

# Telecom & ESG: impact, opportunities, and challenges



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With energy price on the rise, ESG strategies become more and more accurate in the Telecom industry. In this sector, most companies have already integrated net-zero emission targets in their businesses. They have identified ESG risks and opportunities, and drivers for their activities: upgrade skills, leverage innovation to manage energy consumption, develop reuse and increase data protection. Companies' ESG policies also include issuing sustainable bonds to finance green projects.

The world ESG transformation is also a source of opportunities for the Telecom industry: companies provide critical infrastructure upon which other sectors depend, and data inflation requires increasing cybersecurity. They thus can be viewed as an important pillar for other sectors' ESG strategies as transformation requires technologies and telecoms.

What are the impacts of ESG factors on the Telecom industry and what are the main challenges?

## 1. Environmental pillar: strong increase in data consumption

### 1.1. Climate change

The Telecom sector is moderately impacted by transition risk. Indeed, this industry contributes to around 4% of global CO2 emissions. And energy consumption represents 5% to 6% of OPEX (operational expenditures) for Telecom players.

Majority of companies in this sector are committed to CO2 neutrality by 2030. We notice divergences in the players' scope definition.

**The Telecom sector main concern is a strong increase in data consumption, which requires energy for communication networks, data centres and operations.** This is partly offset by FTTH (*Fiber To The Home*) network rollout which is 85% more energy efficient than copper networks. Copper decommissioning is a medium-term opportunity regarding CO2 gain and cash flow savings.

Scope 2 is key in the Telecom industry (indirect Green House Gas emissions that result from the purchase of electricity, heating or cooling). One solution to cope with this challenge is Power-Purchase Agreements (PPA) with renewable energy providers. Telecom companies sign a contract to secure affordable pricing for renewable energy.

In the sector, reporting quality varies a lot from one company to another. Energy consumption is not always reported on: data is obtained on demand.

#### Data storage

Few information is reported on data storage by companies. However, it represents 2% of global energy consumption currently. According to Moody's<sup>1</sup>, it could increase by 400% by 2023 compared to 2016. Solutions are based on innovations such as retrofitting data centre, or agreements with renewable energy providers.

### Mobile industry

The energy consumption per unit of data (watt/bit) is lower for 5G than 4G, but 5G hardware power consumption is said to be between two and four times higher than 4G according to Huawei<sup>2</sup>. Other industry experts have the same opinion, especially related to base station (transmission and reception station in a fixed location) and due to the need for more antennas to densify the mobile networks. Once again, solutions may rely on agreement with *Utilities* to use renewable energy.

#### Physical risk: limited impact

Physical risks remain limited in the Telecom industry. Main exposure relates to extreme weather conditions such as hurricane, flooding tornado etc. At the scale of national network, impact is limited but key risks are identified and disclosed by issuers, even if they don't disclose any specific report on the cost of extreme weather impact. At the scale of the CAPEX (investment expenses) envelop spent by companies, amounts at stakes are low.

#### The Telecom sector as an enabler helping customers to reduce CO2 footprint?

Some companies speak about scope 4: it can be defined as the CO2 savings by customers generated thanks to the telecom industry. Companies using this concept can compensate their own CO2 emissions (abatement) and report on avoided emissions such as home working which allows commuting reduction.

No regulation exists on that topic, which is very hard to measure. What is sure is that global worldwide emissions drop by 7.6% during the Covid crisis. Most of Telecom players significantly reduced their CO2 emissions due to the commuting drop and massive home working.

<sup>1</sup> "Telecom Global: ESG considerations have overall neutral credit impact on telecoms Companies" December the 7<sup>th</sup> 2021

<sup>2</sup> <https://www.huawei.com/en/technology-insights/publications/huawei-tech/89/5g-power-green-grid-slashes-costs-emissions-energy-use>

## 1.2. Natural resources, waste recycling

The Telecom sector has a **low exposure to raw material scarcity**. Main FTTN network's component is optical fibre, which is mainly built with silicium, classified as abundant.

**Main waste identified is old mobile phones.** This has a low to nil impact on companies' financial indicators. Lots of initiative exist to collect end-of-life mobile phones to recycle or to recondition.

Companies produce indicators on waste valuation but disclose few information on non-recycled waste and waste management. The cheapest recycling technics are often chosen: landfill or incineration which are not environmental friendly.

Constraints from regulation are moderate and not always efficient. The main challenge is the lack of historic reporting / no standardised reporting on that topic.

## 1.3. Focus on revised targets: CO2 emission has not necessarily disappeared

Telecom players are mostly committed to reach net carbon neutrality by 2030. Some of them have even adjusted this target between 2025 and 2030.

We pay a close attention to companies that fully sold their towers: they may have transferred their CO2 emissions to Scope 3 after selling their towers, as these assets are now leased. But they have unchanged objectives on Scope 1 and 2.

### Innovation as a potential accelerator to revise target emission

An example can be the fleet electrification, that is the replacement of current fleet by electric cars. It could bring important scope-1 CO2 savings. However, companies often face difficulties to replace their fleet due to lack of supply and too low car batterie autonomy. In December 2021 companies reports, between 5% to 10% of scope-1 emission came from fleet cars, energy consumption being the first CO2 contributor.

## 2. Social pillar: data security presents both opportunities and threats

### 2.1. Various social challenges

In the Telecom sector, social challenges are related to talent hiring, diversity, product liability and data security/cybersecurity.

Workforce represents some 25% of telecom total OPEX.

#### Management of human resources

As for talent hiring, the risk is moderate and has low impact on margin so far. Some tension may exist on high-skilled profiles and wages. Some technology subsectors may have higher diversity challenges, namely to recruit women. Initiatives are taken by major players to encourage women to go to scientific scholarship. It is difficult to quantify.

#### Product liability

The impact of waves on the population is a potential risk, but several studies indicated that the probability is low that 5G brings new risks for health, to date. Precaution principles diverge according to countries. The Swiss Federation is for instance by far more severe than France. Restriction comes from regulation on the largest spectrum band usage and emissions produce by antennas.

#### Digital disruptions

Technological changes require skills adaptation and training to support people that need to change skills. Majority of companies have taken initiatives to offer training and minimal internet access to low-income population through foundations. Comparison is difficult between the players.

## 2.2. Focus on data security and cybersecurity

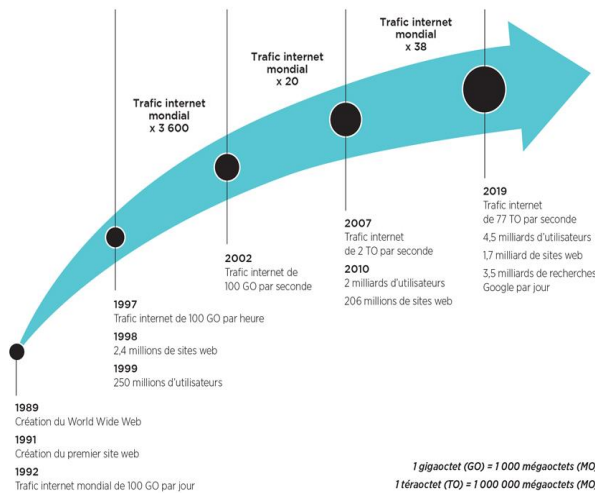
Data security and cybersecurity vary a lot from one country to another. There is a geographic bias in favour of Europe which has a more stringent GDPR regulation (General Data Protection Regulation - 2016/679 EU regulation).

The Telecom industry is by nature well positioned to benefit from opportunities, risks impacting all sectors beyond Telecom.

To measure data security level, we have some indicators such the ISO 27001 norm or the HDS norm (health data storage).

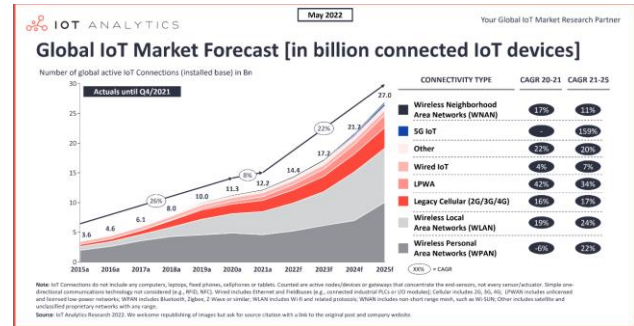
Data security is submitted to increasing regulation to address the increasing worldwide internet traffic. Growth of the *Internet of Things* (connected devices) will accelerate that trend.

The exponential growth of internet traffic is an opportunity for the Telecom industry. The more data transit on network, the more those data are at risk and need to be protected.



Source: Société Générale, Cyberisk 2019, Internetlivestats.

Another opportunity for the sector lies in the increasing usage of connected devices which requires more and more applications but also more risks of being hacked.



### Data security and cybersecurity: A material potential financial risk for companies

Regulation aims to require companies to protect the usage of data collected from their customers, not only in the Telecom sector. The objective is to assess how companies protects client data from external invasion like cyberattack. Companies which would not respect the regulation are sanctioned by financial penalties.

Europe is the most advanced on that topic through GDPR regulation but there are local initiatives such as in France (CNIL – French IT & liberties national commission) and elsewhere in the rest of the world.

There are increasing risks for companies, such as shown by the cost upward trend related to cybercriminal in 2021: €6000bn. Penalties related to GDPR in 2021 amounted to \$1.2bn, seven times higher than in 2020. This generates additional costs for companies who needs to implement customers' privacy and protection in their systems.

Indeed, companies must comply with GDPR key privacy requirements:

- Obtain clients consent for data processing
- Anonymise collected data to protect privacy
- Provide data breach notification
- Safely handle data cross-border transfer

**Cyberattack main costs for a company are the following** (source: *The Cost of Cybercrime*, Accenture, 2019):

Internal costs: detection, investigation, resolution, recuperation

External costs: information loss/steal, business interruption, equipment damages, loss of

revenues.

Beyond risks, data security and cybersecurity are a strong growth opportunity in all cybersecurity business segments, as shown in the graph below:

Market Segment	2020	2021	Growth (%)
Application Security	3,333	3,738	12.2
Cloud Security	595	841	41.2
Data Security	2,981	3,505	17.5
Identity Access Management	12,036	13,917	15.6
Infrastructure Protection	20,462	23,903	16.8
Integrated Risk Management	4,859	5,473	12.6
Network Security Equipment	15,626	17,020	8.9
Other Information Security Software	2,306	2,527	9.6
Security Services	65,070	72,497	11.4
Consumer Security Software	6,507	6,990	7.4
<b>Total</b>	<b>133,776</b>	<b>150,409</b>	<b>12.4</b>

Source: Gartner (May 2021)

### 3. Governance pillar: a key factor for the industry

Governance is always critical, in all businesses. Poor governance could lead to failures.

That being said, governance is the most financially material ESG driver in the Telecom industry. The sector is exposed to governance risks such as antitrust behaviour and bribery to obtain some license, as shown by real cases in the past. These risks are seen more as controversies and handled case by case, as they are very difficult to predict. Most of the time, impacts are moderate for companies and easily dealt with (payment of penalties, board changes...).

Another governance issue can be strategic choices which can lead to heavy losses. For example, if the management doesn't anticipate the rapidly changing market (prices declined as cheaper and more efficient technology appears), the company may be forced to shut down an activity.

### 4. Sustainable bond issuances: financing green project in the Telecom industry

Beyond their key role in digital transformation across industries, they also **participate in financing a greener economy by issuing sustainable bonds**, capitalizing on investor demand for sustainable financial instruments.

The Telecom sector represents 1.8% of total sustainable bonds issued in 2022Q1 (source Ostrum AM), mainly "Use of Proceeds" (UoP) bonds. The first telecom company to issue a green bond was Telefonica (Spain) in 2019, followed by Verizon (USA). Main other Telecom issuers of sustainable bonds (green, social, sustainability, sustainability-linked bonds) are Orange (France), Vodafone (UK), Telecom Italia (Italy), NTT (Japan) and Swisscom (Suisse).

The use of proceeds is mainly directed to transformation and optimisation of networks (energy efficiency), construction and renovation of data centres, *Internet of Things* (IoT) - big data, artificial intelligence – integration of renewable energies (*power purchase agreement PPA*) and green buildings. These project categories contribute namely to the realisation of two United Nation's Sustainable Development Goals, namely SDG 9 "Industry, innovation and infrastructure" and SDG 10 "Reduced inequalities". They are also aligned with the more recently European Taxonomy eligible activity "Information and communication": Data processing, hosting and related activities.

### 5. Ostrum AM is committed to the transformation of the telecom sector

Companies in the Telecom industry face critical challenges to adapt their strategy in the future. If they may face higher CO2 emissions due to worldwide increasing data consumption, they should be able to benefit from a "CO2 abatement" for their positive contribution to its reduction in other industries. They also face the need for advanced skills related to new technologies, and strong risk control process to monitor cybersecurity, bribery, mapping of extreme weather conditions...

As a responsible asset manager, Ostrum AM is committed to provide guidance to issuers. With our engagement and voting policy, we aim to support our society's various transformations to enhance environmental, social and governance (ESG) practices. This clearly involves dialogue with bond issuers and companies with a view to encouraging them to act on ESG topics.

In the Telecom sector, we engaged in great details with 7 European companies over the 2

past years. Main engagement axes were: reduction of CO2 emissions, physical and transition risks, cybersecurity and data management / transparency, 30% women, governance (balanced power, ethic, remunerations, etc.).

### **Ostrum AM benefits from unique capabilities in ESG analysis**

To analyse Telecom companies from an ESG perspective, in-depth knowledge of the sector and each business model is crucial. Analysis requires experience and extensive resources. At Ostrum AM, the credit research team is one of the largest in Europe, with 23 credit analysts across 3 continents, including 2 analysts specialised in sustainable bonds, covering more than 1,000 issuers worldwide.

Unique to our credit research approach is that environmental (E), social (S) and governance (G) issues are integrated at all stages of our analysis. These factors may affect the sector or the company's business model and may therefore have a material impact on financial conditions today or in the future.

Analysts have a duty to systematically identify any environmental or social factors, which may be relevant for the company, and roll them up into the bigger picture of the industry or business model assessment, and also assess their implication. We have also developed a proprietary methodology to analyse green, social and sustainable bonds. This approach, taking issuers' sector-dedicated resources and ESG factors into account, provides an edge in analysing issuers and supports portfolio managers in their investment decisions.

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