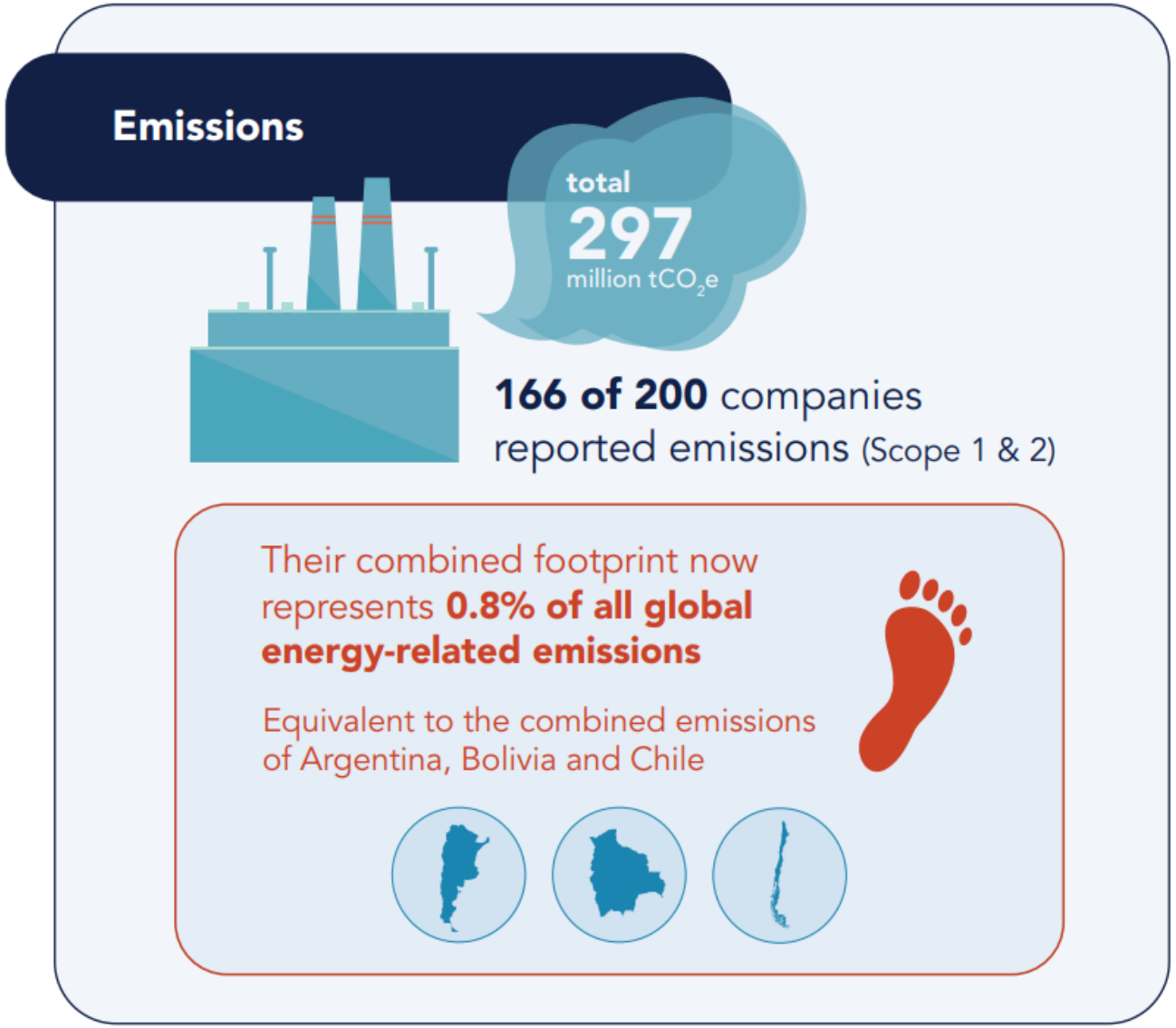
Covers Scope 1, 2 and 3 emissions.



Adapted from: https://ghgprotocol.org/standards/scope-3-standard

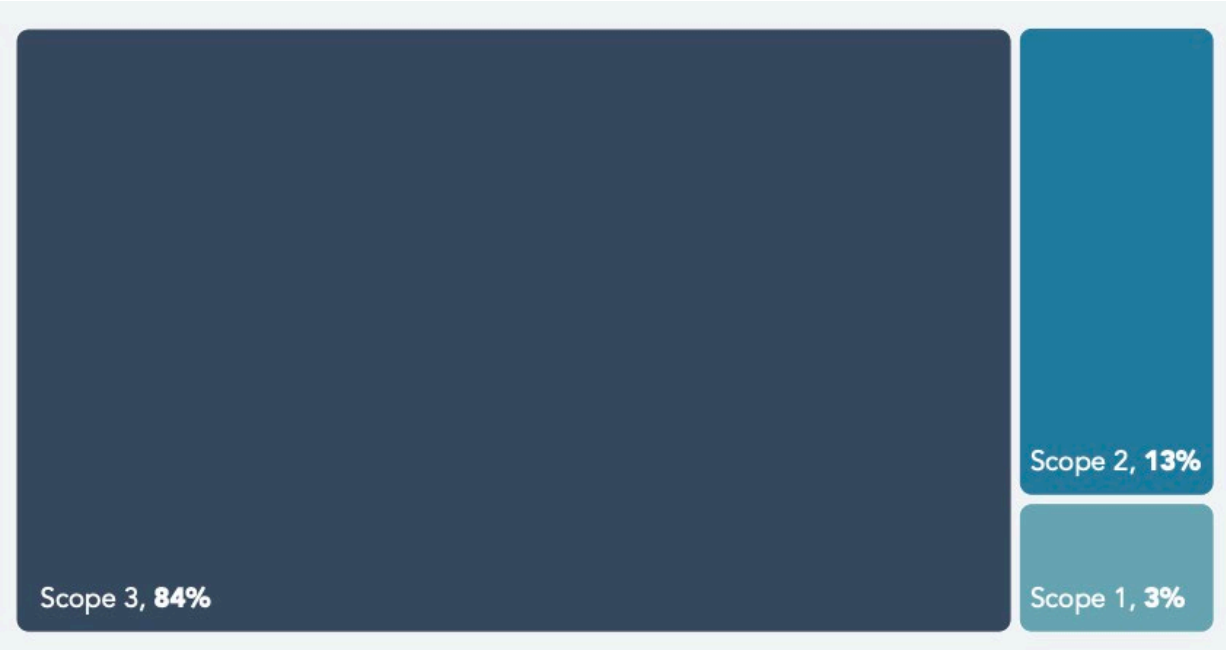
Scope 1 & 2 emissions

- 166 companies reported 297 million tCO_2e in Scope 1 and 2 emissions in 2023, a 1.4% increase from 2022.
- This represents 0.8% of global energy-related emissions, equal to the combined annual emissions of Argentina, Bolivia, and Chile.
- The emissions from the sector represents 0.8% of global energy-related emissions.
- Emissions are highly concentrated - the top 10 emitting companies are responsible for 53% of all direct emissions.



Scope 3 emissions

Scope 3 accounts for most emissions, 106 out of 200 provide a complete Scope 3 inventory

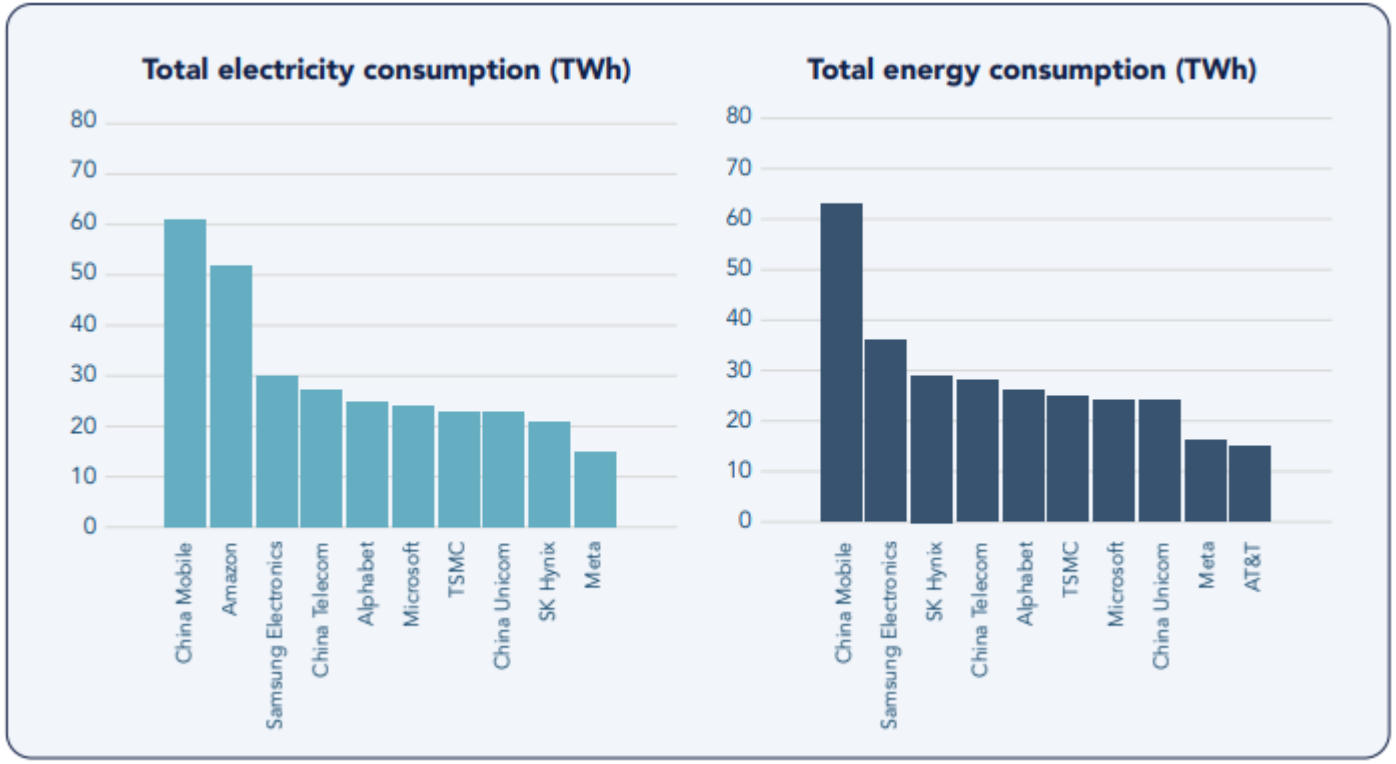


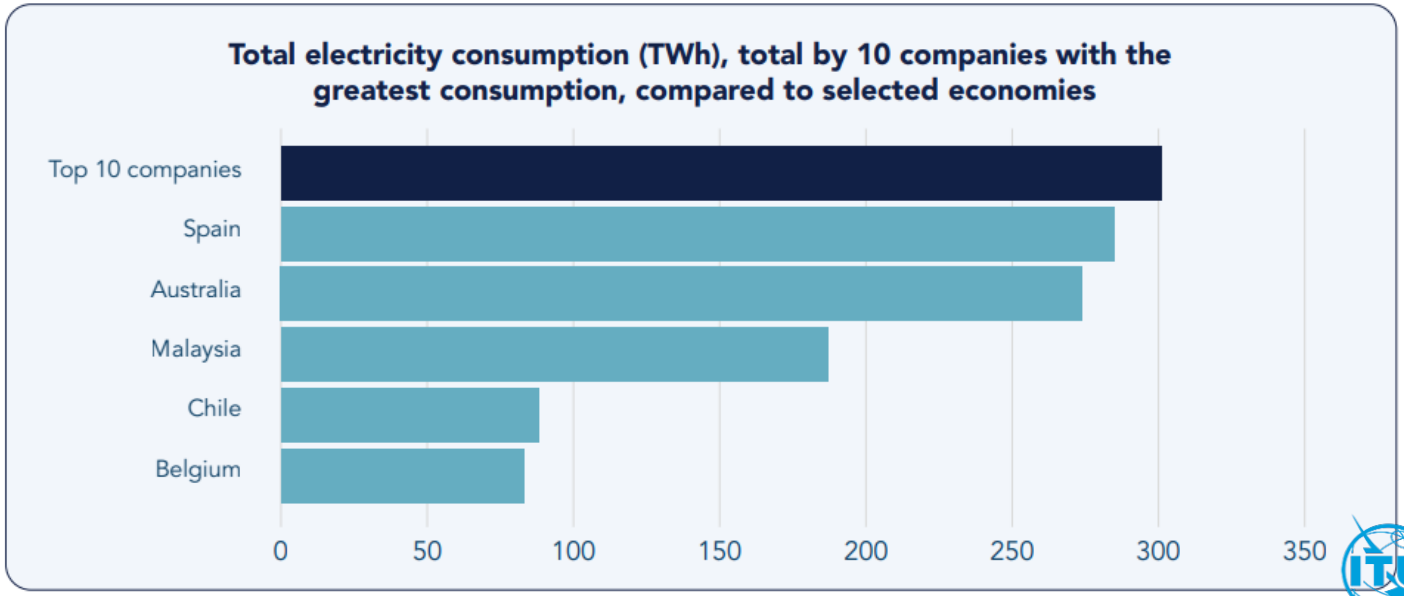
Note: When available, market-based Scope 2 emissions, which reflect purchased renewable energy and contractual agreements, were used. If market-based data were not reported, location-based Scope 2 emissions, which reflect the average emission intensity of the local grid, were used instead. This distinction is important, as market-based emissions can appear lower owing to renewable energy credits and power purchase agreements, whereas location-based emissions provide a clearer picture of actual grid dependency.

- Scope 3 emissions - indirect emissions across the value chain - account for the majority of digital companies' climate footprint.
- In 2023, 106 of 200 companies disclosed all relevant Scope 3 categories —up from 75 in 2022.
- Scope 3 emissions were over 5× higher than Scope 1 and 2 combined.
- Challenges remain:
  - Limited full disclosure, inconsistent methodologies, incomplete supplier data and category coverage.
  - Hinders transparency and accountability.

Electricity & energy consumption

- 164 digital companies reported electricity consumption in 2023, accounting for 581 TWh of electricity (2.1% of the global total). This is a 12.2% increase from 2022 data.
- 173 companies reported data on energy consumption, reaching 681 TWh.
- Electricity demand is highly concentrated, with 10 companies responsible for 51.9 % of total electricity use.

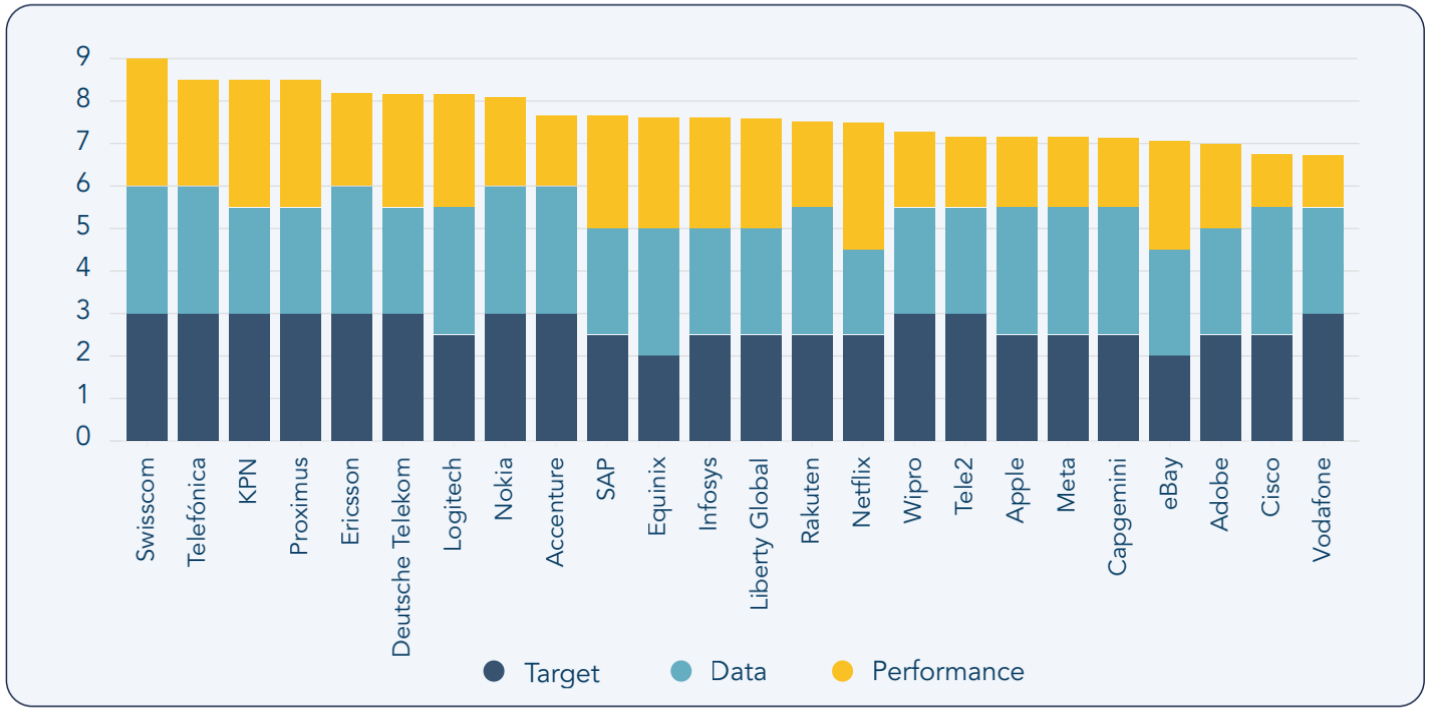




Climate assessment

- 94 companies scored ≥50% in the assessment, up from 70 in the previous year.
- 24 companies scored ≥75% (2 fewer than last year).
- 8 companies scored 90% or higher, up from 3 in the previous year.
- These top performers are mostly headquartered in Europe or the United States.

Companies scoring at least 75% on the climate assessment (n=24)



Note: After the assessment, VMWare was acquired by Broadcom in late 2023.

AI, energy use and GHG emissions

- The rapid rise of AI is increasing electricity demand and GHG emissions.
- AI workloads, particularly generative AI models, require massive compute resources.
- AI-driven companies saw a 150% rise in operational emissions since 2020, driven by expanding data infrastructure and energy use.
- Data centre electricity consumption has been growing at 12% per year since 2017, outpacing total electricity consumption by a factor of four according to IEA.

Recommendations

The ICT sector holds the innovation and influence to drive climate action, but ambition must be matched by credible, science-aligned efforts.

- Strengthen climate reporting, especially for Scope 3 and publish transition plans.
- Measure and disclose AI impact.
- Collaborate across sectors to accelerate digital decarbonization.
- Scale renewable energy adoption.

National ICT Sector Climate Monitoring

ITU assists countries in monitoring ICT sector climate impact, with a particular focus on GHG emissions and energy use through technical support and indicator development.

Objectives

Harmonize climate monitoring indicators that are feasible for countries to collect.

Training ICT regulators & relevant stakeholders in data collection, regulatory roles and target setting.

Develop a comprehensive dashboard for national emission tracking.

Supports drafting of national digital net-zero transition plans and target setting.

Arcep Case Study - France

Joint best practise case study by ITU and the World Bank, focusing on lessons from Arcep's approach to environmental data collection.

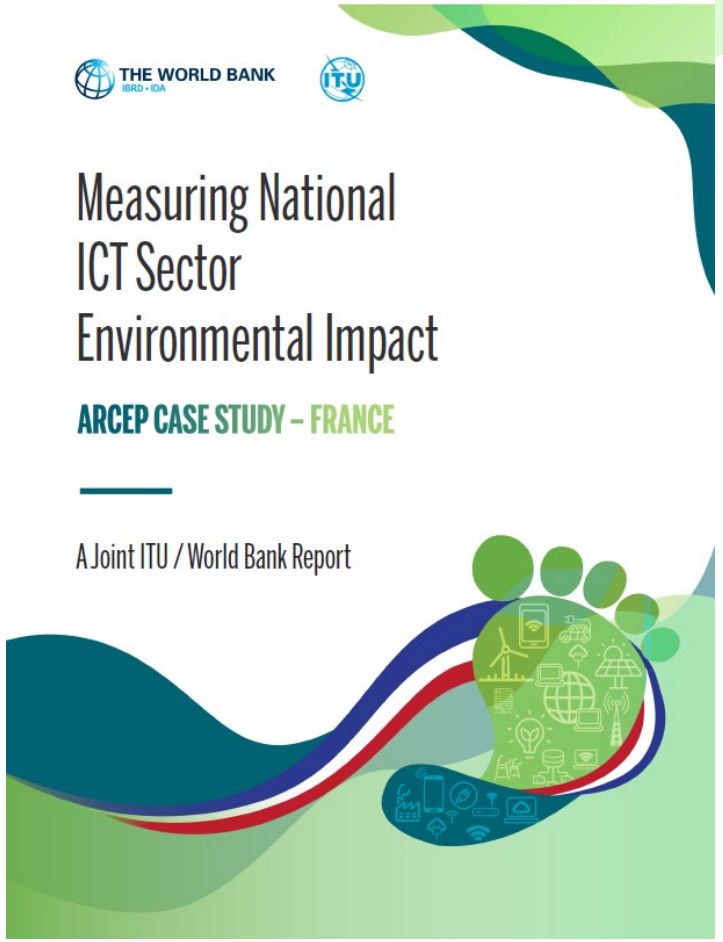
✅ Initiating Sustainability Data Collection – How Arcep started the process

✅ Legal Framework – Required legal adaptations to enable data collection

✅ Industry & Sector Coverage – Which companies and sectors are surveyed

✅ Data Outputs & Insights – Results and impact of Arcep's efforts

A replicable model for effective national environmental data collection



Data collection approach

Company collection

Arcep defines selection criteria based on turnover or number of subscribers, covering:

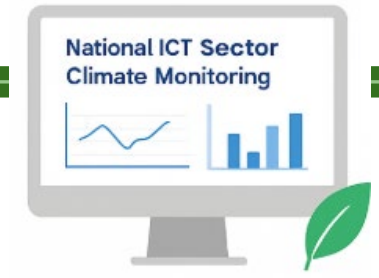
- Main telecom operators.
- Leading data center operators.
- 70-90% of the market for digital devices companies.

Arcep has the flexibility to expand the number of companies surveyed in the future.

Type of data solicited

Arcep collects comprehensive environmental data, including:

- GHG emissions (Scope 1, 2, and 3)
- Energy and water consumption
- E-waste and recycling rates
- Use of rare earth metals in ICT manufacturing
- Standby and operating power of digital devices.



In future

Arcep wants to continue to enhance environmental data collection.

This includes fixed network equipment suppliers that manufacture fiber optic cables and to incorporate new indicators for some of the market players that are already being queried.

Case study recommendations

Obtain a data collection mandate
Secure a clear legal mandate. Arcep gained government backing by publishing a report highlighting the importance of environmental data collection.

Engage stakeholders early
Collaborate with industry, environmental experts, and associations to shape data collection and boost response.

Use recognized indicators and methodologies
Start with widely used and standardized metrics to ease company reporting and regulator adoption, then gradually expand.

Begin with the telecom sector
Many regulators collect telecom data, making it a practical starting point.

Expand to broader ICT industries
Data centers and digital devices contribute significantly to emissions. Assess the national ICT landscape to prioritize data collection.

Develop in-house environmental expertise
Train staff to understand the indicators and to meaningful engagement with ICT stakeholders.

Learn from others
Collaboration with environmental agencies and global peers to strengthen frameworks and share best practices.

EGTI/EGH meetings 2025

Thank you

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