

carbon4 finance

Climate & biodiversity data provider specialized in metrics for the financial sector



29/06/23

ICT: a sector disconnected from the climate reality?

Methodology and Campaign's Outcomes

Charles Dowlat Carbon Data Analyst Noémie Lewertowski Climate & Biodiversity Data Sales Charles.dowlat@carbon4finance.com Noemie.lewertowski@carbon4finance.com

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A Climate and Biodiversity data provider specialized in metrics for the financial sector



A strategic partnership

Alliance based on an in-depth environmental and sectoral expertise



Carbon4 Finance

Carbon4 Finance, a pioneer in measuring the carbon impact of financial institutions



of the Eurosystem

EUROPEAN CENTRAL BANK

Assets & Loan Book BNP PARIBAS REAL ESTATE **BANOUE DE FRANCE** EUROSYSTÈME NATIXIS BEYOND BANKING DEUTSCHE BANQUE BUNDESBANK eurosystem POSTALE ASSET MANAGEMENT EUROSÜSTEEL Carbon footprint of Loan & Credit Portfolios Implementation of climate score into credit process

Exposure's assessment of central banks assets

Research papers on climate risk impacts on financial value

European Central Bank +20 Central Banks in Europe



Carbon4 Finance

BIA-GBSTM, trusted to assess the biodiversity impact of investment portfolio



Impact of an investment portfolio on biodiversity Communicate impacts on biodiversity Engagement with companies



Coverage

A comprehensive service offering with common methodological principles for all asset classes



Common methodological principles for all asset classes: bottom-up logic, measurement of Scope 3 emissions and saved emissions, qualitative forward-looking assessment, etc.



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Sector's stakes – GHG emissions



Sector's stakes – Prerequisite: the ICT infrastructure

Definition: ICT infrastructure = Data centers + Networks + End user equipment



Sector's stakes – GHG emissions sources

 Emissions are related mainly to the production and the use phase of this infrastructure Most emissions are related to the use phase except for user equipment where production is as important



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Sector's stakes – GHG emissions

Worrying dynamics (+8%/year)



- Multiplication of users, connected devices, uses
- Impossible decoupling between emissions and infrastructure growth



Sector's stakes – Transition Risks

- For a company, transition risks refer to all potential risks of a transition toward a low-carbon economy.
- A disorderly transition translates into a higher risk.
- These transition risks range from legislative risks to market risks, technological risks and reputational risks.

Regulation	Market
 Forced to digital sobriety (legal warranty period extended, reparability index, data throughput limitation,) Tax on digital advertising Programmed obsolescence proven and condemned Litigation for non-compliance with environmental commitments 	 Changes in customer behavior Raw materials subject to transition risks Electricity market with highly volatile prices (for network and datacenter operators)
Technology	Reputation
 major investment effort required to decarbonize ICT physical infrastructure Availability of metals not guaranteed (competition with priority sectors for low- 	 Awakening stakeholders (customers & shareholders) to inaction/greenwashing Awakening employees and recruitment targets to inaction/greenwashing (retention and recruitment difficulties) Over-mediatization of CEOs whose emissive activities can damage the company's

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CIA 4 key methodological pillars

Bottom-up approach for more information, data precision, comparability, and qualitative analysis In-depth assessment of portfolio constituents, followed by aggregation at the portfolio level

to shed light on the "real" carbon dependency of assets

positioned for the low-carbon transition

degree scenarios and sectoral benchmarks

double counting

Value chain assessment including scope 1, 2 and 3 emissions,

Sector-specific analysis with focus on high-stakes sectors and elimination of

Assessment of emissions savings: going beyond carbon footprinting

Rating system comparing company strategy, targets, and investments to 2-

to measure contribution and steer investments towards assets best

Forward-looking analysis: where are your assets headed?





Report on carbon impact and best practices



Stock-pick and manage investments within a sector (best-in-class) and between sectors



Enhance dialogue with portfolio constituents

CIA methodology – Coverage

Companies distribution

- 67 companies analyzed
 - 6 different sectors

- 11% of global market cap
 - Covering 80% of ICT sector market cap

Market Cap distribution



• End-of-value-chain actors (Media) are capturing all the value creation of the sector (low opex and capex)

CIA methodology – Induced emissions calculation

Different emissions categories

- Scope 1&2 Reported if relevant, otherwise calculated (energy consumption, office life ratio, or monetary ratio)
- Scope 3 Two types of emissions:
 - ICT Infrastructure systemic emissions a fairer distribution across the value chain

All actors (except Consulting) Top-down emission allocation based on EBITDA



 End-market emissions - transition risk lies in customers' risks

> **Consulting & B2B Software** Emissions based on customer sectors' footprint



CIA methodology – Induced emissions calculation

Why systemic scope 3 emissions?

- Why computing **systemic scope 3** emissions?
 - Interdependence of actors
 - Each actor relies on the services of other actors of the value chain
 - Each actor is subject to any constraints that apply to the infrastructure
 - Lack of physical metrics for bottom-up emissions
 - Huge diversity of products (would demand a lot of different EF)
 - Lack of transparency: actors do not disclose physical metrics





CIA methodology – overall CIA rating



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Focus on the forward-looking rating: carbon impact evolution

The forward-looking rating is based on the assessment of five objective sub-criteria specific to each sub-sector. Criteria are based on sectoral benchmarks and 2-degree scenarios.

5 sub-criteria

- Company's strategy regarding climate change
- Weight of investments in low carbon projects or R&D
- Reduction target for scope 1+2
 emissions
- Reduction target for scope 3 emissions
- Governance of climate-related risks
 and opportunities



Scale from 1 to 5

Thresholds are based on sectoral benchmarks and Paris-aligned scenarios observed in each sector.

A company's forwardlooking performance is assessed based on its initiatives to contribute to climate change mitigation.



Focus on the forward-looking rating: strategy criteria

B2 SC

С

	Measures for digital sobriety • In green: practices to be encouraged • In red: practices to be reduced/ceased		
	Production	Use	Usage
2B & B2C oftware	• Software that can be used on a wide range of equipment (the release of new software does not require the purchase of new equipment)	Software eco-designed	 Software to reduce the user's environmental footprint (optimization or change of use) Reversibility of updates
ardware	 Low-carbon suppliers (both in their choice of materials and in their operations) Increase the lifespan of equipment (recyclability, repairability, reconditioned equipment) Increase the legal warranty period Optimizing scarce resources 	• Improving the energy efficiency of equipment	 Energy and material efficiency devices (e.g. smart meters, 3D printers, etc.) Production of new models with marginal improvements (plays on psychological obsolescence) Marketing of connected objects with no proven social/technical/ utility
lecoms	Incentive to change equipment	 Improved energy efficiency of network, equipment and data centers Electricity supply by renewable PPAs 	 Pay-per-use tariffs (data throughput limitation) Deploy offers that provide more bandwidth (5G, oversized gigabyte offer, etc.), enabling a multiplication of uses.
edia		 Improving energy efficiency in data centers Software eco-designed Electricity supply by renewable PPAs For videos, possibility to choose the definition (and set a low resolution by default). 	 Content that raises users' awareness of the transition Pay-per-use (including video streaming) Use of online advertising (encourages consumption)
onsulting rvices			 Creation of relevant tools or services to reduce customers' carbon footprint Consulting services to reduce carbon footprint Missions aimed at optimizing profitability without taking transition risks into account

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Main Outcomes - Comparison of companies - ICT



- The worst-performing sub-sectors are media and B2C software, where many players do not pay particular attention to the climate issue.
- In the telecoms, hardware and B2B software sectors, ratings are more widely spread, with some players having a good understanding of their impact on the climate and the levers for mitigating it.
- Consulting services are rated the best overall, as many players have set up business units specializing in carbon footprint assessment and supporting their customers in their low-carbon transition.

Main Outcomes – Past performance – ICT Telecoms



- Most players fluctuating between +20% and -20%
- Mainly linked to the energy consumption of telecoms networks
- Several possibilities:
 - Increase/decrease in network energy efficiency
 - Increase/decrease in country's carbon intensity of electricity mix
 - Sale/acquisition of assets more or less energyintensive in countries with a more or less carbon-intensive electricity mix

Main Outcomes – Current performance – ICT Telecoms



- Most players fluctuating between 15 and 25 kgCO2e/subscriber
- Differences are largely explained by the countries where the player operates its network.

Main Outcomes – Past Current performance – ICT Consulting services and B2B Software

- <u>Past performance</u>: average (status quo)
 - many players have not changed their customer base, the sectoral distribution of their customer portfolio has not changed over a 5-year period, and evolutions are therefore close to 0%. This results in an average Past performance (8/15), synonymous with the status quo.

- <u>Current performance</u>: average (business as usual)
 - companies analyzed have clients in all sectors, as their services are cross-sectoral. It is therefore normal that their Current performance roughly reflects that of the current economy (i.e., activity aligned with a +3.5°C increase in global average temperature by 2100, relative to pre-industrial levels).





Main Outcomes – Forward-looking performance – ICT

Best

↓ Worst



- Strategy: insufficient
 - Focus on office life
 - Many do not mention any risk



- Reduction target scope 3: insufficient
 - Not relevant categories
 - Offsets (neutrality claims)



- Reduction target scope 1&2: heterogenous
 - Offsets (neutrality claims)
 - RECs



- Investments: insufficient
 - Marginal
 - Irrelevant



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Limits – important aspects of the transition not covered in the study

- Impact of recycling and end-of-life treatment of equipment
 - Incineration and landfilled
 - Biodiversity: air and soil pollution
 - Social: illegal channels

• Digital = enabler of consumer society

- Online advertising
- Online shopping and payment services
- New possibilities for customers

• Physical risks

- Applying to the physical infrastructure
- Jeopardize the supply of raw materials

Conclusion

- Unsustainable growth
 - Impossible decoupling between growth of infrastructure and emissions (rebound effects)
- Systemic risk as companies are highly interdependent
 - All actors rely on the ICT infrastructure
- Huge diversity of products and lack of transparency were the main difficulties
- Most actors either neglect or consider Climate Change as an opportunity, without realizing the risk
- Actors focus mostly on non-significant emissions
- The sector globally lacks ambition regarding climate change mitigation

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54 rue de Clichy 75 009 Paris +33 (0)1 87 44 84 99 www.carbon4finance.com

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