open fiber

SUSTAINABILITY
REPORT
2022

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Open Fiber is playing a key role in the digital transformation of the country, the rapid paradigm shift that is sweeping across society and the economy. With this role comes an awareness of a great responsibility towards all stakeholders and, in particular, those areas and communities most affected by the so-called digital divide. For this reason, much of the hard work of our employees was again directed towards this issue in 2022.
Since its establishment, Open Fiber has had the mission to guarantee everybody one of the fundamental rights of the modern era: internet access. Accomplishing such a challenging goal cannot be achieved without doing business in a way that is sustainable for the environment, the community and the country's economy.
The infrastructure built by Open Fiber offers two of the most cutting-edge technologies in the telecommunications sector: Fiber To The Home (FTTH)

and Fixed Wireless Access (FWA), which enable any area of the country to be connected. Compared with traditional networks, the Open Fiber network represents a jump in quality in terms of environmental sustainability: its fiber optic cables, consisting of glass and polymers, do not require extraction or high-emission processing. As well as the properties of fiber optics, the Company to committed to adopting laying methods with reduced environmental impact, prioritising the reuse of existing infrastructure and excavating with the least invasive techniques currently available (mini-trenching, micro-trenching, no-dig), resulting in a reduction in the quantity of materials used and waste produced. This commitment has resulted in up to 80% of cable laying in rural areas of the country being achieved through reuse, significantly reducing not just the environmental impact, but also the inconvenience caused to communities by road works. Environmental protection

continues through to the operation of the network, with the implementation of energy efficiency solutions and the reduction of emissions through the purchase of energy from renewable sources. On this issue, in 2022 Open Fiber achieved an important milestone: 100% of the electricity purchased came from renewable energy sources, avoiding the emission of over 15,000 tonnes of CO_2. Furthermore, in order to deal with the energy crisis that has affected the whole of Europe, the Open Fiber Green project was initiated, a plan for the installation of photovoltaic systems across hundreds of technological sites in rural areas.

In Open Fiber's mission, environmental protection is closely connected to an aspect of social sustainability: bringing the best available technologies on the market, i.e. Very High Capacity Networks, to the entire population with the lowest impact possible on the local area, connecting even the most remote areas, such as the rural areas dotted around our peninsula. In this respect, Open Fiber acts as a driver of sustainability and its infrastructure has becomes essential in responding to today's social needs, including access to remote working and distance learning, the digitalization of public services offered by government bodies, the remote health monitoring of patients, and the development of urban systems through the creation of smart cities and smart grids, to give just a few examples.

The country today has a growing need for an ultra-fast, stable, reliable, fiber optic network; this is reflected in Open Fiber's figures over the past year: an increase in the number of completed municipalities (around 5,000), of connected properties (15.5 million since the start of the project), growth in the number of employees (reaching 1,571 at year end), as well as the trend towards a steady strengthening of the customer portfolio (one of the main drivers for the future).
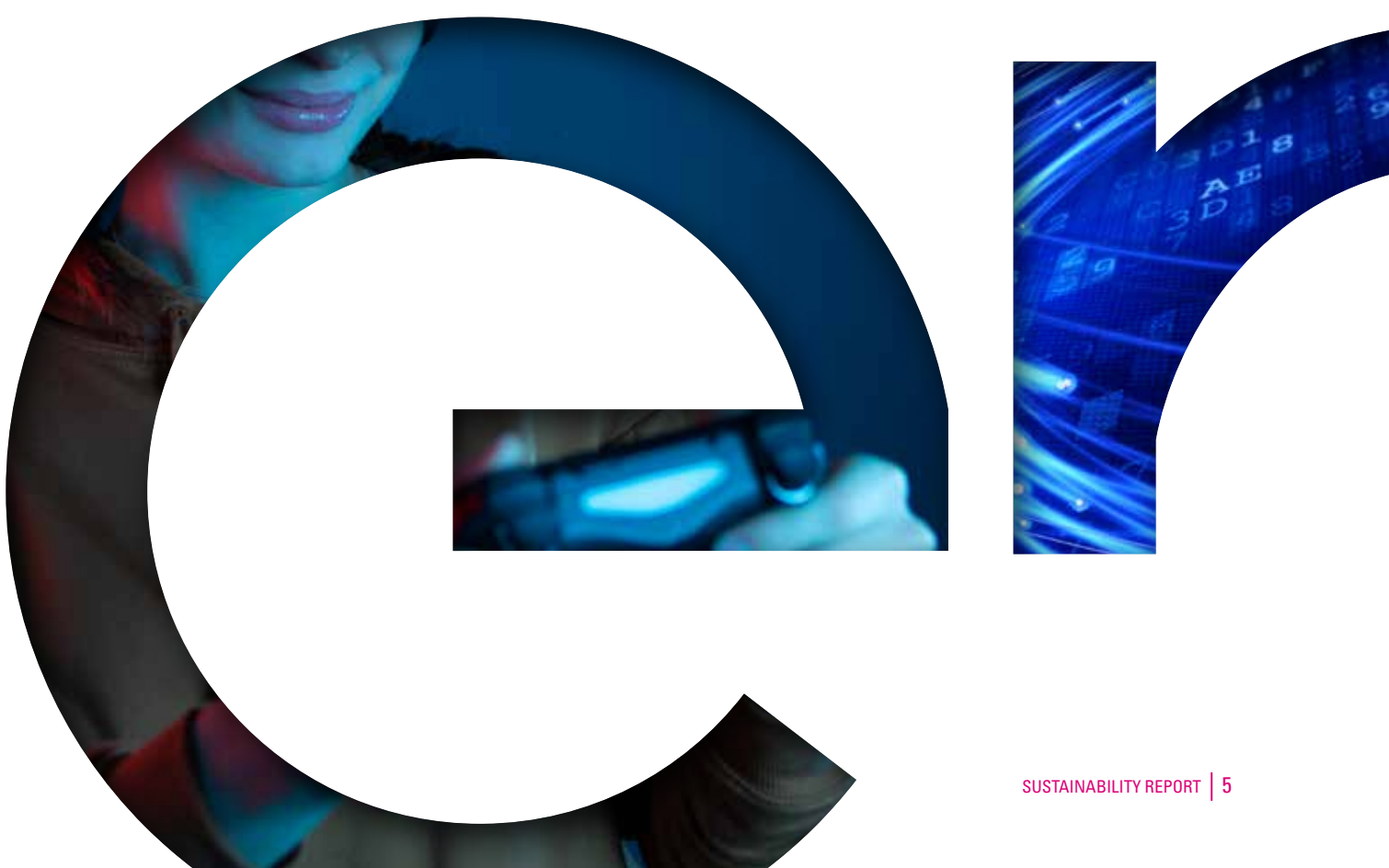
For Open Fiber, 2022 was a year of very strong acceleration in terms of network development in inland areas and in small municipalities, with the construction of around 20,000 km of infrastructure, equal to more than half the amount implemented in the four previous years. Among the many activities developed by Open Fiber, this is the one with the greatest social value and the biggest impact in terms of creating shared value for communities. This is a further incentive to make progress, despite the obstacles posed by macroeconomic and geopolitical factors, such as the slowdown of the entire supply chain, the Russia-Ukraine conflict and increasing commodity prices.

The commitment to connecting the entire country through ultra-wideband networks has also seen Open Fiber take on a key role in the "Italia a 1 Giga" Plan, with the awarding in 2022 of 8 lots in nine Regions in the so-called Grey Areas, which include many industrial districts. A plan with the aim of developing network infrastructures that will guarantee a transmission speed of at least 1 Gigabit/s across the whole country by 2026.

Furthermore, in the belief that continuous improvement is an essential requirement for the development of society, Open Fiber has created the Open Fiber Innovation Lab in recent years, a structure that works in the field of Research and Development in collaboration with other companies and organisations in the sector. The target projects range from the application of Artificial Intelligence technologies with Tiresia to the space economy and participation in the European Space Agency HydRON programme.

Such rapid development, a reflection of the key role that the fiber optic network plays in the digitalisation of the country, cannot be achieved alone; therefore, with this idea in mind, Open Fiber has opened up to

the community with a series of projects involving the entire supply chain: from suppliers to operators, from employees to their families, from public and private organisations to regulators on a national and international level.

To do this, Open Fiber puts its most important resource at the centre of its strategy: human capital. That is why, once again in 2022, we continued our commitment to developing our people by ensuring professional growth and equal opportunities, guaranteeing safety and well-being, as well as promoting an inclusive working environment that values diversity. Proof of this commitment is shown by the renewal of two important awards for our people management and development policies: Top Employers Italia and Great Place To Work.

At the start of 2023, Open Fiber's commitment over the years to the area of sustainability and the implementation of Environmental, Social and Governance (ESG) policies and practices was also confirmed with the achievement of ESG certification from an independent third-party body.

Aware of its role as an enabler of digital transition, Open Fiber will continue to drive forward the challenge of connecting the country and people through its corporate culture, based on the belief that sustainability and cooperation can be key to making the present the future we want.

Barbara Marinali

Mario Rossetti

SUSTAINABILITY STRATEGY

Open Fiber works every day to create shared value, address environmental challenges and current and future social needs, and to lead Italy among the most technologically advanced countries, employing high-performance and environmentally sustainable technologies to bridge the existing infrastructure gap and ensure uniform and equal access to the network.

From large metropolitan cities to small towns, Open Fiber pursues its purpose of contributing to improving the quality of life of people, families, businesses and workers by building a state-of-the-art, secure and reliable network infrastructure that respects the environment and free competition. Open Fiber strongly believes in the potential of optical fiber as a tool for reducing inequalities, distributing opportunities more equitably and supporting the transformation towards sustainable development that protects the environment and people. With this in mind, Open Fiber is actively contributing to the achievement of the **Sustainable Development Goals (SDGs)** defined in 2015 by the United Nations (UN) 2030 Agenda for Sustainable Development.

DISTINCTIVE FACTORS FOR THE SUSTAINABILITY OF OPEN FIBER	ENVIRONMENTAL CHALLENGES AND THE SOCIAL NEEDS THEY ADDRESS
INNOVATION AND TECHNOLOGY FOR THE ENVIRONMENT By taking measures in the business value chain to minimise the overall impact on the environment and community, Open Fiber seeks innovative solutions and technologies that guarantee a high-performance and environmentally sustainable network infrastructure.	**CONSUMPTION OF NATURAL RESOURCES:** Reduce the consumption of natural resources through a network made of more sustainable materials that are easily recyclable and do not require extraction processes, as well as being flexible and resistant to wear and tear and external agents.
	SOIL AND SUBSOIL, LANDSCAPE AND CULTURAL PROTECTION: Promote the use of existing infrastructure and implement minimally invasive excavation techniques with a low environmental impact.
	WASTE MANAGEMENT: Promote efficient management of waste produced by reducing the amount of waste for disposal wherever possible, favouring resource recovery and recycling activities.
	DIGITALISATION: Allow agile working arrangements (e.g., smart working) and remote activities, thus reducing people's journeys and mitigating impacts on the environment and the community.
	CLIMATE CHANGE: Promote initiatives to reduce the carbon footprint associated with the construction and operation of the fiber optic network, monitoring and reducing energy consumption and greenhouse gas emissions.

For this reason, the development plan of its FTTH (Fiber To The Home) ultra-wideband optical fiber network infrastructure, aims to:

- Develop **innovative technological solutions** that contribute to **environmental protection**, ensuring efficient use of resources, increasing the circularity of the infrastructure and reducing environmental impacts.
- Promote and implement **energy efficiency**, decarbonisation and other initiatives to contribute to the **fight against climate change**.
- Seek enabling solutions for **new digital services** for the community, guaranteeing equal access to all.
- Invest in **human capital** and people's growth by promoting projects and initiatives to ensure **equal opportunities**, **equity and inclusion**.
- Strengthen policies to ensure **responsible business along the entire value chain**.

DISTINCTIVE FACTORS FOR THE SUSTAINABILITY OF OPEN FIBER	ENVIRONMENTAL CHALLENGES AND THE SOCIAL NEEDS THEY ADDRESS
FIBER AS AN ENABLER OF INNOVATIVE SERVICES As an enabler of the country's digital transformation, Open Fiber develops innovative technological solutions thanks to a high quality and efficient optical fiber infrastructure that guarantees extremely high performance, the only one capable of supporting the evolution of the service (future proof).	**SMART GRID:** Develop the grid, by providing new functions to those accessing the grid and those involved in managing the electricity system, and accelerate technological and industrial evolution in the energy transition process.
	EFFICIENCY OF PUBLIC ADMINISTRATION AND REPOPULATION OF SMALL MUNICIPALITIES: Ensure the network infrastructure necessary for the conversion of services to the citizen into digital form, promoting repopulation and increasing the attractiveness of small municipalities in the eyes of residents and tourists.
	INDUSTRY 4.0: Design programmes and partnerships to encourage the spread of ultra-wideband in companies and promote the connection between physical and digital systems, enabling complex analysis through Big Data and real-time adaptation.
	SMART CITIES: Make cities digital and intelligent by harnessing the efficiency of ultra-wideband.
	FIBER SENSING: Create a sensor system, using optical fiber as a transducer and means of information transport (e.g., for earthquake detection).
	E-HEALTH: Provide the necessary infrastructure for ongoing tele-monitoring of patients, capable of supporting high-resolution data transmission.
	DISTANCE LEARNING AND DIGITISATION OF EDUCATIONAL ESTABLISHMENTS: Safeguard the right to study by bridging the gap due to existing infrastructural differences.

DISTINCTIVE FACTORS FOR THE SUSTAINABILITY OF OPEN FIBER	ENVIRONMENTAL CHALLENGES AND THE SOCIAL NEEDS THEY ADDRESS
INVESTING IN PEOPLE'S GROWTH AS THE DRIVER OF THE SUSTAINABILITY STRATEGY Open Fiber offers training and development programmes, a welfare system that responds to their needs, social and welfare programmes that support people's well-being and guarantees occupational health and safety at work. The company believes that diversity and plurality are values for an open, stimulating and innovative environment capable of promoting effective and virtuous behaviour. It also develops initiatives and projects that aim to guarantee equal opportunities, inclusion and community participation.	**SAFE AND WELL-BEING-ORIENTED WORKING ENVIRONMENT:** Promote diversity, work-life balance, well-being and occupational health and safety of all people to nurture the next generation of leaders. Enhancing the talent of human capital and individual skills.
	EQUAL OPPORTUNITIES, DIVERSITY AND INCLUSION: Ensure equal professional opportunities and full inclusion for all persons in all human resources processes regardless of gender, age, sexual orientation and identity, disability, health status, ethnic origin, nationality, political opinion, social category and religious belief, guaranteeing and maintaining a diverse work environment.
	PROMOTION OF INCLUSION AND PARTICIPATION IN THE WHOLE COMMUNITY: Support equal conditions for all citizens in accessing resources, information and services. Promote social inclusion and the appreciation of diversity.
RESPONSIBLE BUSINESS MANAGEMENT Open Fiber is committed to conducting business responsibly along the entire value chain, placing integrity and respect for rules at the centre, core principles of the corporate culture that guide relations with all stakeholders.	**EMPOWERMENT OF THE SUPPLY CHAIN:** Ensure compliance with social and environmental criteria by evaluating suppliers and business partners both at the selection stage and periodically using a vendor rating model. Raise suppliers' awareness of ESG issues along the entire supply chain both for the implementation, operation and maintenance of the network infrastructure and for the procurement of goods and products.
	FIGHT AGAINST CORRUPTION: Combat corruption in all its forms, in full compliance with current legislation and international conventions, developing incisive, concrete and transparent practices in line with the Code of Ethics and MOG[1] adopted by Open Fiber.
	CUSTOMER PRIVACY AND SECURITY: Ensure the protection of privacy and the security of ICT-related data and processes through the adoption of information security policies aimed at preventing attacks that could jeopardise the continuity of the service offered, the reliability of the network and lead to data breaches and data leaks.

1 Organizational, Management and Control Model pursuant to the Legislative Decree no. 231 of 8 June 2001.

In 2021 Open Fiber conducted an analysis based on the Theory of Change approach[2] aimed at measuring and communicating the value generated for local communities and the national economy. The Company continued this analysis in 2022 by focusing on the positive and negative impacts that affect it (actual) or could affect it (potential) along its value chain. This additional level of analysis has made it possible to identify the issues that represent the most significant impacts that Open Fiber has or could have on the economy, the environment and people, including impacts on human rights[3].

Aware of its role as an enabler, Open Fiber aims not only to progressively reduce its negative impacts but to create a business that can make a positive and concrete contribution to sustainable development.

Hence the need to further strengthen its **sustainability strategy**, starting with the identification of actual pillars that will be addressed by the organisation to consolidate its medium- and long-term

commitment[4]. Each pillar, both concrete and ambitious, supports the creation of value and the full integration of sustainability into business.

- **Fighting climate change:** defining a long-term decarbonisation strategy starting with the mapping of value chain emissions and the definition of a pathway to reduce direct and indirect emissions.
- **Protection and development of human capital:** ensuring the well-being and safety of people, prioritising the talent of human capital and individual skills and ensuring the personal and professional development of resources.
- **Diversity, Equity and Inclusion:** strengthening programmes dedicated to promoting the uniqueness and differences that distinguish people, guaranteeing equal opportunities and strengthening an inclusive culture consistent with corporate values.
- **Governance System:** strengthening oversight in the management of relevant ESG issues, renewing the commitment to adopting policies and practices that reflect

2 The Theory of Change is a planning method involving internal and external stakeholders aimed at reconstructing the company's initiatives and the pursuit of long-term, medium-term and short-term objectives. The evaluation was conducted in alignment with the OECD-DAC Criteria for Evaluation, highlighting aspects of relevance, effectiveness and sustainability of the initiatives on the ground.

3 For further details on the materiality analysis, see section 5.5 "Materiality Analysis."

4 The pillars of the sustainability strategy were validated by the Sustainability Committee in January 2023.

the company's mission, vision and values with the aim of preserving and increasing value for stakeholders, maintaining local trust and ensuring environmental, social and economic sustainability.
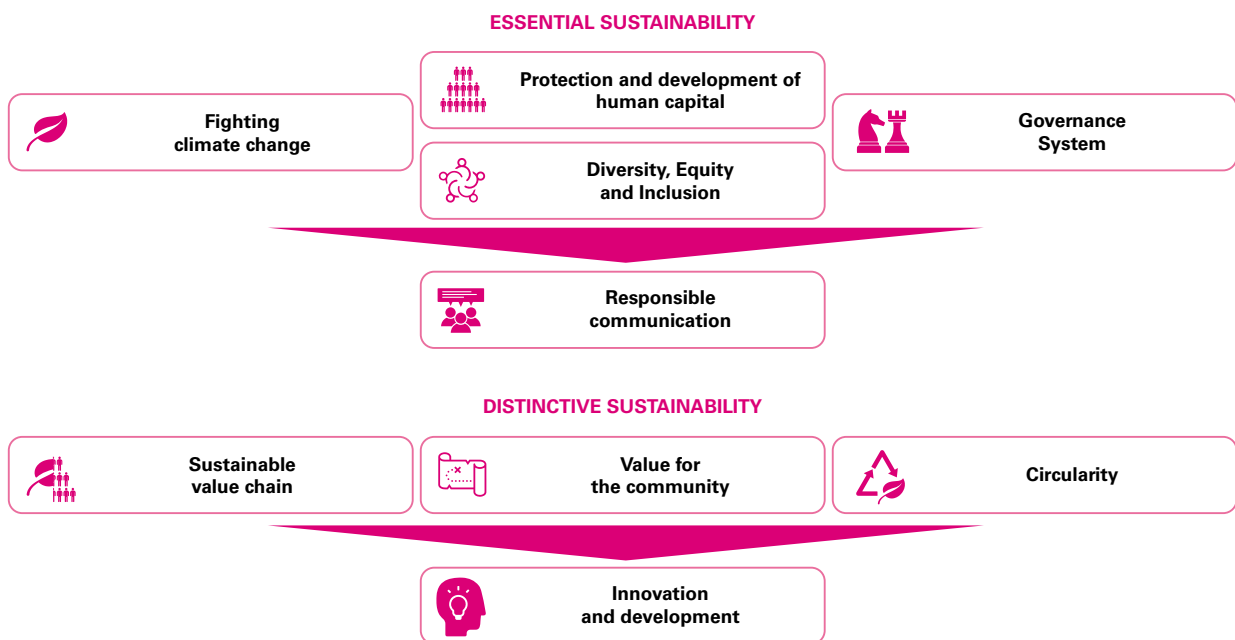
• **Responsible communication:** always maintaining an active dialogue with stakeholders, responsibly communicating achievements and commitments and conveying the Company's brand identity in an effective, clear and transparent manner.

• **Sustainable value chain:** developing a sustainable value chain model, raising the awareness of stakeholders on ESG issues and involving the entire supply chain in the adoption of the highest standards of quality and environmental and social responsibility.

• **Value for the community:** supporting the country's digitisation and the elimination of the digital divide, strengthen stakeholder engagement programmes and create value for the communities where it is operational, also to respond to local social needs.

• **Circularity:** defining a resource management strategy to increase the sustainability of the infrastructure, developing business models that meet the challenges of the circular economy.

• **Innovation and development:** continually investing in research with the aim of bringing constant technological innovation, establishing partnerships with leading companies in the sector, focusing on cutting-edge technologies and identifying solutions that guarantee a high-performance network infrastructure.

These pillars have been divided into two action areas representing sustainability for Open Fiber: the first ones constitute pillars of "essential sustainability," i.e., the issues on which private and public organizations, regardless of sector, are universally striving; the second ones constitute pillars of "distinctive sustainability," i.e., issues that characterize not only organizations operating in the TLC sector, but that can differentiate Open Fiber's commitment in running a sustainable business.

PILLARS OF THE SUSTAINABILITY STRATEGY

ESSENTIAL SUSTAINABILITY

Fighting climate change	Protection and development of human capital
	Diversity, Equity and Inclusion
	Governance System

Responsible communication

DISTINCTIVE SUSTAINABILITY

Sustainable value chain	Value for the community	Circularity

Innovation and development

1.0 COMPANY'S OVERVIEW

1.5
billion € of investments in 2022

100,000
km of infrastructure

5,000
marketed municipalities (approximately)

15.5 million
connected real estate units

1,571
total employees at 31 December

300
partner operators

1.1 PROFILE

1.1.1 The identity of Open Fiber

Open Fiber was set up to create an Ultra Broadband TLC network entirely in high-speed fiber optics, with **Fiber To The Home (FTTH)** and **Fixed Wireless Access (FWA)** technology throughout the country, capable of both providing increasingly advanced services and functions for people, businesses and Public Administrations, and of fostering the recovery of the country's competitiveness.

Since its establishment, with the intention of being active exclusively in the wholesale market, Open Fiber has chosen the **wholesale-only** business model, so as to guarantee free access to interested operators, and clear benefits to users in terms of both diversity and quantity of services available. In fact, to date **more than 300** national and international **partner operators** use Open Fiber's Ultra Broadband network under the same conditions.

Open Fiber has brought the fiber-optic network to many cities in Italy, with a transmission capacity of up to 10 Gigabits per second, working to wire the country from large cities to small municipalities and rural areas, thus reducing the **digital divide** and guaranteeing free access to technologies, an opportunity in both economic and employment terms for the country. Indeed as of today Open Fiber employs more than **8,000 people, including internal and external resources**.

By the end of 2022, Open Fiber covered **approximately 15.5 million real estate units**, confirming its position as the leading **FTTH operator in Italy**, among the **leaders in Europe**, and **first among the continent's wholesale-only operators**.

Overall, Open Fiber has realised **100 kilometres of infrastructure**, of which 46 thousand kilometres in the black area (the most densely populated cities and areas) and over 57 thousand in the white areas (less populated inland areas of the country), to which over 2.7 thousand radio base stations for FWA (Fixed Wireless Access) service are added.

With the aim of developing the most technologically advanced and efficient network, the organisational machine of Open Fiber manages various projects, both with its own investments and with public funds.

Indeed, Open Fiber has won three tenders launched by Infratel Italia S.p.A. – an in-house company of the Ministry of Enterprise and Made in Italy – for the construction of a fiber optic infrastructure in over 7,000 small municipalities in all Italian regions.

In 2022 the company was awarded 8 lots of the "Italia a 1 Giga" public call for tenders – falling under Mission 1 'Digitalisation, Innovation, Competitiveness, Culture and Tourism' of the National Recovery and Resilience Plan (PNRR) – for the construction of an ultra-fast network in nine regions, in areas mainly coinciding with so-called grey areas (industrial districts).

Moreover, on February, Open Fiber has signed a new €7.2 billion financing contract, that can be extended to €2.8 billion further, with leading national and international banks: the largest structured finance transaction for investments in telecommunications networks in the EMEA (Europe, Middle East and Africa) region.

THE MAIN STEPS IN THE HISTORY OF OPEN FIBER

Enel S.p.A. establishes **Enel Open Fiber S.p.A.** in order to build and manage an Ultra Broadband fiber optic infrastructure (Fiber To The Home – FTTH) covering the entire Italian national territory.

2015

Following negotiations between Enel S.p.A., CDP Equity S.p.A. and F2i SGR for the integration of Open Fiber and Metroweb, Open Fiber's shareholding structure consists of an equal participation of **Enel S.p.A.** and **CDP Equity S.p.A. (CDPE)**.

2016

2019

In February, Open Fiber is awarded **Telecoms Deal of the Year 2018** price, awarded by PFI (Project Finance International) magazine for the most relevant financing in the EMEA area for the construction of an **Ultra Broadband network**.
In April, Open Fiber wins the third Infratel call for tender.

Open Fiber's ZION fiber backbone brilliantly passes the **600 Gbps** test: Open Fiber's infrastructure is the most advanced.

[open fiber]   60% ⋯ cdp"

                  40% ⋯ ◉ MACQUARIE
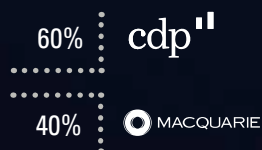
2020

Open Fiber is certified as **2020 Top Employer** by the Top Employers Institute, a body focusing globally on excellence in HR management practices and **Great Place to Work** by the international company of the same name.

In the same year, the company finalises the extension of the project financing to €4.145 billion, resulting in the largest structured finance transaction for the development of a fiber-optic network in Europe.

The IDATE report published by FTTH Council puts Italy in third place (out of 28 countries) in the European FTTH/B coverage ranking and in second place as annual growth rate. Around **80%** of the contribution in 2019-2020 is attributable to Open Fiber.

Having wired 10.5 million real estate units, Open Fiber is the **third FTTH operator in Europe** and **the first among the continent's wholesale-only operators**.
The backbone, ZION, reaches **800 Gigabits** per second (Gbps) per optical channel: a new record.

In January, the Board of Directors approves the merger by incorporation of Metroweb S.p.A. and Metroweb Genova S.p.A. into Open Fiber S.p.A.
In the same year, Open Fiber wins the first **two Infratel calls for tenders**.

2017

Open Fiber wins the **FTTH 2018 Council Europe Operator Award**, the award given to those who have shown a special commitment to the development, support and deployment of a FTTH network in Europe.

In the same year, it received the **TMT Infrastructure Loan of the year 2018 – EMEA** award for the most relevant financing for infrastructure in the telecommunications sector (financing of 3.5 billion).

In December, Open Fiber set a new record on the ZION network, reaching **400 Gbps**.

2018

2021

Open Fiber is once again **awarded 2022 Top Employer** and **Great Place to Work** prices and publishes the first Sustainability Report.

December 2021, the share sale transaction was completed: Open Fiber was directly controlled by Open Fiber Holdings S.p.A., 60% owned by CDP Equity and 40% owned by Fibre Networks Holdings S.a.r.l., a company belonging to the Macquarie group.

The new **2022-2031 business plan** was approved, which provides for approximately €11 billion in investments to cover over **20 million** real estate units. The financing is the largest ever in the EMEA region in terms of investments in telecommunications networks. In 2021, Open Fiber achieved coverage of **13.5 million real estate units**, with a **total of 3,449 municipalities** marketed.

2022

In 2022, Open Fiber remains the leading FTTH operator in Italy and among the leaders in Europe: as confirmed by AGCOM's Communications Observatory. By the end of 2022 around 65% of people surfing FTTH in Italy use the Open Fiber network.

Completed about 5,000 municipalities corresponding to 15.5 million real estate units. In March, Open Fiber forms the Open Fiber Network Solutions consortium together with Amplia Infrastructures and CIEL to advance the country's digitisation goals.

In May, Open Fiber is awarded 8 lots of the "Italia a 1 Giga" public tender (PNRR Mission 1). In June, the company's Sustainability Committee, a body with an advisory role on ESG issues, is established. In 2022 new strategic partnerships were formed to accelerate the country's digital transformation (i.e. ESA, Euromilano, Svelto!, etc.).
The Company is certified "**Top Employer Italia**" for the third year in a row and "**Great Place to Work**" for the second year in a row.

Open Fiber's overall plan consists of over **€15 billion of investments**, of which **6.2 billion** has **already been deployed** and envisages the coverage of **more than 20 million real estate units in Italy**, covering **94%** of Italian municipalities, including cities (black areas), small and isolated municipalities (white areas) and industrial districts (grey areas).

In March 2022, Open Fiber, together with Amplia Infrastructures and CIEL, has started Open Fiber Network Solutions, a consortium that aims to push forward Italy's digital and technological transformation. Indeed, Open Fiber Network Solutions is assembling the team that will build thousands of kilometres of the country's new digital infrastructure[5].

1.1.2 The market

The Russian-Ukrainian war has generated medium- and long-term knock-on effects in Europe due to rising raw material and energy prices, together with difficulties in the supply of materials.

The outbreak of war caused the prices of major commodities such as natural gas, coal, oil and other raw materials to reach record levels, triggering a historic inflationary surge and generating severe stress along the supply chains of several manufacturing sectors, and in some cases supply disruptions that caused major slowdowns in economic activities.

The sector most affected by this situation, with an impact on Open Fiber's value chain, is the petrochemical industry, which the company is connected to for the supply of asphalt, which is needed for road surface repair operations following the construction and testing of the Ultra Broadband fiber-optic network infrastructure. This geopolitical situation has therefore led to an inevitable increase in costs for Open Fiber for the

advancement of the fiber-optic installation work, which the company has however been able to manage and carry forward without significant slowdowns in the work schedule.

2022 was the sixth year of operations for Open Fiber, which is pursuing its mission to build, manage and market a **"future-proof"** infrastructure in all Italian regions. At the end of 2022, connectivity services on the Open Fiber network were available in **238 large and medium-sized cities**. In white areas, where the company operates as an Infratel licensee, 2022 was marked by an acceleration in coverage: ultrafast connectivity on the public network built by Open Fiber was available at the end of the year in about **4,700 small municipalities**.

The Open Fiber infrastructure is a passive multi-operator network, mainly based on the FTTH (Fiber To The Home) standard, which supports both "point-to-multipoint" GPON[6] and point-to-point (P2P) connections. It is a technology that can guarantee a quality network, with high levels of performance and transmission speeds of up to 10 Gbps. Thanks to the new standards, the same network will be able to reach speeds of over 40 Gbps in the future. Open Fiber's aim is to contribute to Italy's digital growth, ensuring that the gap between those who can use the new information and communication technologies and those who, for technical, economic or social reasons, are unable to use them is bridged.

Since its entry into the market, in 2017, Open Fiber has contributed to push Italy towards to the top of the rankings on economy digitalisation, after years of low investments. The official documents of the European Union and AGCOM[7], as well as the reports produced by IDATE on behalf of the FTTH Council, bear witness to this result. Moreover, the last **DESI**[8] index reports certify the Italian advancement

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5 For more details see paragraph 4.4 "Open Fiber Network Solutions".
6 Gigabit-capable Passive Optical Network.
7 Communications Regulatory Authority.
8 Digital Economy and Society Index.

in VHCN (Very High Capacity Networks) coverage from 22% in 2017 to 44% in 2021.

As far as FTTH/B coverage is concerned, the FTTH Council reports that in Italy **FTTH/B coverage has increased by 48%** and, in rural areas, it identifies a 16% coverage of areas with a population density of less than 150 inhabitants per km^2. Although it does not perfectly correspond to the white area classification established by the Italian Ministry of Enterprise and Made in Italy, the Italian

figure for the FTTH Council in 2015 was 0%: the results achieved in recent years clearly show the positive impact Open Fiber has had on the coverage of these areas. Finally – in the Telecommunications Observatory[9] no. 4/2022 – AGCOM reported that FTTH accesses have increased from 440 thousand in December 2016 to 3.26 million in September 2022. With more than 2.3 million lines activated on its network in September, Open Fiber's FTTH network accounted for around 65% of the total market.

2022: A YEAR OF STRONG ACCELERATION FOR THE WHITE AREAS
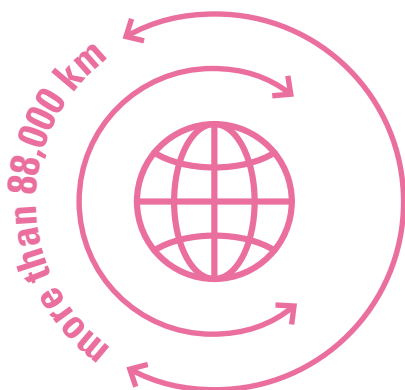
more than 88,000 km

Consistent with the concession granted by Infratel, the project to adopt ultra-fast bandwidth for households, young people and small businesses in white areas involves the construction of more than 88,000 km of network (more than twice the earth's circumference) and the issuing of more than 100 thousand authorisations in 6,232 municipalities, to reach a total of about 6.4 million real estate units (flats, offices, companies, public administration offices).

The speed of infrastructure construction in white areas is now in line with the implementation schedule shared in June 2022 with Infratel and the Ministry of Economic Development and presented at the Interministerial Committee for Digital Transition of 7 July 2022.

By 31 December 2022 more than 57,000 km of the network had been completed, or 65% of the total envisaged in the plan. The network kilometres represent the infrastructure development (construction, excavation, re-use, laying of cables, etc.) required for the realisation of the network under concession. From the beginning of 2022 to 31 December, 19,800 km of infrastructure was built: in just 12 months, the kilometres laid were about 53% of the 37,400 km built in the four years from the start of operations (2017) to the end of 2021.

19,800 km

Newly completed as at 31/12/2022

37,400 km

Completed as at 31/12/2022

To be completed

about 31,000 km

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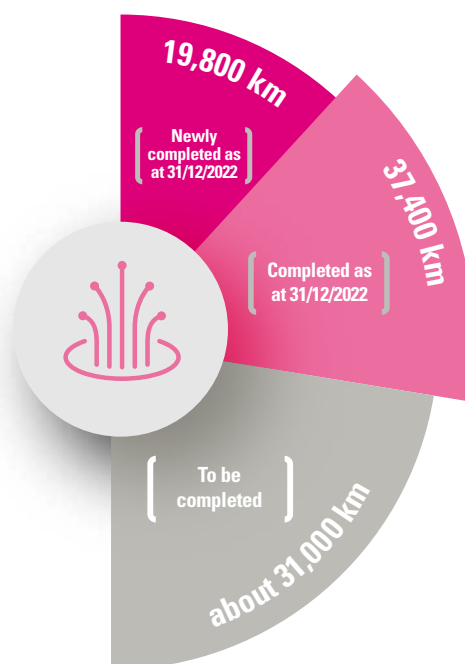
9 Quarterly publication prepared by the Authority's Research and Statistics Department.

1.2 ECONOMIC PERFORMANCE

1.2.1 The performance of Open Fiber

Open Fiber is working to bring innovation to the whole country and stimulate the long-term growth of businesses, organisations and the Public Administration. The multi-year plan provides for the coverage of **more than 20 million real estate units**, through the development and laying of an optical fiber infrastructure for a nationwide coverage of about 150,000 km.

In spite of the objective obstacles to the performance of its activities, which characterised the three-year period 2020-2022 (from the COVID-19 healthcare emergency to the Russia-Ukraine conflict), Open Fiber was able to continue with its network implementation plan and constantly guarantee its service, which became even more fundamental for citizens, companies and the Public Administration, precisely during the management of the healthcare emergency.

1.2.2 Business development and network expansion

About 2 million real estate units were connected in 2022, reaching a total coverage of about **15.5 million real estate units**[10], an **increase by 14%** compared to the previous year.

Once the work has been completed, Infratel Italia calls for tenders provide that the completed real estate units must be tested by the Licensor before they can be put up for sale. In addition to Infratel's verification that the network is actually working and that the work has been carried

out in a workmanlike manner, the process also involves the production of all the documentation required for the technical reporting of the work carried out and any variations made during the work must be reported too.

Connected real estate units
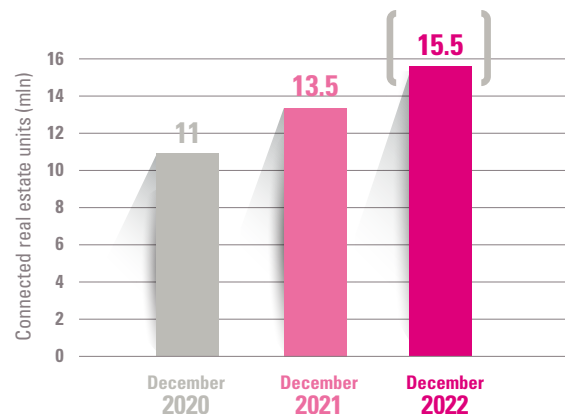
The total number of **municipalities being marketed as of 31/12/2022 is 4,928**, of which 4,690 are in the C&D Cluster (under Infratel Italia S.p.A. concession)[11].

Municipalities being marketed

Description	U.M.	2020	2021	2022
Municipalities in the A&B Cluster	no.	183	219	238
Municipalities in the C&D Cluster	no.	1,774	3,230	4,690
Total marketed municipalities	**no.**	**1,957**	**3,449**	**4,928**

1.2.3 Investments

The Company's overall investments[12], in 2022, amounted to **€1,502 million**. Investments mainly concern the creation of the network and network infrastructures, the acquisition of rights to use third-party infrastructures (IRU[13]), the development of software and

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10 Out of those, 2.5 million real estate units were connected using FWA technology with reference to C&D cluster scope.

11 With reference to the network development performance in the market failure areas covered by the first and second tender, Open Fiber was able to start operations in January 2018 only, after 13 appeals against the award of the Infratel concessions which significantly delayed its signing and the complex definition of the Operating Manual for the for the award of works. The activities for the Regions included in the third tender were launched in the second half of 2019 following the signing of the Concession, which took place in April 2019.

12 Overall Investments – These include all assets used by the Company to build its own network infrastructure and the licensed network, excluding rights of use in accordance with IFRS 16, financial expenses in accordance with IAS 23 and before the contribution to the licensed network.

13 Indefeasible Right of use.

IT equipment, improvements to third-party assets for both the network infrastructure and the Company's premises, as well as the creation of the network under concession.

Overall investments (€M)
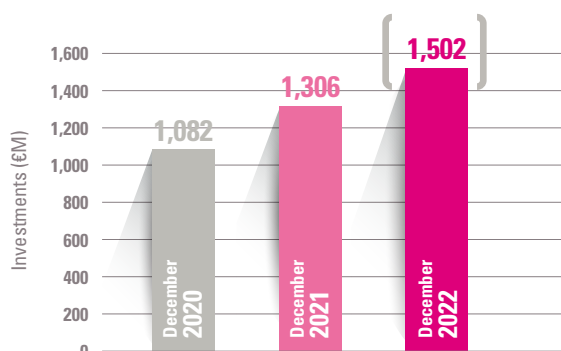
1.2.4 The economic value created and distributed

Open Fiber is committed to meeting the challenges of sustainability also from an economic point of view, through the generation and distribution of economic value not only for the company, but also for its stakeholders. Despite being a young company, Open Fiber aims to be a reliable interlocutor with whom to develop partnerships and grow over time and to contribute to the strengthening of the national business fabric.

In 2022, the **economic value directly generated** amounted to €470 million, broken down as follows[14]:
- Operating costs, i.e., the value distributed to **suppliers**, amounting to approximately €170.4 million (+37% compared to 2021), including costs for services, costs for leases and rentals and operating expenses.

- Value distributed to **employees** – remuneration and benefits – amounting to more than €88.8 million (+10% compared to 2021).
- Value distributed to **capital providers**, which includes financial charges, amounting to approximately €119.4 million (-9% compared to 2021).
- Value distributed to the **Public Administration**, amounting to approximately minus €36 million (for the reporting period 2022, it shows a negative value as the total income tax was not actually distributed to the Public Administration).
- Value distributed to the **community**, amounting to approximately €367,000 (+13% compared to 2021), mainly consisting of charitable donations, gifts and membership contributions.

The **economic value retained** by Open Fiber, equal to the difference between the value generated and the value distributed, includes the profit or loss for the year, amortisation, depreciation, and provisions.

Direct economic value generated and distributed (€M)
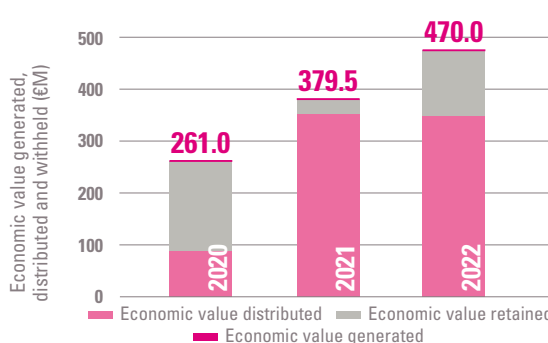
PROJECT FINANCING TO SUPPORT THE BUSINESS PLAN

On 14 February 2022, the Company signed a new financing agreement with a pool of banks for a committed amount of up to a total of €7,175 million (part of which is intended to repay the existing debt under the previous financing agreement signed on 3 August 2018 and last amended on 14 October 2020) and the possibility of drawing up to a maximum of an additional €2,825 million. The financing is intended to support the investments envisaged in the Company's business plan and is the largest ever in EMEA (Europe, Middle East and Africa) for investments in telecommunications networks.

14 Since the reporting period 2021, a change has been carried out in the reclassification of the economic value distributed to suppliers (e.g. operating costs), to the Public Administration and to the community for the economic items related to other operating costs.

201-1 DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED

Description	U.M.	2020	2021	2022
ECONOMIC VALUE GENERATED	**€/000**	**261,001**	**379,546**	**470,027**
Value of production (total revenues)	€/000	261,001	379,546	469,903
Other types of financial income (financial income)	€/000	0	0	124
DISTRIBUTED ECONOMIC VALUE	**€/000**	**90,020**	**351,838**	**342,811**
Operating expenses	€/000	105,749	124,035	170,357
Value distributed to employees	€/000	66,880	80,375	88,761
Value distributed to capital providers	€/000	94,743	130,668	119,363
Value distributed to the Public Administration	€/000	(177,997)	16,436	(36,037)
Value distributed to shareholders	€/000	-	-	-
Value distributed to the community	€/000	646	324	367
ECONOMIC VALUE RETAINED	**€/000**	**170,981**	**27,708**	**127,216**

1.3 GOVERNANCE

1.3.1 Governance system and company organisation

Open Fiber's governance system is structured according to the traditional model and includes an administration body (Board of Directors[15]) and a control body (Board of Auditors).

Open Fiber was directly controlled by **Open Fiber Holdings S.p.A., 60% owned by CDP Equity**, a Company of the Cassa Depositi e Prestiti Group, and **40% owned by Fibre Networks Holdings S.a.r.l.**, a company belonging to the Macquarie Group.

With this shareholding structure, **Barbara Marinali** was appointed President of the Company and **Mario Rossetti** CEO and General Manager. Subsequently, with an organisational arrangement dated 16 December 2022, the new company organisation was determined[16].
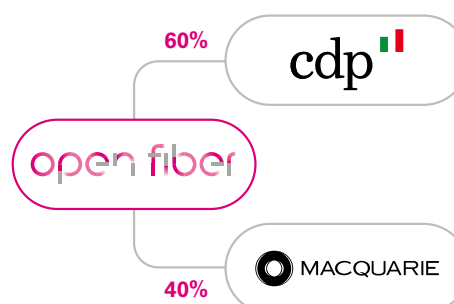
On 3 December 2021, the Company's Board of Directors approved the 'Procedure on the Composition, Role and Operation of the Committees of the Board of Directors', which governs the composition, operation, duties and responsibilities of the **Board Committees** ('Committees of the Board of Directors'), established on 22 December 2021.

- **Investment Committee:** consists of three members, two of whom are chosen from among the directors drawn from the names indicated in the slate by

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15 The Board of Directors consists of seven members, as resolved by the Shareholders' Meeting.
16 By Organisational Notice of 02/01/2023, the Infratel Legal and Concessions Department was assigned to Monica Giugliano.

the Majority Shareholder of Open Fiber Holdings S.p.A., including the CEO, and the remaining member chosen from among the names indicated by the Minority Shareholder of Open Fiber Holdings S.p.A.

The Committee has the task of assisting the Board of Directors in evaluating the progress of the investment plan with respect to the business plan and recommending measures to address

Board of Directors

Mario Rossetti
CEO AND GENERAL MANAGER
Member Investment Committee

Barbara Marinali
BOARD PRESIDENT
Member Related Parties Committee

Alessandro Tonetti
BOARD MEMBER
Member Remuneration Committee

Gianluca Ricci
BOARD VICE PRESIDENT
Member Control and Risk Committee,
Remuneration Committee and Related Parties Committee

Geoffrey Shakespeare
BOARD MEMBER
Member Related Parties Committee,
Investment Committee, Control and Risk
Committee and Remunation Committee

Roberta Battaglia
BOARD MEMBER
Member Investment Committee, Control and Risk Committee,
Remuneration Committee and Related Parties Committee

Susana Leith-Smith
BOARD MEMBER

Organization chart

President
Barbara MARINALI

CEO and General Manager
Mario ROSSETTI

Audit
Gianluca ACQUAS

Legal and Infratel Concessions
Filipa JORGE RAMOS

Purchasing and Logistics
Pasquale SALVIONE

Regulation and European Affairs
Francesco NONNO

Corporate Affairs
Stefano CUSMAI

External Relations
Andrea FALESSI

Amministrazione, Finanza e Controllo
Andrea CRENNA

Personnel, Organisation and Services
Ivan REBERNIK

Network & Operations
Guido BERTINETTI

Business Market
Stefano MAZZITELLI

Residential Market
Simone LO NOSTRO

Information & Communication Technology
Andrea BASSETTO

delays in the start of capital expenditures that Open Fiber may incur, as well as analysing new investments, tenders and extraordinary transactions.

- **Related Parties Committee:** consists of four members, two for each Section of the slate from which directors are elected. It has the task of assessing the appropriateness and cost effectiveness of any Related Party transaction (the term 'Related Party' must be interpreted in accordance with CONSOB Regulation No. 17221/2010). The Company has identified criteria and rules to be followed to ensure the transparency and substantive and procedural propriety of Related Party Transactions through the recent adoption of the Procedure for the Management of Related Party Transactions, approved by the Board of Directors on 13 December 2022.

- **Control and Risk Committee:** composed of three members, appointed and revoked by resolution of the Board of Directors, two of whom are chosen from among the directors indicated by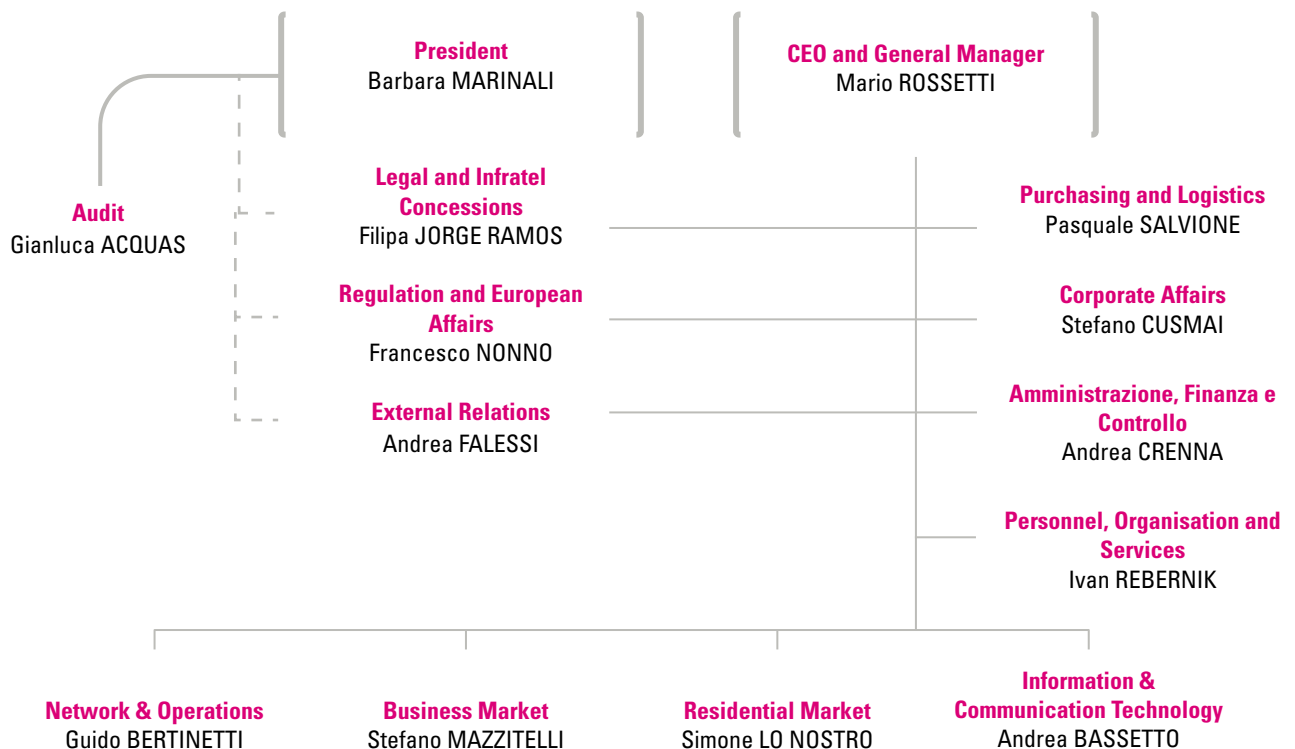 the Minority Shareholder of Open Fiber Holdings S.p.A. and the remaining member chosen from among the directors indicated by the Majority Shareholder of Open Fiber Holdings S.p.A. It has the task of assisting the Board of Directors, where appropriate by issuing non-binding recommendations, with respect to evaluations and decisions relating to internal control, the risk management system and corporate social responsibility. The Control and Risk Committee meets periodically, involving the corporate Functions it deems necessary, interacting mainly with the Audit Department and the second-level Control Functions.

- **Remuneration Committee:** consists of four Directors, two from each Section of the slate from which Directors are elected, appointed by resolution of the Board of Directors. The Committee appoints a chair from among its members. The Remuneration Committee is set up to support the Board of Directors

in evaluations and decisions relating to remuneration. Specifically, it expresses opinions and/or sends recommendations, even of a binding nature, to the Board of Directors concerning:

- The remuneration of Executive Directors, Directors holding special offices and the General Manager.
- The General Remuneration Guidelines, the annual and/or multi-year variable incentive plans and the definition of the performance targets relating to the variable remuneration of executive directors or directors with special duties, General Manager and Senior Executives.

Open Fiber has also set up a number of committees and working groups in charge of specific issues.

Sustainability Committee

The Sustainability Committee is the body having the mission of assisting the Board of Directors in a proactive and advisory capacity in assessing ESG (Environmental, Social & Governance) risks and opportunities and in making decisions on sustainability issues related to Open Fiber's business, its dialogue and stakeholder engagement, and the Company's corporate governance, with the aim of generating shared long-term value.

The Committee is chaired by the Chief Executive Officer and is composed of permanent members (identified in the Departments that manage material ESG issues and are responsible for actions aimed at improving the company's impact on these issues), members on call (identified in the Departments that support the Committee in carrying out specific activities) and the corporate Sustainability representatives of the Personnel, Organisation and Services Department. The main objectives of the Sustainability Committee are:

- Definition of the corporate strategy on ESG issues for the creation of shared value with all stakeholders in the medium to long term.

- Validation of the assessment of risks and opportunities arising from ESG issues.
- Checking the progress of the strategy and monitoring the results achieved against the objectives.
- Supervision and validation of the Sustainability Report, including materiality analysis.

Access Mechanism Committee

This committee operates within the framework of the supplier qualification process and examines applications to join the Access Mechanism. It has been set up in the Purchasing and Logistics Department and consists of a Chairman, two contact persons to be identified within the Purchasing and Logistics Department and the Network & Operations Department and a Buyer belonging to the Purchasing and Logistics Department. In particular, the Committee is responsible for verifying applications to join the Access Mechanism and, where there are issues relating to compliance with current regulations, it is supported by the Purchasing and Logistics Department. The Committee, therefore, after carrying out the appropriate assessments,

decides on applications for membership, on the exclusion of participating operators and on suspensions.

Quality & HSE Committee

This Committee is made up of the CEO and the General Manager[17], This Committee is composed of the Directors with HSE delegated powers, the HSE Management System and Quality contact person of the Personnel, Organisation and Services Department and the Contact Persons of the Departments/Functions dedicated to HSE and Quality Risk Management. The Quality & HSE Committee is involved in the Management Review process provided for by the Management System, which aims to ensure the monitoring of the suitability, adequacy and effectiveness of Quality, Health, Safety and Environmental Management System of Open Fiber.

Crisis Committee

This body is made up of the CEO and the General Manager and all the Directors, and is responsible for strategic coordination and management, as well as decision-making in the event of an incident or emergency that

Sustainability Governance

Board of Directors → Sustainability strategy / Sustainability report → **Sustainability Committee** → ESG risk and opportunity assessment / Performance monitoring → **Sustainability Contacts Personnel, Organisation and Facility Department**

Approves ← Verifies, validates, formulates opinions, supports the BoD ← Collect ESG data and information, monitor performance, draw up proposals, support the Committee in strategy development

17 By resolution of the Board of Directors, the CEO of Open Fiber S.p.A. has been identified as the Employer pursuant to art. 2 paragraph 1 letter b) of Legislative Decree no. 81 of 9 April 2008 and subsequent amendments and additions.

may generate or has already generated a state of crisis. The Department responsible for convening the Crisis Committee is the External Relations Department, in agreement with the Directors of the areas most affected by the event.

Business Areas Committee
This Committee assesses and categorises the Business Areas (red: closed at high security, needing specific access control, video-surveillance and anti-intrusion protection measures; yellow: closed at medium security, needing specific access control and anti-intrusion protection measures; green: all other areas, although subject to controlled access). The Committee, made up of six Contact Persons from the various Company Departments, is activated by the Contact Person from the Personnel, Organisation and Services Department, who appoints a person in charge of each red and yellow area.

Projects and Investment Authorisation Review
This Review body, coordinated by the Administration, Finance and Control Department, is responsible for ensuring regular and effective control of the process of authorising expenditure and investments made by the Company. Specifically, the main activities carried out concern:
- Evaluation and approval of investment/ purchase initiatives to be submitted to the Board.
- The process aimed at prioritising the use of company resources.
- The analysis of deviations between the actual and the approved amount of expenditure, using evidence gathered by the Governance Group.
- The approval of any re-forecasts.

Working Group on Reputational and Integrity Risks
This Working Group, made up of representatives of the Purchasing and Logistics, Legal and Infratel Concessions and Audit Departments, is responsible for supporting the CEO and the General Manager in assessing and deciding on the reliability, professionalism and integrity of suppliers and/or contractual counterparties of Open Fiber, for all situations and critical issues not falling within a category envisaged by current legislation and regulations. More in detail, the Working Group:
- Examines and evaluates the information and documents relating to the critical issues detected.
- Examines the findings of any activities carried out by the appointed external consultant.
- Issues its reasoned opinion on the advisability of continuing or establishing the contractual relationship with the supplier affected by the criticalities highlighted, analysing all the legal and business risks associated with its decision.

1.3.2 Mission, Vision and Distinctive Elements of Open Fiber

Open Fiber's mission and vision define the corporate culture, what the company believes in and what it considers important to connect the country and people.

Moreover, at the corporate level Open Fiber guarantees some distinctive elements that can be identified in five strengths:
- **Protection of competition:** as a wholesale-only ultrabroad infrastructure provider, we offer access to the network on fair and non-discriminatory terms to all interested operators.
- **Separation between network and services:** starting from the cardinal principle of the protection of competition and the right attention to the liberalisation process of the TLC sector, desired by all Italian and European authorities, we maintain a clear separation between the use of the network and that of related services.
- **High-quality and highly efficient infrastructure:** the Open Fiber optical

fiber network guarantees very high performances by virtue of a transmission capacity of up to 40 Gbps (future proof), the only one capable of supporting the evolution of the services on offer.
- **Development of innovation and creation of shared value:** thanks to innovative and inclusive relations favouring a global economic growth, we established a policy of constant dialogue with institutions and local communities.

- **Sustainability and environmental awareness:** oriented to environmental sustainability, we favour the development of a fiber optic network, where possible using existing structures. Designing our infrastructure, which combines sustainability and advanced technology, we protect the integrity of places, with particular attention to areas of landscape and cultural interest.

MISSION

Open Fiber brings Ultra Broadband (BUL) the optical fiber to the entire Italian territory to speed up Italy, giving people access to the most advanced digital services as well as the opportunities offered by an increasingly interconnected world.

It is a strategic choice that responds to the objectives set by both the European Union's Digital Compass 2030 and the "Italia a 1 Giga" Plan, an ambitious project that aims to quickly remedy Italy's infrastructural deficiency, guaranteeing competitive costs and short lead times.

As an infrastructure player, Open Fiber is responsible for the construction, management and maintenance of an ultra-fast electronic communications network with extremely high levels of efficiency and reliability.

Open Fiber is only active in the wholesale market – according to a *wholesale only* model – offering access to all market participants that are interested on equal terms.

VISION

FTTH optical fiber: contributing to the country's change

Open Fiber aims to create an infrastructure based on the best fiber optic technology for transmission, in order to contribute to the socio-economic change of the Country. An ambition that envisages overcoming the digital divide and improving the lifestyle of people, families, businesses and workers, both in small villages and in large metropolitan cities.

More services, more speed, more accessibility, more reliability with FTTH to offer the opportunity to do more but to do them quickly. In addition, it saves energy so that people can devote more time to themselves and their passions.

ESG Certification

Open Fiber was the first company in Italy to achieve ESG (Environmental, Social, Governance) certification in early 2023.

The ESG Certification is a non-accredited standard developed by SGS – the world's leading provider of inspection, verification, testing and certification services – to assess the management of environmental, social and governance aspects within an organization. The ESG certificate is awarded to an organization that meets criteria that summarize the requirements of ESG best practices and widely used sustainability standards.

This important recognition came after a careful analysis of the policies and practices implemented by Open Fiber and, in addition to confirming its commitment to sustainability over the years, it has enabled the company to develop established and verifiable internal processes with a view to continuous improvement in order to achieve its ESG goals and to improve performance incrementally.

1.4 AN ETHICAL BUSINESS

1.4.1 Code of Ethics and MOG 231

Ethical, transparent and responsible behaviour: Open Fiber has adopted a **Code of Ethics** that brings together the values and principles considered essential by the Company to operate in the markets and standardises corporate behaviour towards all stakeholders. It is mandatory for members of corporate bodies, members of the Supervisory Board, employees, collaborators, consultants, suppliers and partners who for any reason and in any form establish relationships or relations with Open Fiber, directly or indirectly, permanently or temporarily. The primary objective of the Code of Ethics is to meet the needs and expectations of interested parties, promoting a high level of professionalism and prohibiting behaviour that conflicts with legislative provisions, ethical principles, values and the *Mission* of the Company.

The Company has also adopted an **Organisational, Management and Control Model** pursuant to the provisions of Italian

Legislative Decree no. 231 of 8 June 2001 (hereinafter referred to as Model or MOG 231), to protect the administrative liability attributable to the Company, i.e. a structured and organic internal regulatory system of procedures, policies, guidelines and operating instructions, as well as control activities, to be carried out even on a preventive basis, aimed at preventing the occurrence of any kind of offence or crime.

Open Fiber's MOG 231 is dynamic and evolves continuously: the Company promotes its updating every time there are organisational-corporate and/or regulatory changes and carries out appropriate checks on the implementation and actual functioning of the control measures contained therein. The Company has updated the Code of Ethics in line with the changes made to the MOG 231[18].

The ways in which the Company concretely implements MOG 231 indications are as follows:
- Verification of the company's conduct, with possible implementation of the sanctions system as set out in the applicable CCNLs (National Labour Agreements).
- Monitoring the functioning of the MOG 231 and updating it when necessary.
- Segregation of roles in the structuring of business processes and in the management of financial resources.
- Definition of policies, procedures and operational instructions describing the methods and performance of company activities, as well as the methods of filing and storing documents.
- Definition of a system of proxies and powers of attorney consistent with the responsibilities assigned in order to formalise the management, coordination and control responsibilities within the

THE PRINCIPLES OF OPEN FIBER'S CODE OF ETHICS

Impartiality

Confidentiality

Fairness

Conflicts of interest

Relations with the shareholders

Value of human resources

Protection of individual persons

Fair competition

Quality, environmental protection and responsibility towards the community

Health and safety

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18 In the last quarter of 2022, work began on the revision of the MOG 231 and the related Risk Assessment 231.

Company, with the associated levels of reporting.

- Definition of the map of the Company's Risk Areas by means of a Risk Assessment activity.
- Assignment to the Supervisory Board of specific tasks to monitor compliance with the principles of the Code of Ethics and the Model, the functioning, effectiveness and adequacy of the Model and the need to update it, where particular needs are identified.
- Transmission of the Company's information and data, as well as compliance with EU Regulation 679/2016 by ensuring their confidentiality.

The success of the company and the construction of a stimulating working environment cannot be separated from the compliance with ethical principles in business management. That is why Open Fiber is committed to providing training on the subjects of the Code of Ethics and the MOG 231 to all employees.

The Company has organised several training modules aimed at making employees aware of conduct or circumstances that may constitute offences covered by Italian Legislative Decree 231/2001, including those related to corruption, for which no incidents have been reported in the last three years. In this context, confirming Open Fiber's constant commitment to fighting corruption in all its forms, 12 company processes have been mapped, each of which may be related to the risk of corruption. The main risks identified are linked to the strategic sphere (e.g., definition and implementation of strategies, reputation), financial sphere (e.g., credit, financing), operational sphere (e.g., illegal acts, health and safety, IT systems), external or area-specific sphere (e.g., competition, regulation).

The MOG 231 training contents are updated in relation to the evolution of legislation and of the MOG 231 itself. In the event of significant changes (e.g., the extension of the Entity's administrative responsibility to new types of offences), Open Fiber will integrate the contents in a coherent manner, also ensuring that they are available to the entire corporate workforce.

The training courses arranged for employees are compulsory; the Company

Table 1: Correlation Table MOG 231 and Material Issues 2022

MOG 231	Material issues
Occupational Health and Safety	Accidents and injuries Contribution to employee welfare Empowering the supply chain
Receiving stolen goods, money laundering and self laundering	Incidents of corruption Empowering the supply chain
Corporate offences and corruption between private individuals	Incidents of corruption
Crimes against the Public Administration	Incidents of corruption Privacy and cyber security breaches
Environmental offences	Generation of climate-changing emissions Waste generation Empowering the supply chain
Employment of third-country nationals	Empowering the supply chain
Copyrights and industry and trade rights	Incidents of unfair competition
Cyber crimes and unlawful data processing	Privacy and cyber security breaches
Crimes against individual personality	Contribution to employee welfare Empowering the supply chain

informs the Surveillance Body of the results, making sure, in particular, that its employees attend the courses. Unjustified non-participation in the above training programmes by employees could lead to the imposition of a disciplinary sanction in accordance with the rules set out in the MOG 231.

In order to make respect for **human rights** an essential requirement in the performance of Open Fiber's operational activities, the Code of Ethics and the MOG 231 also regulate the principles related to discrimination, mobbing, illegal stay and work, and rights of the individual, and they are also the subject of training for all company staff.

The promotion of an ethical and transparent culture is an essential factor for Open Fiber and for this reason is an integral part of the documentation to which reference should be made in the management of relations between the Company and employees, suppliers, Customers and, more generally, any subject with which it has links of a legal or non-legal nature (for example associations to which donations are made). For this reason, employees, companies and associations that collaborate in any capacity with Open Fiber are required to sign up to respect the principles contained therein.

Confirming the importance for Open Fiber of complying with the Code of Ethics, the MOG 231, or any corporate procedure or provision, the Company has chosen to use the "EQS Integrity Line" platform, a **safe digital reporting** channel with anonymous dialogue function that allows employees, collaborators, suppliers and any other counterparty of the Company, to report (also for the purposes of the whistleblowing legislation) any violation or suspected violation, including behaviours and practices that may cause economic

damage or prejudice to Open Fiber. Each report is handled in full compliance with data protection (GDPR) and ISO-certified high security hosting, catalogued, processed, evaluated and, finally, stored. The platform is managed by a third party that is independent from Open Fiber, thus guaranteeing the security of the data processed to protect the reporting and reported subjects.

Open Fiber receives, takes in charge, manages in a timely manner and carries out the necessary actions for an initial verification and analysis of the reports received in accordance with the guideline "Reporting of Irregularities", which can be consulted by the entire corporate workforce on the document management platform.

1.4.2 Risk control

Open Fiber's Internal Control and Risk Management System (Sistema di Controllo Interno e di Gestione dei Rischi, SCIGR) consists of the set of rules, procedures and organisational structures aimed at allowing – through the identification, measurement, management and monitoring of the main risks – a conduct for the Company that is consistent with the stated principles and objectives.

Together with the Board of Directors, which defines the guidelines of the system, verifying its adequacy, effectiveness and proper functioning, the Control and Risks Committee, the Chairman of the Board of Directors, the CEO, the Board of Statutory Auditors, the Supervisory Board (SB) and the Head of the Audit Department are part of the SCIGR.

The Risk Control Committee established in 2022 consists of a number of Board members, and is responsible for monitoring the process of identifying, assessing and managing risks on behalf

OPEN FIBER'S ENTERPRISE RISK MANAGEMENT (ERM) PROCESS

The ERM process is implemented by the Board of Directors and Top Management of the company, inspired in its structure by the UNI ISO 31000 standard "Risk Management", in order to analyse, assess and manage all the risks that may have, at different levels, an impact on the company's business. Supervised by the Audit Department, it is used to support the definition of business strategies, providing reasonable assurance on their achievement, and is designed to identify potential events that may affect the achievement of corporate objectives. The process consists of the following steps:

Step 1: identification of business objectives and processes.

Step 2: identification of the risk universe.

Step 3: assessment of the level of risk.

Step 4: definition of the risk treatment and the Action Plan.

Step 5: aggregation of results, monitoring and reporting.

The Control and Risk Committee (consisting of three members, appointed and dismissed by resolution of the Board of Directors) assists the Board of Directors, if necessary by issuing non-binding recommendations to the latter for evaluations and decisions relating to internal control, the risk management system and corporate social responsibility.

of the Board of Directors. The Committee is presented with the main findings of risk management activities, related action plans and evidence of the controls put in place.

Inspired by existing national and international best practices, the Internal Control and Risk Management System represents a key element of Open Fiber's Corporate Governance as it allows the Company to:
- Pursue the objective of creating value in the medium to long term, also defining the nature and level of risk compatible with the strategic objectives.
- Make informed decisions consistent with risk appetite, disseminating a correct

knowledge of risks, legality and corporate values.

The SCIGR is based on the so-called 'three lines of defence': **line or first-level controls** (performed by individual business units on their own processes), **second-level controls** (entrusted to specific business functions to monitor typical categories of specific risks) and **third-level controls** or internal audit activities (aimed at assessing the adequacy of SCIGR as a whole).

In line with the Company's strategic and operational model, Open Fiber decided to adopt a reference framework for the regulation of the SCIGR consistent with the model "Internal Controls – Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO Report). It consists of five interconnected components that are integrated into processes at all levels of the organisation: Control Environment, Risk Assessment and Management, Control Activities, Information and Communication, Continuous Monitoring of Control Systems.

As of the beginning of 2022, Open Fiber pursued a further improvement of the process, introducing a **strategic level of risk assessment** that allows the company's objectives to be linked to its operations. This new level of assessment has made it possible to integrate market demands and new risks linked to sustainability issues (so-called ESG risks). At the end of the analysis, strategic risks were linked with operational risks, in a process that led to the creation of a correspondence between the strategic and operational organisational matrix. The new strategic risk identification process started with a benchmark analysis of the main risks of similar industries. This phase was followed by a series of one-to-one meetings with key function directors. Finally, joint meetings were organised with the Committee of Directors in the presence of the CEO.

As anticipated, the analysis led to the identification of the main ESG risks, as shown in the table.

1.4.3 Privacy Protection

Compliance with privacy regulations is a priority for Open Fiber. For this reason, the Company is committed to protecting the data acquired, stored and processed in the context of its activities, ensuring compliance with the regulations on data protection, internal processing and processing by third parties (e.g., suppliers), as well as defining strategies

to control and monitor compliance with the principles relating to information security.

Privacy activities started in 2018 followed three steps of maturation, in accordance with the General Data Protection Regulation No. 679/16 (GDPR), as interpreted by the European Data Protection Board and the Italian Data Protection Authority:
- **Gap analysis:** identification of critical areas to be addressed, appointment of the Data Protection Officer (DPO), drafting of processing registers for each Department.
- **Impact assessment:** identification and implementation of activities aimed at

ESG risk mapping	Risk description
Risk associated with the occurrence of natural events linked to climate change	Extreme natural events related to climate change may lead to delays in the development of works, damage to the existing network, major service interruptions (resulting in customer dissatisfaction), reduced operational capacity and accidents at work.
	Mitigation activities
	• Updating of Business Continuity, Emergency Management and hazard identification procedures, risk assessment and definition, implementation of prevention and protection measures. • Regular updating of emergency plans and risk assessment documents.
Business Continuity Risk	**Risk description**
	Disruption in the operation of infrastructure and/or interruption of services due to critical events related to technology or natural, social and pandemic events.
	Mitigation activities
	• Establishment of a Control and Risk Committee. • Update of the Business Continuity and Emergency Management procedure.
Corruption risk pursuant to Italian Legislative Decree 231/01	**Risk description**
	Incidents of public bribery (e.g. bribery of a public official) and private bribery (e.g. bribery of a manager of the company itself) as understood by Italian Legislative Decree 231/01.
	Mitigation activities
	• Preparation of an Organisational, Management and Control Model pursuant to the provisions of Italian Legislative Decree 231/01, consisting of procedures, policies, guidelines, operating instructions and control activities. • Training and awareness-raising of employees on the behaviour and circumstances that may constitute offences covered by Decree 231/2001. • Mapping of business processes[19] that corruption risk may be related to. • Setting up of a whistleblowing channel.
HSE risk	**Risk description**
	Accidental events in the course of the company's operations with significant effects on people and the environment, with particular reference to production processes (e.g. utility blackouts, spills, gas leaks, accidents on site to workers/population).
	Mitigation activities
	• Implementation of a Management System for Quality, Occupational Health and Safety and Environment, consisting of procedures, policies, guidelines, operating instructions and control activities. • Predisposition of specific company procedures to manage incidental events related to HSE issues. • Institution of a Quality & HSE Committee. • Training and awareness of employees on the importance of their work, their contribution to the achievement of health, safety and environmental goals, and the effectiveness of the QHSE management system and the resulting performance of the organization. • Predisposition of a whistleblowing channel for the Reporting Violations. • Regular update of the documentation required by current legislations, considering the alerts and various relationships with institutional bodies and the sensitive activities in the award of third parties.

19 In 2022, the number of mapped business processes was 12.

DATA PRIVACY GOVERNANCE

The model was structured by Open Fiber to ensure integrity and confidentiality, as well as compliance with the principles of Privacy by Design and Privacy by Default, which provide for the development of measures to protect data in the design phase and measures to ensure that only data necessary for a specific purpose are processed.

The model envisages the role of the Privacy Representative – identified within the Legal Function – charged with carrying out the activities that Open Fiber performs as data owner and/or data processor and the appointment of the Data Protection Officer (DPO).

An integral part of this model are the policies and procedures defined by the Company, namely "Policy for the Management of the Data Privacy Governance Model", "Management of Data Subjects' Rights", "Privacy by Design and Privacy by Default", "Management and Notification of Data Breaches and Appointment of System Administrators".

mitigating the criticalities identified for 'high' and 'very high' residual risk treatments.

- **Internal and external Privacy Audit:** verification of the compliance of Departments and entities appointed as data processors.

All employees have been recognised as "Authorised Data Processors". Furthermore, System Administrators have been appointed. Data processing in Open Fiber is carried out following the principle of *accountability* introduced by the GDPR, in order to comply with the general principles of lawfulness of data processing, correctness and accuracy of processed data, transparency, limitation of the purposes of processing and data storage.

Each year privacy-relevant corporate procedures are updated to comply with new legal and regulatory guidelines and the new measures issued by the Italian Data Protection Authority.

1.4.4 Empowering the supply chain

Description of the supply chain
Open Fiber aims to build a fiber optic infrastructure capable of covering the whole country with an Ultra-Broadband network. In order to achieve this goal, cooperation agreements with companies are necessary to ensure the high standards with which the Company contributes every day to wire the country.

Open Fiber relies on leading system integrators for the **installation, management and maintenance of the network infrastructure**. With the aim of respecting the environmental and landscape heritage, the installation is carried out wherever possible using existing infrastructures such as sub-services, cable ducts and piling[20]. This makes it possible to minimise not only the environmental impact of building a new infrastructure (e.g., management of waste material from excavations, atmospheric emissions due to the operation of vehicles), but also the social impact linked to the presence of construction sites in the urban areas in which work is carried out (e.g., inconvenience due to traffic, occupation of public areas). Where necessary, excavation activities use the most modern techniques such as mini-trenching and "no-dig" horizontal drilling.

As far as the **procurement of goods and products** is concerned – both passive (cables, cable pits, manhole covers, cabinets) and active (OTDR[21] and access equipment) – Open Fiber purchases directly almost all the necessary materials in order to guarantee the highest quality of the infrastructure. The production is located both in EU and non-EU countries and these materials are purchased both on the Italian market and from foreign suppliers: for example, the purchased cables are partly produced in Italy, but on a large scale in India, China and South Korea.

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20 In agreement with the relevant management bodies.
21 Optical Time Domain Reflectometer – used both to certify new fiber installations and to diagnose faults in fiber optic networks, containing fault location and multifunctional testing.

Quality, transparency and sustainability of procurement are the principles Open Fiber follows in the performance of all its activities. For this reason, the Company has defined a transparent Qualification Process that is open to all interested companies and professionals.

Qualification Processes are divided into:
- A&B Cluster, which is the sector in which Open Fiber operates, for the construction of the infrastructure, with its own investments (cities and more urbanised areas) and which also includes all the Services and Supplies used in the company's operations.
- C&D Cluster, which is the sector in which Open Fiber operates for the construction of the infrastructure, thanks to funding granted by Infratel Italia S.p.A. for the development of Ultra-Broadband in areas of market failure.

Within the **A&B Cluster**, for each product type[22] Basic Requirements for Qualification (Requisiti di Base per la Qualificazione, RBQ) have been defined, i.e., basic technical-qualitative requirements that companies must meet to be included in the list of qualified suppliers of Open Fiber. For the A&B Cluster related to works, a minimum qualification requirement has been set up whereby those responsible for the management systems (quality, environment, health and safety) of suppliers must participate in training courses provided by Open Fiber.

2022 HIGHLIGHTS

88% new suppliers screened using social criteria

18% new suppliers screened using environmental criteria

In the procedures for awarding contracts for works, services and supplies launched as a Concessionaire (**C&D Cluster**) for the construction and management of a passive Ultra-Broadband infrastructure, Open Fiber follows the provisions contained in its own Operating Manual, approved by the Conceding Party, Infratel Italia S.p.A. In order to participate in tenders launched in the so-called white areas, operators must have adhered to the Access Mechanism open to all operators meeting the necessary general, economic and technical-professional requirements.[23] Adherence to the Access Mechanism is based on an open, objective and non-discriminatory process, developed in successive phases and aimed at determining whether an Economic Operator is eligible to perform the contracts tendered.

As part of the Qualification Process, in addition to the operator's productivity and economic reliability requirements, a series of qualitative requirements are imposed (of a compulsory or preferential nature depending on the product type), including a raw material and product traceability system, possession of a company Quality Management System (QMS) compliant with the current edition of the UNI EN ISO 9001 standard, issued by an accredited certification body, an Environmental Management System (EMS) compliant with and/or certified according to the UNI EN ISO 14001 standard, an Occupational Health and Safety Management System compliant with and/or certified according to the UNI ISO 45001 standard and an Energy Management System (EMS) compliant with and/or certified according to the UNI CEI EN ISO 50001 standard.

Furthermore, during the qualification process, using business intelligence services, Open Fiber analyses the

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22 For example: Network elements, Construction and maintenance work for fiber optic telecommunications installations, Professional services for the design of FWA and fiber optic networks.

23 Within the C&D Cluster, the selection of economic operators is carried out by means of an Access Mechanism open to all operators meeting the necessary general, economic and technical-professional requirements. For further information please refer to the Operating Manual available on the company website at the following link: https://openfiber.it/fornitori/diventa-fornitore/.

reputational risk to monitor the entry into its supply chain of counterparties that meet the requirements of the culture and values defined in the Code of Ethics adopted by the Company and Open Fiber policies. Reputational analysis encompasses issues in the environmental (e.g. responsible waste management) and social (e.g. respect for human rights and worker protection) macro-areas, among others.

At this time reputational risk is of particular importance considering the hidden risks for Italian companies of having even indirect links with counterparties that work with sanctioned entities, such as those involved in the Russia-Ukraine conflict, impacting verification activities throughout 2022.

Periodical assessment of suppliers
In order to measure the performance of its suppliers and monitor the technical and qualitative requirements of the activities requested and the goods supplied, Open Fiber has defined a **Vendor Rating** model. This model identifies the main elements of evaluation in order to assign to each Economic Operator a numerical value (Vendor Rating Index – Indice di Vendor Rating, IVR) representing not only its technical-economic and production performance, but also its environmental and social performance.

The Vendor Rating Index applies to all qualified Economic Operators and/or members of the Access Mechanism that are awarded a contract for carrying out works, providing services and supplies, or that have a direct impact on the quality of services or that are deemed critical to the achievement of its business objectives[24].

The macro-areas assessed according to the IVR include not only the compliance with "performance" requirements related to the agreements entered into during the negotiation phase (e.g. compliance in the delivery of goods, products and services), but also aspects of management of (e.g., frequency and scale of injuries), Environmental Protection (e.g. compliance in waste management) and compliance with quality standards as defined by the Technical Standards for the verification of Open Fiber installations during construction.

Depending on the value achieved by the IVR and depending on the severity of the shortcomings detected, the Company takes targeted measures that may include the request for improvement actions or corrective actions by suppliers, or, in the most serious cases, the exclusion or suspension of the supplier from the Supplier Register and/or the Access Mechanism.

Sustainable procurement
Aware of the urgency of prioritising and rewarding sustainable practices and behaviour, and in order to play a leading role in creating new development models

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Assessing performance to prevent and mitigate environmental and social impacts along the supply chain

Open Fiber has identified the actual and potential negative social environmental impacts along its supply chain on which it performs regular performance assessments by assigning IVR numerical values. The main impacts are:

- **Social impacts:** issues related to Occupational Health and Safety, negative impacts on citizens (e.g., in terms of disruption in public utilities provision due to damage and in terms of injuries due to inappropriate management of construction sites) and labour practices (e.g., related to the tax compliance of companies).

- **Environmental impacts:** impacts related to the use of raw materials and natural resources, waste production, air emissions, noise emissions, as well as incidents having a negative impact on environmental compartments.

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24 Scouting product categories are excluded from the Vendor Rating system: Scouting supplies, Scouting work, Scouting services. The Vendor Rating system became fully operational in 2020.

based on full awareness of its supply chain, in 2022 Open Fiber launched a 'Sustainable Procurement' pilot project with the aim of conducting an initial assessment of its supply chain on ESG (Environmental, Social and Governance) issues and investigating to what extent the values underpinning the business are integrated through the supply chain.

Suppliers with the greatest impact on the value of the supply chain were asked to complete a standardised self-assessment questionnaire based on their activities and focused on social, environmental and governance issues. The developed rating model, inspired by international guidelines– ISO 20400:2017 (Sustainable procurement guidelines), ISO 31000:2018 (Risk Management – Principles and guidelines) and ISO 26000:2010 (Guidance on Social Responsibility) – adopts a 'risk-based thinking' approach, i.e. based on the mapping of the main risks related to the product categories of the company's supply chain.

The analysis of the results allowed Open Fiber to become aware of how its supply chain is addressing ESG issues and to assess the commitment to sustainability of a representative sample of suppliers. This pilot project was a first step towards designing a shared tool within the company to measure the sustainability of the supply chain.

1.5 TRANSPARENCY AND EQUAL ACCESS AT THE HEART OF OPEN FIBER'S WORK

1.5.1 Antitrust issues

In pursuing the ambitious project of cabling Italy, Open Fiber relies on the support and collaboration of various players in the digital transformation with which it works in full transparency and synergy: institutions for the administrative management of permits, supplier companies for the building of the infrastructure and partner operators for the marketing of fiber to the end customer.

In compliance with the principles of transparency and in accordance with the agreements made jointly with the Ministry

of Infrastructure and Transport and the European Union, Open Fiber provides free access to the progress of works through its website, making available documents and interactive maps with which it is possible to see the progress of construction sites for each individual municipality, both for FTTH (Fiber To The Home) and FWA (Fixed Wireless Access) technology.

Furthermore, to ensure full compliance with the rules set up to protect competition, which are an integral part of the corporate culture and of the operational choices made on a daily basis, Open Fiber has adopted an **Antitrust Code** that provides all members of corporate bodies and employees with a systematic framework of reference on the protection of competition. It has also appointed an Antitrust Oversight Board made up of members of the Legal and Regulatory Departments that suspected unlawful acts and/or abuses are reported to

and that has the exclusive competence to analyse unlawfulness.

More specifically, the Antitrust Code identifies:
- Practices, conduct or behaviour that may violate competition law.
- The areas where there is a risk of offences occurring and the persons who, due to their responsibilities and functions, may be most exposed to such risks, in order to prevent them.
- The topics on which it may be appropriate for staff to discuss with the Antitrust Oversight Board, which is entrusted with the task of providing the necessary support and assistance on the application of the Code.

Failure to comply with the Antitrust Code can jeopardise Open Fiber's reputation, image and success and can result in very significant penalties for the latter. For this

Work progress
Check the progress of Open Fiber works and consult the map to find out which cities and municipalities have been cabled.

Entra

White Areas work progress
Check the progress of fibre-optic deployment in inland areas of the country.

Entra

General Information
All information about the UBB project: design, implementation, operation and maintenance to build a fibre-optic infrastructure.

Entra

Fast. Efficient. Safe.
Optical fiber revolutionises your life.

Violations Identified — 2
Automated Tests Run — 267
Guided Automatic Tests Run — 76

Results

90%

Health Score
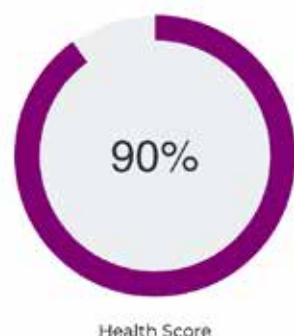
reason, the Company has decided to:

- Disseminate the Code widely, making it accessible to all personnel, by providing adequate and regular antitrust training programmes.
- Ensure the regular review and updating of the Code in order to adapt it to developments in competition law.
- Provide for a system of disciplinary sanctions to punish possible violations.
- Adopt internal procedures governing the process of receiving, analysing and dealing with possible violations.
- Ensuring the confidentiality of the identity and professional protection of whistleblowers, in compliance with legal obligations.

In 2022, there are no reported pending or completed legal actions against Open Fiber relating to anti-competitive behaviour and antitrust violations.

1.5.2 Transparency and communication to the public, businesses and Public Administration

As a wholesale operator, Open Fiber has always pursued its mission to connect Italy with an Ultra Broadband network. It is an ambition that needs the support and collaboration of various players involved in the digital transformation. In fact, the company operates in full transparency and in synergy with the institutions for the bureaucratic management of permits, with supplier companies for the implementation of the infrastructure, and with partner operators for the marketing of connectivity services to the end customer.

In its project to build an Ultra Broadband network, Open Fiber is committed to informing and involving all members of the local communities, from residents to

BEST IN MEDIA COMMUNICATION

Open Fiber has made transparency a founding pillar of communication. Proof of this is the achievement in 2022, for the third year in a row, of the Best in Media Communication certification from Fortune Italia and Eikon Strategic Consulting for "*an excellent reputational positioning, a positive opinion of journalists – especially in relation to the completeness and accessibility of information – and the ability to communicate very effectively the image of a company committed to the implementation of a 'future-proof' network, sustainable, partnership-oriented and attentive to the needs of the territory.*"

The BIC certification is a prestigious award given to companies that convey their mission, progress and achievements through effective communication strategies and partnerships with outstanding entities in their sector. A selection extended to all business sectors – companies, entities and organizations – which are evaluated through a scientific methodology based on measurable criteria: corporate reputation in the media, the impact of the communication team's work and the judgment of journalists and insiders.

associations, from entities to authorities, not only on the progress of the infrastructure development plan and the digital services that will be made available, but also on the social and environmental impacts that these activities may have.

In the white areas, where it operates as an Infratel concessionaire, and in the grey areas, where it was awarded 8 lots of the "Italia a 1 Giga" Plan, Open Fiber provides free access to the progress of its works in accordance with the information and transparency obligations it accepted as a winner of public tenders. From this perspective, the company provides several information points on its website, with documentation and interactive maps that make it possible to see the progress of construction sites for each municipality, both for FTTH and FWA technology.

In addition to the digital channels of the institutional website, Open Fiber provides stakeholders with the results of the monitoring and impact assessments that it carries out on a continuous basis, both through dedicated meetings with institutions (e.g. during conferences on innovation or digitisation) and during communication events addressed to the public (e.g. press conferences and meetings with associations). These opportunities for dissemination are publicised on the company website, where there is also a special section for press releases.[25]

In 2022 Open Fiber organised and took part in more than 30 public events aimed at disseminating the company mission and informing the community about the opportunities arising from the deployment of an Ultra Broadband infrastructure. The events, always held in partnership or in the presence of institutional stakeholders, took on different forms and purposes: from press conferences linked to the opening of construction sites or the marketing of services in the various

municipalities to sustainability events and the organisation of institutional discussions on specific projects.

Open Fiber has set up channels for handling stakeholder requests for information and complaints, and is committed to providing detailed response in a very short time, including through the use of social channels. Of the requests received in 2022, the majority concern enquiries about the possibility of activating the service at home, demonstrating that the benefit brought by the network infrastructure is considerable and well perceived by communities. Most of the complaints, however, were due to inconveniences caused by construction work.

In order to guarantee a higher level of accessibility, Open Fiber has implemented a tool on its website that facilitates the use of content for people with disabilities through Artificial Intelligence and the Accessibility Interface. The latter consists of a very intuitive management panel that provides access to six profiles: epilepsy safe profile; visually impaired profile; ADHD friendly profile; cognitive disability profile; navigation keyboard; blind users. Each user can configure their profile autonomously thanks to a specific section of the interface that allows the user to adjust the display mode to make it as readable as possible. The section is dedicated to profiles with specific learning disorders (DSA) and to all users with visual impairments, such as blurred vision and low vision.

As part of the project, Open Fiber performed an accessibility assessment of its website (openfiber.it) to check its compliance with 'Web Content Accessibility Guidelines 2.1', resulting in 100% compliance at application level AA and 90% compliance at the maximum achievable level.

25 See the website: https://openfiber.it/mondo-open-fiber/comunicati-stampa/.

1.6 THE QHSE MANAGEMENT SYSTEM

1.6.1 Integrated management at the service of all

The Quality, Occupational Health and Safety and Environmental Management System (hereinafter QHSE) adopted by Open Fiber complies with international standards UNI EN ISO 9001, UNI ISO 45001 and UNI EN ISO 14001 and was certified by an independent third party in 2020. The Management System is designed to ensure compliance with the commitments and achievement of the objectives stated in the Policy for Quality, Occupational Health and Safety and Environmental Protection. The adoption of this System – whose certifications were confirmed during the maintenance audit in 2022 – ensures the implementation of the process of continuous improvement of the Company's performance.

The QHSE Management System was developed by adopting a strategic and systematic approach based on risks and opportunities (**risk-based thinking**[26]) in all its planning, operational and performance assessment processes: the application of risk-based thinking assesses all internal and external factors, as well as the stakeholders and their expectations, that may have an impact on the organisation, identifying scenarios that may generate a risk or an opportunity in terms of Quality, Occupational Health and Safety and Environmental Protection. It is a strategic, systemic, conscious and sustainable approach addressed to the whole organisation, aimed at preventing and incorporating actions to improve performances and achieve objectives by guaranteeing the satisfaction of its stakeholders, the operational continuity of its business, research and continuous improvement: proper implementation of agreements, optimisation in the use of

resources and efficiency of processes, prevention of injuries and illnesses of workers, resilience to changing environmental conditions in line with the socio-economic context within which the Company operates.

The system involves all Departments and Functions of the Company, as well as all activities carried out directly by employees and by all those who, for any reason, work for Open Fiber in the processes of Design, Permitting, Installation, Maintenance and Activation of Telecommunication and Data Transmission Networks through Ultra Broadband fiber optics, including the sale of related services[27].

For Open Fiber, it is fundamental that all personnel and all persons interested in the Company's activities be able to contribute and participate in the optimisation of the QHSE Management System. For this reason, it involves workers and their representatives in the identification of hazards, risk assessment and definition of controls, as well as in the proposal of technical and organisational solutions to improve the use of tools, equipment and protective devices necessary to ensure the health and safety of workers. The dialogue between managers and employees is crucial to understand the requirements and needs to contribute to the improvement of the working environment and the organisation.

All the company's activities and the results achieved are periodically checked through internal Audits of the Management System, which verify the effectiveness and efficiency of the company's processes, consistency with current legislation (e.g. on Occupational Health and Safety and Environmental Protection), technical standards and the

26 Strategic and systemic approach based on risks and opportunities. International standards that adopt risk-based thinking in their latest reviews include ISO 9001 (Quality Management Systems), ISO 14001 (Environmental Management Systems) and ISO 45001 (Occupational Health and Safety Management Systems).

27 The purpose of the certification is covered by certificates of compliance with UNI EN ISO 9001:2015, UNI EN ISO 14001:2015 and UNI ISO 45001:2018 standards. It should be noted that Open Fiber's Health and Safety Management System covers all employees (according to the numerics reported in the GRI Disclosure 2-7) and all those who in any capacity collaborate with Open Fiber in achieving its objectives.

requirements and processes defined by the Management System itself.

The results achieved by Open Fiber within the Management System are shared annually with the Management Team (including CEO and Directors) during the management review, a process that verifies the consistency and effectiveness of the Management System itself and which, starting from the performances achieved in the current year, allows for the planning and implementation of actions for continuous improvement.

1.6.2 Customer Satisfaction, Health and Safety and Environmental Protection: an ongoing commitment

The attention that Open Fiber pays to the satisfaction of its stakeholders, to the Health and Safety of its employees and all collaborators, but also the ongoing investment in environmentally sustainable technologies and the promotion of an infrastructure that is, by its very nature, efficient and green, show both the care that the company has for its staff and its respect for the environment and the territory in which it operates.

The Quality, Occupational Health & Safety and Environmental Policy is the Company's formal commitment to build relationships of mutual trust with its Customers, to guarantee safe working conditions, to promote and develop sustainability initiatives and projects, and to protect the environment in the performance of the Company's activities, preventing pollution, supporting the conservation of natural resources and identifying actions aimed at increasing efficiency in their use and reducing their consumption, in order to prevent or mitigate negative environmental impacts.

Open Fiber has turned this commitment into a series of objectives aimed at ensuring the quality of services offered, reducing the environmental impact of its activities and preventing situations that pose a risk to the Health and Safety of workers, such as:

- Promoting the application of the Management System for Quality, Health and Safety and Environmental Protection in line with international standards.
- Pursuing continuous improvement by annually defining clear and measurable objectives and targets, verifying results and identifying improvement actions, and promoting the monitoring of the degree of satisfaction of end-users and partner operators.
- Building a relationship of mutual trust with end users and partner operators, offering high value-added services and ensuring the reliability of its network.
- Ensuring safe and healthy working conditions in order to prevent and minimise the causes of possible accidents, injuries and occupational illnesses.
- Implementing all actions to identify hazards, assess related risks and take all necessary steps to eliminate them, and where this is not possible reduce them by setting objectives and defining plans and programmes for continuous improvement, periodically verifying the results achieved and making appropriate adjustments where necessary.
- Adopting a rationally distributed accountability model, equipping Open Fiber management with the tools needed for timely, efficient QHSE intervention.
- Ensuring the maximum safety of its workers and any other person present in Open Fiber's workplaces and throughout the Company's entire production cycle, giving priority to collective protection measures over individual protection measures.
- Ensuring compliance with applicable laws, regulations and internal procedures, which are periodically checked, updated and adapted.
- Promoting and developing sustainability initiatives and HSE projects for both

inside and outside the company. Considering the environment in the performance of company activities, preventing pollution, supporting the conservation of natural resources and identifying actions aimed at making their use more efficient and reducing their consumption, in order to prevent and/or mitigate negative environmental impacts.

- Ensuring that within their roles and responsibilities all addressees are informed and trained to operate with full awareness of the potential risks associated with their work, both in ordinary and emergency conditions, ensuring their control through specially designed plans and in coordination with the competent authorities.
- Disseminating and consolidating the culture of Quality, Health and Safety at Work and Environmental Protection by promoting the involvement, participation and consultation of workers, including through their representatives, as well as of other interested parties when appropriate.
- Defining and controlling, through specific evaluation criteria, the performance of suppliers of products and services and involving them in the achievement of the objectives set by the Company.
- Ensuring cooperation and transparency with authorities, institutions and associations so as to ensure the maximum contribution in terms of commitment and responsibility.

Such a Policy defines the values to which the Company, its workers, collaborators and all those who, for any reason, on a continuous or occasional basis, work for Open Fiber, must conform in order to ensure the achievement of corporate objectives, conditions of Occupational Health and Safety and Environmental Protection considered appropriate and consistent with a responsible and sustainable growth of the Company.

1.6.3 Control activities

In addition to the Vendor Rating system[28], with which performance related to the services received from its contractors is periodically monitored and measured, Open Fiber, in line with the framework adopted for Risk Management, performs checks on the performances – in terms of products, services or work carried out – provided by companies in compliance with the terms of their procurement contracts.

The conformity of the installations to the Technical Standards and compliance with the Open Fiber processes are verified through three levels of checks:

- **Compliance inspections:** these checks, carried out by the Field Manager on behalf of the Regional Manager, verify compliance with contractual obligations and/or those falling within the area of responsibility according to the law within the sites for the implementation of the network; in 2022, more than 3,000 assessments were carried out by Open Fiber Field Managers, of which more than 1,600 inspections were carried out at the sites and more than 1,300 assessments were made on the professionals appointed to supervise the sites.
- **Operational inspections:** these monitoring operations and the procedural measures for carrying out compliance inspections; they are carried out by the Network Creation – HSE&Q function of the Network & Operations Department, as part of the network implementation activities, also through external specialised companies; in 2022, more than 1,300 inspections were carried out, including about 500 visits to sites and more than about 800 checks on the work of the professionals appointed to supervise the sites in relation to compliance with the respective service contracts.
- **Management system audits:** these audits, carried out by the Security, QHSE,

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28 For a description of the Vendor Rating process, please refer to the paragraph 1.4.4 "Empowering the supply chain".

Energy Management & Sustainability Function of the Personnel, Organisation and Services Department, both through internal staff and specialised external personnel, verify compliance with the company's Management System and its proper implementation in activities and processes, in accordance with UNI EN ISO 9001, UNI ISO 45001 and UNI EN ISO 14001 standards. During 2022, 55 QHSE Integrated Internal Audits were carried out throughout Italy, as part of the activities carried out at Network Creation sites, technological sites, for Delivery & Assurance operations and at company headquarters. The audit outcomes confirmed the effectiveness and efficiency of the QHSE Management System.

Furthermore, for the purposes of verifying the conformity of Open Fiber's working environments, during 2022 the Prevention and Protection Service carried out 20 inspections at the Company's premises and technological sites located throughout the country.
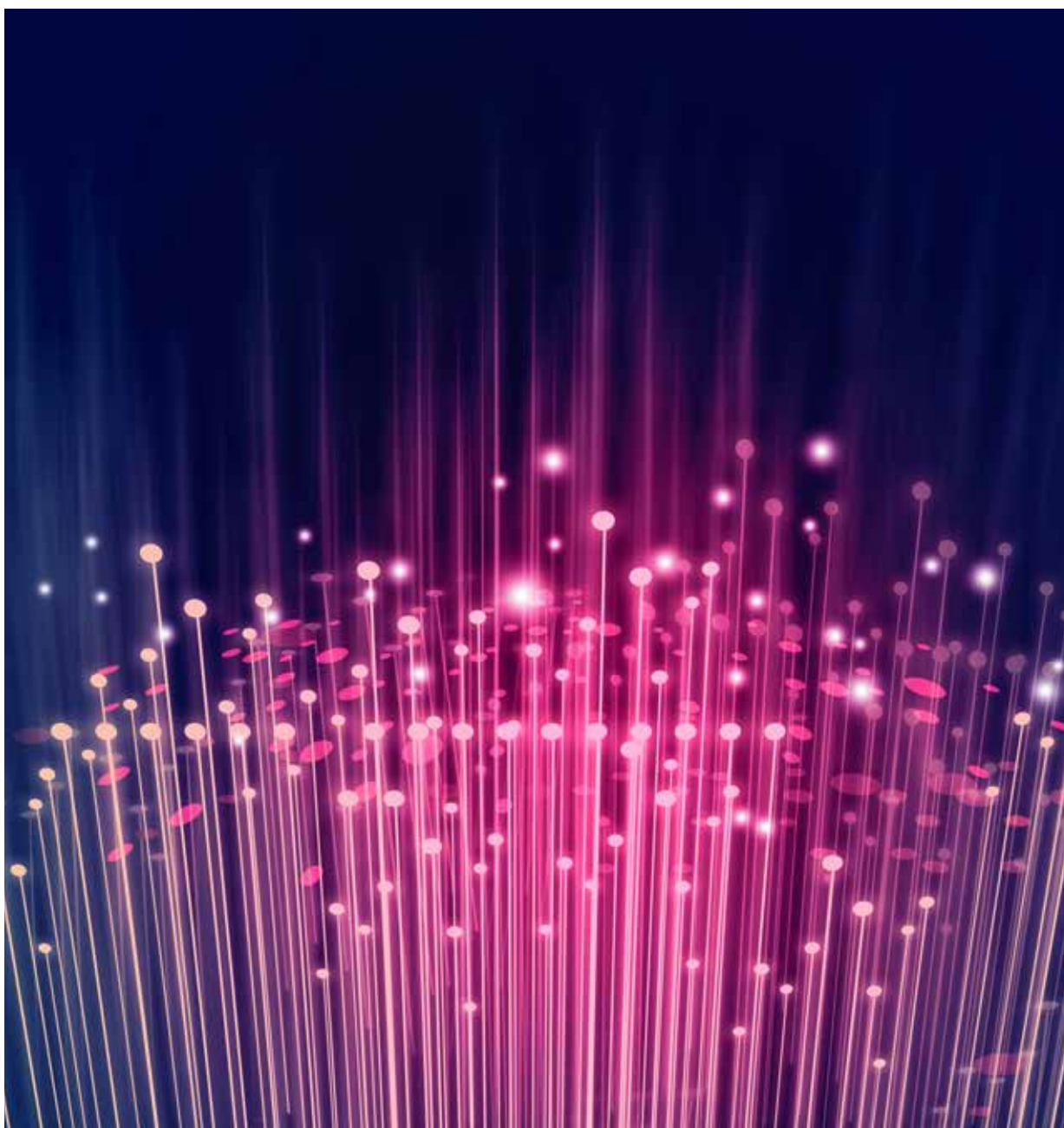
1.7 INFORMATION SECURITY AND BUSINESS CONTINUITY

1.7.1 Information Security Management System and Business Continuity Plan

In full respect of its corporate values, confirmed by the high quality and extreme efficiency of its infrastructure and a constant commitment to innovation and the creation of shared value, Open Fiber is committed to maintaining a mature and highly stable position to safeguard its customers, its employees and contractors and all stakeholders, through the implementation of an Integrated Management System for Information Security and Business Continuity. The Management System – modelled on the standards ISO 27001 Information Security Management Systems and ISO 22301 Business Continuity Management Systems – is designed to ensure continuous improvement and the achievement of the objectives stated in specific company policies and the Code of Ethics. To this end, Open Fiber has built a solid system for preventing, monitoring and responding to incidents using procedural and technological countermeasures and with constant supervision by personnel dedicated to safeguarding the confidentiality, integrity and availability of information. The goal is also to reduce the risks associated with potential threats to business continuity and to protect the organisation against cyber attacks.

In 2022 Open Fiber ordered third-party audits to verify the compliance of its Integrated Management System with the requirements of the relevant ISO standards and current regulations.

Open Fiber has voluntarily chosen to adopt an Integrated Management System, further confirmation of the company's strategy to

manage related risks in a structured manner, in keeping with the following objectives:

- Ensure the levels of service availability established in the contractual agreements with customers.
- Offer availability of resources to support the infrastructure.
- Ensure the availability and security of personnel required for the delivery of mission critical business processes.
- Ensure compliance with mandatory and regulatory requirements applicable both to the context Open Fiber operates in, and in particular to the services provided.
- Ensure compliance with the contractual requirements and constraints governing the services.
- Meet the needs and expectations of stakeholders, both internal and external.

Each year, based on the company's priorities, a plan is defined for verifying security levels of specific targets using Ethical Hacking, Vulnerability Assessment and Penetration Testing (identification of vulnerabilities) or on a broader scale with Adversary Simulation (simulation of a cyber attack with the objective of verifying the countermeasures in place and the ability to react to threats).

1.7.2 Business Continuity Plan

Open Fiber has drawn up and periodically updates and tests a Business Continuity Plan with which it has defined the strategies and recovery actions to be implemented in the event of a critical event involving an interruption of key processes, in order to guarantee the provision of key services to its customers.

The plan not only defines roles and responsibilities in the implementation of

restoration operations, but also outlines the strategies in action sheets, divided into five areas according to the type of unavailability, namely:
- Internal staff
- Suppliers
- Basic infrastructure

- Information technology
- Building

These strategies are periodically reviewed and updated following the implementation of new processes and supporting technological solutions.

CYBER SECURITY AWARENESS

In 2022 the Company continued its commitment to awareness-raising and generally spreading the culture of cyber security, involving personnel in various initiatives aimed at recognising and managing cyber security threats and risks and offering training/checking the learning of implemented procedures, including:

- Basic employee awareness courses.
- Publication of Cyber bulletins with the aim of raising awareness of cyber security issues among Open Fiber employees.
- Emergency card simulations, i.e. exercises involving the participants in unavailability events to find the most appropriate management and response strategies.
- Campaigns against phishing and its variants, with the aim of assessing the level of awareness against phishing scenarios and educating possible victims to detect future attacks.
- Action Learning & Gamification initiatives with an approach based on the interactivity of gaming in order to stimulate a high level of awareness on the part of the personnel involved.

X-IRT

Since 2021, Open Fiber has been continuously improving its services for event monitoring, vulnerability identification, threat intelligence, increasingly fast incident response and management, and root cause investigation through its **'X-IRT' Security Operation Centre**, equipped with 24-hour security operations platforms and specialised personnel.

2.0 OPEN FIBER: AN INNOVATION-ORIENTED BUSINESS

2.1 THE ITALIAN AND EUROPEAN DIGITAL SCENARIO

The UN Human Rights Council has defined internet access as "one of the fundamental human rights in the modern age"[29]. The inability to connect to the internet therefore corresponds to exclusion from work and social opportunities, as well as a limitation of freedom of expression online. In Italy, too, the need for access to high-speed communication networks has become a priority of the legislature, which, starting with the Fiber Decree, recognises to every manager and operator 'the right to offer access to its physical infrastructure for the purposes of installing elements of high-speed electronic communication networks', subject to the principles of transparency, non-discrimination, fairness and reasonableness.

To date, there is still an inequality across Europe and the country between those who can easily access connectivity services and those who cannot: this is known as the **digital divide**. The causes of the digital divide include the lack of infrastructure for accessing the web, the unavailability of the necessary tools for connection, unfamiliarity with new technologies, but also the lack of basic digital skills (cultural digital divide).

Open Fiber is committed to guaranteeing this right to more and more people, contributing to the reduction of the digital divide at a national level, through its corporate strategy pursuing the objectives of reducing the infrastructural gap existing in some areas of the country with respect to others and bridging social and geographic inequalities in favour of greater human and territorial cohesion, positioning Italy among the most technologically advanced countries in Europe. These objectives are in line with the digital transformation goals indicated by the European Union and promoted by the Italian government.

In fact, the strategy implemented by the Company fits perfectly into the design of the 'Communication on the Digital Decade' presented by the European Commission, also known as the **Digital Compass**. The document sets out the vision, goals and ways in which Europe will achieve digital transformation by 2030. The four cardinal points of the Digital Compass are: citizens with adequate digital skills; secure, efficient and sustainable digital infrastructure; digital transformation of businesses; digitisation of public services. It is an ambitious plan that paves the way for the implementation of programmes relevant to a multi-country vision, such as **NextGenerationEU**, an €800 billion-plus programme designed to promote economic recovery and mitigate the immediate economic and social damage caused by the Coronavirus pandemic that also affected the old continent from 2020. The European Council and the European Commission have committed to structure the support to recovery according to the dual transition towards a resilient but also climate neutral digital transformation, with the aim of achieving a greener, digital, healthy, strong and fairer future.

As part of this programme, Italy presented the **National Recovery and Resilience Plan (PNRR)**, with a total value of approximately **€191.5 billion**, to be deployed in the period 2021-2026, of which €68.9 billion are non-repayable grants. The first mission of the plan is 'Digitisation, Innovation, Competitiveness, Culture and Tourism', aimed at promoting and supporting the digital transition in the Italian territory both in the private sector and in the Public Administration. Among the main actions indicated in the mission are the deployment of Ultra Broadband and fast connections throughout the country, incentives for digital transition and the

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29 Resolution adopted on Thursday, 5 July 2012 by the UN Human Rights Council.

adoption of innovative technologies and digital skills by the private sector, the digitisation of the public administration and the strengthening of digital skills.

21% of PNRR funds (around €41 billion) are allocated to digital transition and innovation. The reforms and investments that contribute to this objective concern the digital transformation of the Public Administration and the judicial system, the strengthening of the healthcare system through digital technologies, the modernisation of businesses through the spread of advanced technologies (Industry 4.0) and the spread of Gigabit connectivity throughout the country, also to support tourism and culture 4.0.

The PNRR also tackles the development of digital literacy (according to the European Commission, by 2025 at least 70% of EU citizens in the 16-74 age group should have basic digital skills), with measures aimed at improving the population's basic skills, boosting training in advanced digital skills, providing new platforms or upgrading existing ones, retraining the workforce and improving their skills by building on successful regional experiences.

The Italian and European digital scenario is monitored through the annual study for the definition of the Digital Economy and Society Index (DESI), thanks to which the European Commission monitors the progress of Member States in the digital sector, and which ranks Italy in 18th place in 2022, up from the previous year (when it ranked 20th).

The report points out that this advancement is due to the progress made by Italy in terms of broadband coverage and network deployment. Italy is therefore closing the gap with the European average in digital skills. In fact, the DESI 2022 index reports that 46% of people possess at least basic digital skills, up from 42% in the previous year. However, Italy is still far from the European average of 54%, down from the previous year when it was 56%. This is probably also due to the country's poor digital culture which, although it has increased (from 36% to 40%) compared to last year, still has a percentage of online users who use Public Administration services (e-government) that is well below the EU average (about 65%). On the other hand, a lack of knowledge of digital technologies also characterises those working in the public sector.

"ITALIA A 1 GIGA" PLAN

Within the framework of Mission 1 of the PNRR, Open Fiber participated in the "Italia a 1 Giga" Plan call for tenders, an approximately €3.8 billion plan to bring fast internet to around 7 million addresses throughout the country. The aim of the Plan is to promote public investments in ultra-wideband networks that will enable all users to be guaranteed a connection speed in line with European Gigabit society and Digital Compass objectives, seeking to reduce the digital divide in our country.

At the end of the first half of 2022, Open Fiber was allocated 8 lots (geographic areas) under the Plan.

Open Fiber's contribution is therefore crucial to support the achievement of the objectives related to the digital transition envisaged by the European Union with the Digital Strategy and the Digital Compass and by the Italian Government with the

PNRR. These objectives, indeed, cannot be achieved without the Fiber To The Home (FTTH) technology and the ultra-wideband network that the Company is installing throughout Italy.

2.2 REPERCUSSIONS OF THE RUSSIA-UKRAINE CONFLICT ON THE DOMESTIC MARKET

In 2022 the Italian economy was affected by the geopolitical repercussions of the conflict between Russia and Ukraine, which impacted several sectors, including the digital sector that Open Fiber operates in. Among the main effects recorded were a demand for more IT security, an increased focus on energy efficiency and an impact on supply chains.

The topic of **cybersecurity** has become even more discussed in wake of the Russian-Ukrainian conflict, which could lead to negative effects such as an increase in hacker attacks or, in a worst-case scenario, a cybersecurity crisis. The Agency for National Cybersecurity (ACN, CSIRT Italy) issued a security bulletin in response to the geopolitical situation, recommending that individual users and especially digital infrastructure operators adopt state-of-the-art cyber defence measures. With regard to this issue, Open Fiber continuously invests in improving its integrated management system for information security and business continuity, drawing inspiration from the best international standards.

Moreover, the Russia-Ukraine war has highlighted Italy's energy dependence on fossil fuel supplies from abroad,

especially Russia. Therefore, a sudden revision of our country's energy policy became necessary, the main objective being making Italy independent of Russian gas. Emblematic in this regard is the renaming of the Ministry of Ecological Transition to the Ministry of Environment and Energy Security (MASE) at the end of 2022, underlining the urgency of the energy issue. In order to mitigate its environmental impact and actively contribute to the achievement of the Sustainable Development Goals, Open Fiber had already included in its strategy the promotion and implementation of energy efficiency measures and procurement from renewable sources. These initiatives proved to be even more relevant in the current geopolitical context.

Finally, the current geopolitical situation has had repercussions on the supply chain of both national and European companies, especially in terms of difficulties in the availability of raw materials, increased delivery times and higher purchase prices. In this scenario of uncertainty, Open Fiber managed to guarantee the continuity of its supply chain for the laying of the network and service to its customers, demonstrating the solidity of its business model.

2.3 BUSINESS MODEL

2.3.1 Wholesale: business model innovation

By choosing the **wholesale-only** business model, Open Fiber acts as a **pure, neutral and not vertically integrated infrastructure operator**, with no retail business units and consequently completely focused on the development of an increasingly high-performance network to offer to other telecommunications operators, who are all partners of Open Fiber and not competitors.

The TLC operators concerned thus have access to an optical fiber network infrastructure on an equal and non-discriminatory basis. This business model also benefits end-users, who have greater freedom to choose their favourite provider and services.

This model has been regulated by the European Union through the European Electronic Communications Code, which is aimed at the development of "pure" infrastructure operators, i.e., those dedicated to the development of networks to which all interested service operators have access on equal terms.

The advantages that make the wholesale only model the reference model for the development of ultra-wideband infrastructures with FTTH technology in Italy and Europe, capable of maximising the development and growth of the digital economy, for all intents and purposes are the main elements that characterise and distinguish it:

- **Neutrality and openness,** which contribute to the development of an inclusive and competitive market where operators selling FTTH services to the end customer have equal access rights

to the network. This is to the advantage of end users, who can choose the service they prefer and benefit from lower average costs.
- **Long-term vision,** deriving from the fact that the infrastructure operator can focus solely on the development and continuous improvement of the infrastructure.
- **Innovation,** because the absence of a legacy network makes it possible to use the best technologies available on the market and maximise the operational performance of the network, creating the conditions for both more pervasive digitisation and greater competitiveness of the economy.

The European Commission believes that ultra-wideband connectivity is key to maximising the growth potential of the digital economy and has set interesting connectivity targets to be achieved by 2025. The aim is to lead Europe towards the so-called Gigabit Society, or an interconnected society. Currently FTTH is the only technology that can guarantee a **symmetrical** speed of at least 1 Gbps. The latter two factors are often overlooked, but are essential for the perceived speed of the connection and essential in many increasingly popular interactive applications such as gaming, training, telepresence, e-health and many others.

Open Fiber has installed most FTTH accesses in Italy and supported the spread of fiber in houses, companies, Public Administration and schools, connecting **15.5 million real estate units** in December 2022. Open Fiber's business plan has been further extended and enhanced, and now envisages connecting more than 20 million real estate units divided into the so-called black, white and grey area Clusters.

In 2022, Open Fiber's market has further widened and now around 300 operators (OLO – Other Licensed Operators) are Open Fiber **Customers**, operating in the consumer and business segments. Among the operators, there are companies of very different size and type, such as: Large Operators, Business Telco Operators, Fixed Virtual Network Operators, TowerCo, International Operators, Cloud Service Operators.

2.3.2 Open Fiber Services

The Open Fiber product portfolio consists of connectivity services that favour the digitisation of families, businesses, schools, and the Public Administration. The offer is characterised in terms of quality, reliability but also product flexibility: the portfolio is simple and modular and allows choosing between **"Pure Infrastructure"**

and **"Network as a Service"** offers. This approach allows both large operators and all players and newcomers, without their own infrastructure and equipment, to be able to access the services provided by Open Fiber.

The services offered by Open Fiber are divided into two categories: passive services and active services. In the case of **passive services**, Open Fiber makes available its own fiber access infrastructure connecting the technological site (i.e. the infrastructure node hosting the fixed access network elements and the transport/backhauling elements) to the end Customers' premises, while the Operator is responsible for connectivity in PON (Passive Optic Network) or P2P (Point-to-Point) access technology. This option is generally used by large operators who manage the active part themselves by installing their equipment within Open Fiber sites.

INNOVATIVE APPROACHES IN THE WHOLESALE MODEL

Open Fiber, during 2022, continued some initiatives to increase the spread (through its partner telecommunication operators) of its services as a competitive tool for Italian companies operating in strategic sectors (e.g. Fintech). In this context, Open Fiber wants to build, together with the OLOs, an offer capacity that combines connections based on Open Fiber's exclusively fiber-based high-performance network with the offer of applications that can take advantage of it as an element of differentiation (speed, low latency, throughput, security, service continuity, energy savings). The service platform thus constituted by Application/Service Provider, OLO operator and Open Fiber becomes a bundle and the connected services can be offered in a Powered By logic.

As part of the **Open Fiber Innovation Lab**, a pioneering experiment was launched by Open Fiber in partnership with a number of consulting firms that support companies in their strategic orientation and innovation. The Experiment consists in the identification of some interesting pilots in which Open Fiber makes its technical resources and capabilities available in a neutral way and the operators can offer companies the possibility to try the bundle that creates super-performing applications. If the trial proves to be strategic for the customer it can be proposed commercially in agreement with the OLO and appropriately branded, so that operators can expand their offer with services of greater added value for their customers: the end customer will be able to take advantage of innovative features thanks to the advantage brought by Open Fiber's fiber network which guarantees high reliability and high performance.

In order to provide the service, it is necessary for the Operator to subscribe to the Housing service, whereby it is granted a space on which to install its transmission equipment and connect it to the fiber network in order to provide the service to end customers.

Active services, on the other hand, require Open Fiber to provide not only the fiber infrastructure, but also connectivity in GPON (Gigabit Passive Optical Network[30]), XGS-PON[31] and P2P (Point-to-Point) access technology with traffic delivery

Network as a Service approach

Pure Infrastructure

Layer 3 (active) Services — **Internet Access** — Players without own infrastructure: newcomers, international, etc.

Layer 2 (active) Services — **Trasmission Services** — Operators with infrastructure and special projects (e.g. video contribution)

Active Services — Medium Operators or Locals

Layer 1 (active) Services — **Passive Services** — Big Operators

OTT
UTILITY
TOWERCO
TELCO

PASSIVE GPON FTTH

DARK FIBER

HOUSING

OPEN INTERNET

ACTIVE GPON FTTH

ACTIVE P2P

OTN

30 Gigabit Passive Optical Network: network in which part of the connection is shared between operators, while the final connection is based on a single dedicated fiber. The passive nature of GPON eliminates the use of electricity, making it possible to install splitters in places where it is not easy to have power. In addition, it is more energy efficient. GPON technology provides unprecedented bandwidth (up to 2.5 Gbps speed) and greater distance from the switch, allowing service providers to enable bandwidth-intensive applications.

31 XGS-PON technology (standard ITU-T 9807.1 – 2016) is the commercial successor of GPON. It allows a transmission speed of 10 Gbps both downstream and upstream.

and, in some cases, direct internet access. This type of service requires operators' traffic to be collected by Open Fiber and subsequently delivered to the operator at an interconnection point in an aggregate manner, through its national backbone, at its regional or national technological sites. The active services offered are incremental and may also include an all-inclusive service with direct Open Internet access. This type of service is aimed above all at small operators and multi-utilities, who, not having their own infrastructure, can still provide high quality fiber connectivity services without the need to invest in network equipment and infrastructure. This has allowed the birth of new service providers who have added telecommunication services to complement their core business (for example operators in the energy and utilities sector).

This range of modular services allows access to the optical fiber network for all operators, who can take advantage of the infrastructure and services offered by Open Fiber according to their needs, potential and investment opportunities. All this produces a significant benefit for the market and for consumers who see the range of services available expand with an ever-higher quality.

At the end of 2022, around 300 operators in telecommunications (Fastweb, Tiscali, Vodafone, WindTre, EOLO, AT&T, Retelite, Illiad, Virgin Fibra, PostePay, Aruba), entertainment (SKY), energy and e-learning sectors, have chosen Open Fiber as their main infrastructure and service provider. The expansion of the offer is functional to the acceleration of the Country's digitalisation process with

PASSIVE SERVICES

Passive GPON FTTH: shared passive GPON (Gigabit Passive Optical Network) FTTH connection. A technology with point-to-multipoint architecture that allows the multiplexing of the traffic of multiple users of a single tree on the same physical interface (GPON port).

Dark Fiber (dark fiber service): supply of a passive point-to-point (P2P) connection via a fiber or a dedicated pair of fibers, available both in Basic mode (i.e., from the Open Fiber technology site to the Customer's site) and in Premium mode (from the Client's office to other Client's offices). This is mainly used by large operators.

Housing: provision of a frame space within the Open Fiber technological site where the Operator installs its transmission equipment. The service also includes the supply of electricity, air conditioning, equipment maintenance, cleaning, security services and site surveillance.

ACTIVE SERVICES

Open Internet: "turnkey" service, connectivity and direct Internet access service offered through PON FTTH access technology, with speeds up to 10 Gbps in download and 2.5 Gbps in upload.

Open Stream FTTH: point-to-multipoint FTTH connectivity service using PON access technology with speeds of up to 10 Gbps downstream and 2.5 Gbps upstream to allow transport and delivery of operator traffic on an interface called Delivery Kit – unique and exclusively dedicated to the operator – within the technological sites.

Active P2P: the service provides a level 2 connectivity of up to 10 Giga between the Customer's office and the operator's interconnection point. Used for the binding of business offices, the backhauling of the operating nodes, as well as the offices of the central PA (Public Administration) and the local PA, using optical fiber bindings.

OTN: the termination apparatus of the optical fiber access network in the customer's premises. It is a device designed to convert the light signal from the optical fiber into electrical impulses that can be managed by any router or network access device.

2.3.3 Open Fiber Customers

Open Fiber has a natural customer focus: this can be seen in its Vision and Mission, but also in the nature of the services offered and the business model adopted. In fact, the company wants to actively contribute to a change in the lives of the public, improving the lives of people, families, businesses and workers by offering more services, more speed, more accessibility and more reliability through fiber optics.

Customer focus: the Customer Satisfaction Survey
Starting from 2021, with the aim of pursuing a continuous improvement of the activities and services offered, Open Fiber has adopted a **repeatable analysis model capable of analysing the components of the service that influence the satisfaction of customers** (Operators) to then measure and examine the data collected both at the customer portfolio level and at the individual customer level. The model, part of a Customer Satisfaction Survey, has an extensive and inferential character, which is therefore not limited to the analysis of how a phenomenon is distributed in the sample but questions the inferential link of the causal relationships that determine actions. In the designed model, the collection of information in the sample survey always takes place through the adoption of a questionnaire defined in standard form using standardised tools, procedures and rules, making it possible to compare information referable to different cases.

The main distinctive aspects of the survey model are:
- **Extensive character:** it is not limited to an analysis of how a phenomenon is distributed in the sample, but questions the inferential link of the causal relationships that determine actions.
- **Comparability and quality of data:** information is collected using

DATA TRAFFIC AND CLOUD ENVIRONMENTS

The traffic of data in the network is destined to increase significantly, therefore it is necessary to develop remote Cloud environments, in which applications can be used regardless of where the IT infrastructures reside.

An important part of this traffic is between the Data Centres distributed throughout the territory (DCtoDC – Data Centre to Data Centre). It is to meet this need that Open Fiber, in 2021, launched the xPoP Backbone, a digital highway that allows data to travel at maximum speed, with the lowest latency and safely between the main nerve centres of the Internet network in Italy. In essence, the xPoP Backbone is a higher-level network layer that directly connects all the major Data Centres, Neutral Access Points and international data traffic landing points (Cable Landing Stations) present in the country. Open Fiber customer operators, thanks to the **xPoP Backbone**, can obtain dedicated and diversified connections, with adequate connectivity so as to be able to offer their End customers reliable services that allow data to travel with maximum speed and lowest possible latency. Open Fiber uses the most recent optical transport technologies on the market and has already tested innovative solutions for transmission up to 800 Gbps on a single optical channel.

Another trend that is catching on in the advanced computing industry is **Edge Cloud Computing**, in which data processing takes place at points on the network closer to the end user, in order to offer shorter paths and lower latency times. Also in this case, the Open Fiber infrastructure has proved to be in step with the context, as in addition to already allowing the fiber connection of large data centres, it can host servers for Edge Cloud Computing in its PoPs.

standardised tools, procedures and rules, allowing the comparison of information referable to different cases.

- **Results in quantitative form:** through the statistical processing of the data, it is possible to produce a series of inferences based on the estimate in quantitative form.

The survey focused on **six areas of investigation:**

- **Services and offer:** the clarity of contractual documents, satisfaction with the portfolio of services offered and the value of connectivity in terms of customer loyalty.
- **Commercial:** support and clarity in the commercial contract phase, ease of use of the ARO portal and the saleability database.
- **Provisioning:** support and clarity in the service activation process and its progress, ease of use of the operator portal.
- **Assurance:** the speed of intervention with respect to reports or faults, as well as clarity of the contents of the operator portal.
- **Coverage:** the reach of the network in the operator's areas of interest in the two clusters Open Fiber operates in (A&B and C&D), the availability and clarity of systems for verifying network coverage.
- **Administration and finance:** the detail of the invoice, the clarity of the information it contains and the timing of receipt of accounting documents.

The last two survey areas (coverage and administration and finance) were introduced in the 2022 survey with the aim of extending the observation to the segment of OLOs buying B2B services.

In addition, in order to evaluate the work of Open Fiber, **qualitative aspects** transversal to the following areas of investigation were also analysed: **reliability, responsiveness, communication and sustainability**.

The questionnaire could be answered using a variety of devices (desktop, mobile, tablet) and was administered to a sample of consumer service operators and business service operators, chosen on the basis of significance and representativeness in terms of volume of connections.

In 2022, 246 representatives of 134 customers responded to the second **Customer Satisfaction Survey**. Compared to the sample identified, 85.27% of the operators to whom the survey was administered completed the questionnaire (of these, 49% belonging to the consumer segment, 10% to the business segment and 41% to the consumer & business segment).
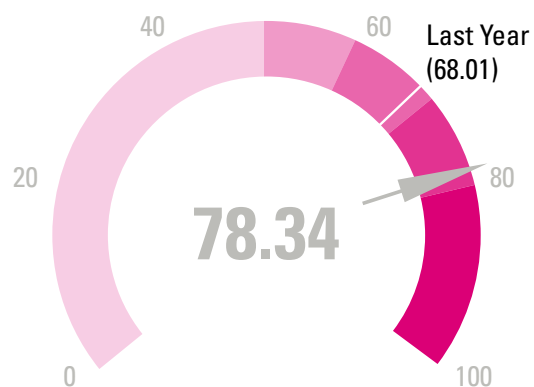
The analysis of the results shows that, for both the **survey areas** and the **qualitative aspects**, the scores obtained were on average high and showed a positive trend compared to the surveys carried out in 2021, showing an effectiveness of the improvement actions implemented in 2022 by Open Fiber (in response to the results obtained in the previous year).

Through the analysis of the so-called **Open Fiber Satisfaction Index** which represents a summary of all the answers given by all the operators, an improvement over the previous year and a strong recognition of the Open Fiber brand (identified as an ideal supplier) was found in the market of

fiber connections in Italy. Data on **brand awareness, reliability, sustainability and positive impacts towards the community** (e.g. bridging the digital divide, creating employment, etc.) are among those highlighted as positive factors.

2.4 OPEN FIBER: A MODERN INFRASTRUCTURE

Open Fiber's infrastructure consists of an ultra-wideband network based mainly on FTTH (Fiber To The Home) technology, which guarantees **fast, efficient and reliable** data transmission. Unlike copper networks, whose cables are affected by wear and tear, adverse weather conditions and long distances, the technology behind the optical fiber ensures optimal performance in all conditions. This advantage is made possible by the composition of the cables, which can maintain constant performance regardless of distances and external agents and allow the internal material to bend easily without breaking or damaging thanks to its extreme flexibility. In the most inaccessible areas, Open Fiber uses FWA (Fixed Wireless Access) technology.

OPTIC FIBER: AN ENVIRONMENTALLY SUSTAINABLE SOLUTION

One of the most interesting characteristics of fiber optics is its nature as an **environmentally** friendly technology. In fact, the material it is made of is generally synthesised from silicon and, unlike copper, does not require mining. The small size of the cables allows them to be laid using techniques that minimise excavation volumes and greenhouse gas emissions. In addition, all network elements are 'passive', i.e., they do not require a continuous supply of electricity, thus minimising energy consumption.

Another advantage of optical fiber is that it is **future-proof**, i.e. able to support the full potential of new technologies that will arrive in the years to come as it is designed not to become obsolete as technology advances, ensuring efficient performance even as bandwidth demand increases. Thanks to these qualities, fiber optics, particularly FTTH configuration, ensures faster Internet connections and extremely low latency times (in milliseconds), making it the ideal solution for those sending and receiving large amounts of data.

2.4.1 The characteristics of the infrastructure

The end-to-end process
The reliability of the Open Fiber network is the result not only of the fiber's intrinsic characteristics, but also of the management of an **end-to-end** process that begins with the planning of coverage throughout the country and the technological choices for network implementation (**Network Creation**[32]) and ends with the management of **Delivery** services (connection between real estate units and optical fiber network or FWA[33]) and **Assurance** services (maintenance and prevention of potential causes of damage to the network).

Open Fiber's oversight begins with the careful selection of raw materials and the contractors that carry out the activities through the initial qualification process[34],

32 For details regarding Network Creation, see paragraph 3.3 "Sustainable laying techniques".

33 Fixed Wireless Access.

34 For details on the qualification activities, see paragraph 1.4.4 "Empowering the supply chain" and the company website, in the dedicated section https://openfiber.it/fornitori/diventafornitore/.

and ends with the definition of rigorous contractual requirements, specific **Service Level Agreements** (SLAs) by type of intervention and the related penalties applicable in the event of non-compliance, as well as a performance monitoring system through checks and audits on the field and periodic assessments by means of a **Vendor Rating Index**, representing technical-economic, production, environmental and social performances.

In order to manage the Delivery & Assurance activities, Open Fiber engages specialised companies – hired through specific platforms through the opening

of **Work Orders** (WO) and **Trouble Tickets** (TT) – made up of qualified personnel, compliant with the principles of Occupational Health and Safety Protection and which guarantee the availability of equipment and tools, hardware and software, necessary for the perfect execution of the works. The quality of the service offered is also demonstrated by compliance with certain behavioural rules required of companies interacting with the Customer: punctuality, speed and professionalism in operations, cleanliness and good order, helpfulness and politeness towards the Customer, compliance with the principles of fairness

DIGITAL MONITORING IN THE NETWORK IMPLEMENTATION PROCESS

Open Fiber digitally monitors the progress of works on the network through checks on the network inventory information systems (Project +, Geo4WIP, GISFO etc.) used for network construction activities (pre-construction, construction and partial and final progress, pre-testing, testing and As Built). The companies are required to constantly update the information systems, providing all the documentation necessary for the traceability of the workmanlike execution of the works (material technical data sheets, photographic documentation of the work carried out, certifications relating to waste disposal).

DELIVERY & ASSURANCE ACTIVITIES

In order to offer to the Customer the best possible service, Open Fiber operates on two fronts through Delivery & Assurance activities. The **Delivery** service is responsible for connecting individual real estate units to the optical fiber network or FWA and carrying out, where necessary and authorised by Open Fiber, the essential operations to ensure the connection of the customer's real estate unit and the activation of the required services. The **Assurance** service covers all maintenance activities concerning the network and infrastructure, aimed at guaranteeing the maintenance of conditions of perfect efficiency of the technological services, continuity and consistency of the services provided by Open Fiber, preventing potential causes of damage.

Assurance activities include:

- Corrective maintenance on a Fee basis, such as maintenance interventions that can be carried out to ascertain and/or remedy a state of degradation/disruption/failure following or not a report by Open Fiber, interventions aimed at fixing an anomaly, also of an infrastructural kind, or scheduled interventions without redesigning the network.

- Corrective maintenance according to the Price List, such as interventions linked to events caused by, due to or in any case attributable to third parties, damage and/or inconvenience caused by force majeure events, or interventions on behalf of another operator on networks (infrastructure and optical cables) not owned/used by Open Fiber.

- Maintenance at the Customer Premises, i.e., the repair, qualification and replacement of devices (e.g., routers) and other equipment included in the operator's offer and on the network at the Customer's premises.

and maximum confidentiality, refusal of any form of compensation from the Customer for any work related to the installation.

Rigorous control of materials
In order to guarantee the maximum reliability and performance level of the network, all the main materials and components that make up the optical fiber network must comply with rigorous technical specifications defined by Open Fiber (for the A&B Cluster) or by the Licensor Infratel Italia (for the C&D Cluster).

The supplier must prove the materials' compliance with the technical specification in order to guarantee the Company products suitable for the quality standards set. Such compliance is certified by a third party certifying body approved by Open Fiber and all materials are subjected to tests carried out on production batches, on samples taken randomly from those batches. Furthermore, production procedures must allow for the complete traceability of each raw material involved in the process.

Open Fiber reserves the right to carry out additional checks, such as:
- Inspections aimed at ascertaining compliance with the contractual technical requirements relating to the supply of materials and the adequacy and correct application, in accordance with UNI EN ISO 9001, of the Quality Management System of the supplier and, possibly, of the sub-suppliers.
- Tests, off-line tests and compliance tests, as well as all necessary checks on the products and materials to be supplied, in order to ascertain their reliability as declared in the tender.

Moreover, in order to increase the company's green approach to the management of materials for the network, the following activities are being studied and scouted:

- Use of mini-tubes for the protection of fiber optic cables made of polyethylene derived at least 70% from recovered or recycled materials.
- Reducing the number of materials used for packaging and encouraging the use of only environmentally friendly and fully recyclable materials therein.

Network monitoring and oversight
An ambitious project like that of Open Fiber requires constant focus. As the ultra-broadband network takes shape, becoming ever larger and more complex, there is a need to manage it using cutting-edge technology and expertise.

The monitoring and oversight of the proper functioning of Open Fiber's Ultra Broadband infrastructure throughout the country is carried out by the **Service Operation Centre (SOC)**, operating 24 hours a day throughout the year, in order to safeguard not only the structure, but also the continuity and quality of the service offered to its Customers, guaranteeing promptness and speed of intervention at the first sign of malfunctioning. The SOC consists of more than 100 stations and is divided into the following 3 sectors:
- **The Service Desk,** which provides technical support via telecommunication operators when action is required to restore a service.
- **The Network Operation Centre,** which prevents or intervenes promptly in the event of problems, with the aim of eliminating or minimising the perceived disruption for the End Customers. This is an extremely precise system that allows the status of individual active fibers, equipment and systems to be monitored and faults to be identified in a timely manner.
- **Operational Engineering,** which is the technical authority within SOC and Open Fiber in general, supports the front-end structures in managing complex faults and ensures the training of teams in the

continuous technological evolution of the Open Fiber network.

Open Fiber uses two **methods** of identifying failures or faults: **reactive** and **proactive**. With the first method, the malfunction is reported by the partner operators who manage the Customers. Once the message has been received, Open Fiber locates the anomaly and takes action at the exact point where the fault is occurring. The proactive mode, on the other hand, is that of anticipating the notification. Technicians have created extremely advanced alarm systems, which are activated by sensors using the digital technology of the Internet of Things (IoT) embedded in the PoP (Point of Presence) and throughout the network. This allows providers to restore the service as soon as the anomaly is detected.

2.4.2 The process of building the infrastructure

Open Fiber's **creation process**, in the process of building the ultra-wideband optical fiber network infrastructure, begins with the signing of an agreement with the local administration concerned.[35] The agreement includes procedures, work schedules, technical and safety standards to reduce as far as possible the impact on the environmental, cultural and landscape heritage, as well as any inconvenience to citizens during works and excavation procedures for the laying of the optical fiber. Once all administrative permits and authorisations have been obtained, the activities that will bring the optical fiber to the real estate units continue:

1. **Assessment phase:** the process starts by gathering information to help define the project, such as the count of buildings to be cabled and the number of real estate units (REU) to be connected. Then, the possibility of laying the fiber using the existing infrastructure or through new

works is assessed. During this phase, called Walk Out, communication and authorisation[36] forms are issued, some of which are addressed to local authorities, to the building superintendent or to the owner of the individual house/business. Once the forms have been collected, the internal census is carried out by inspecting the buildings (Walk In phase).

2. **Design phase:** once data, information and documentation have been collected, a "Preliminary Project" is drawn up, in which the details of the activities are defined, in particular the works to be carried out, the type of work required for the laying (e.g., type of excavation), the sizing of the network elements, the positioning of the Secondary Flexibility Points street cabinet. During this phase, it is important to take into account the so-called PoPs (Points of Presence), the infrastructure nodes that house the fixed access network elements and the transport/backhauling elements. It is precisely these elements that aggregate and distribute the traffic on the network, whether it is access or delivery traffic: the objective is therefore to work out the most efficient configuration and way to position and connect them. Once the project is approved, it becomes feasible and the relevant offices are approached for authorisation.

3. **Building phase – Creation:** creation of the FTTH connection system, through which the PoP are built and connected to the real estate units via the optical fiber. The PoPs can be built indoors (inside existing buildings), outdoors (with the construction of prefabricated structures called shelters and/or cabins). During this phase, the fiber is laid to the ground, as well as the street cabinet and the Building Termination Point or Advanced Point in order to reach individual homes, offices, businesses, and the Public Administration. During the infrastructure laying phase, Open Fiber prefers the methods that have the least impact not

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35 For more details see paragraph 4.1.3 "Relations with local bodies and authorities in permitting".

36 For example: notice of commencement of works, authorisation to install and operate the FTTH optical fiber network built in the municipality, authorisation of access to the building.

only on the environment, but also on the community in terms of inconveniences caused by the presence of the worksite[37]. Once the points of interest have been connected, the sections are tested.

4. **Recovery phase:** once the infrastructure has been built and tested, the next step is to restore the road surface, an activity that is carried out with the minimum of inconvenience to citizens, trying to be less invasive on the territory, including the environment. Open Fiber will be responsible for all the work, which means that no expense will be charged to the municipal authorities, and there will be a series of well-defined steps:
   - one step that is temporary, which follows the excavation work, and has a laying time of at least 30 days. This is a necessary process for the soil to settle and is characterised by cement mortar strips;
   - once the necessary technical time has elapsed for the soil to settle, the second phase, the final recovery, will be carried out, consisting in cutting a portion of the carriageway and paving the road.

5. **Service activation phase:** for service activation, the end customer – depending on the city in which it is located – must apply directly to the operator most suited to its needs and choose from the various offers available, operators withwhom Open Fiber closes commercial agreements aimed at providing the service to the customer. Once the contract has been signed with the operator, the latter will contact Open Fiber to begin the final phase of installation.

6. **Installation phase:** during the last phase of the process, Open Fiber receives an "Activation Request" from an operator with all the customer's information, reserves the network resources and contacts the Customer, setting the date and time of the intervention at the user's home. The intervention lasts about 2-3 hours and includes the laying of the optical box and the testing of the connection using test equipment, with the support of the Open Fiber SOC (Services Operations Centre)[38].

37 For more details see paragraph 3.3 "Sustainable laying techniques".
38 For more details, please see the paragraph 2.4 "Open Fiber: a modern infrastructure".

2.5 INNOVATION AS A KEY ELEMENT FOR ADVANCED CONNECTIVITY AND THE DEVELOPMENT OF NEW SERVICES

Innovation is a fundamental element of Open Fiber's business: the FTTH fiber made available by the company represents a highly revolutionary product compared to the standard set by other companies in the sector in the past. The subject of innovation affects company operations in many ways. Open Fiber constantly pursues innovation, both in terms of continuous improvement of its core services and in the constant search for new proposals and new connections between its services and other market sectors. With this aim, Open Fiber launched the **Open Factory**: an actual laboratory created to test new technologies and potential new services to be offered to customers. Furthermore, in recent years through its **Innovation Lab** the company has set up numerous partnerships with research institutes and other companies aimed at researching and developing new solutions.

2.5.1 Open Factory

Open Factory is Open Fiber's testing lab launched in 2019, within which the most innovative technologies for the FTTH network are experimented and tested, offering advanced connectivity solutions to Operators (OLOs) for both household and business use.

Equipped with all the equipment and tools needed to test new technological solutions and services to be released in the field, the laboratory is used to create a place that guarantees a fast and accurate service innovation process. For this reason, Open Factory can be associated with a real sandbox, within which a dynamic and productive working environment has been created.

The functional and modern facility consists of a control room, equipped with dedicated workstations for Open Fiber and/or external personnel, and an equipment room, equipped with all network elements and testing equipment.

Within the Open Factory, study and experimentation are carried out continuously. Verification and Validation tests (Prove di Verifica e Validazione, PVV), Proof of Concept (PoC) of new network functions and performance, demos of innovative services, and development of know-how on new technologies are just some of the activities carried out within the Open Factory. Tests are carried out using automation tools and a high-precision robotic optical matrix, which ensure a fast and automated configuration of the testing environment, facilitating the transition from one testing scenario to another.

At the same time, the companies operating and supplying equipment for Open Factory are located in Italy, make use of highly specialised technological solutions and are oriented towards optimising and reducing consumption and the carbon footprint. With this in mind, they reduce the production of paper documentation through the intensive use of digital documents, favour the use of low-impact means of transport such as rail, recycle the packaging of all the material they handle, and seek to adopt best practices from international partners in order to reduce emissions.

The advantages of this environment and the benefits experienced are numerous:
- Acceleration of the process of service and network innovation.
- Increased stability of services and reduction of costs (for testing, analysis

and SW corrections) as it is possible to easily switch from one testing scenario to another working in parallel and minimising human intervention for routine activities.
- Fast release of new Services (time-to-market reduction).

It is therefore a true "factory of ideas", a place where it is possible to experiment and test the most innovative technologies for the FTTH network, making it possible to take measures aimed at minimising the impact on the environment and the territory in the business value chain.

In 2022 several innovative activities were carried out in Open Factory, the main ones being:
- **8K video:** thanks to the collaboration with partners operating in the broadcasting and multimedia sector in the ultra-wide band area, a trial of 8K video transmission on the IP network was launched using Open Fiber's FTTH optical fiber network. Indeed, according to forecasts and trends in the video marketing sector, the growth of these technologies will be exponential in the coming years, offering the possibility to display images with UHD[39] (4K) and UHDTV[40] (8K) resolution.
- **Outdoor testing:** an outdoor test environment was set up to simulate a real radio environment with outdoor environmental conditions that cannot be reproduced with indoor connections. This simulation makes it possible to test solutions using FWA (Fixed Wireless Access) technology to provide operators with point-to-multipoint wireless connectivity.
- **10G-PON (XGS-PON):** the evolution of the GPON system was tested; it allows the bandwidth available on the FTTH access network to be increased to 10 Gbps, both downstream and upstream.
- **25G-PON:** 25G-PON technology was tested. In addition to increasing the

capacity of the access network beyond 10 Gb/s, this technology is designed for fixed-mobile convergence for x-Haul (Fronthaul, Midhaul and Backhaul) support of 5G networks. This technology allows the overall capacity of the PON system to be increased to 25 Gbps with a symmetrical downlink/uplink speed.
- **50G-PON:** Open Fiber is among the first companies in Italy to have tested the new **50G-PON** (50 Giga) broadband access service in a controlled environment, with which speeds of up to 50 Gbps (500 times 100 Mbps) can be achieved on the access network. Test results show the great potential of this technological upgrade in terms of bandwidth and latency times of a few tens of microseconds. These characteristics will be crucial in order to continue to meet users' needs in terms of quality of experience and speed, which are growing steadily and rapidly. In fact, the 2022 AGCOM report[41] shows that the average monthly traffic per user on the fixed network increased by 87% compared to 2019. Moreover, this new technological frontier will open up a number of new service scenarios and will be instrumental in the binding of the access network elements of 5G mobile networks. Next-generation mobile networks need densification of the transmitting antennas (microcells) and a large transmission capacity of the networks themselves. Thanks to 50G-PON technology and the ubiquity of the PON network, the FTTH access network becomes a platform for fixed-mobile convergence, becoming an important enabler for new applications that will travel over the 5G network, from home automation to assisted driving, from Metaverse to AI. The trial also demonstrated the possibility of running the new 50 Giga service in parallel with the services already offered by the company (XGS-PON, i.e. 10Gb) without interference.

39 Ultra high definition.
40 Ultra high definition television.
41 Communications regulatory authority.

2.5.2 Virtual Server Farm

The **Virtual Server Farm** consists of a set of servers within a dedicated area, connected together in a network in order to provide different IT services and offer the possibility of data backup and disaster recovery. Open Fiber chose a virtual greenfield solution for the creation of its **Virtual Server Farm**, leveraging the advantage of being a young, innovation-driven company.

In the Open Fiber Virtual Server Farm, to date, most of the critical control platforms operate on a virtual platform; for example, the fiber status control systems, the equipment fault management systems, the DNS (Domain Name System) and the end-user authentication system, as well as the network management and control platform, have all been made virtual.

The main advantages of the virtual solution are:
- Reduction in capital and operating costs.
- Savings in terms of physical space and power consumption (server power and cooling systems).
- Downtime reduction or elimination.
- Higher levels of business continuity and disaster recovery.
- Simplified management of the data centre.
- Acceleration of applications and resources provisioning.

2.5.3 Innovation Lab

Open Fiber has given impetus to a widespread innovation lab called **Open Fiber Innovation Lab (OFIL)** which supports and promotes the use of Open Fiber services in competitive sectors (starting with Finance/Fintech and then spreading to the context of Industry 4.0) through the development of concrete cases aimed at the market of Italian companies with high innovation potential. The Open Fiber Innovation Lab has also launched collaborations with the world of research with the aim of experimenting, with selected high-level and visible universities, concrete forms of collaboration on topics of interest in the mid-term, so as to position Open Fiber as a key player in the ecosystem of Italian research and innovation. OFIL places at the centre of its mission the transformation of Open Fiber into a Data-Centric organisation, capable of using data to make strategic decisions.

Application of Artificial Intelligence technologies
The **Tiresia Project** is the first example of Open Fiber's transformation into a data-driven company, using data science techniques based on Artificial Intelligence (AI) to extract useful information for complex decisions from available data.

Tiresia is a decision-support system that uses machine learning techniques to make short- to medium-term forecasts, entirely designed and implemented specifically for Open Fiber requirements. The platform was developed by the company **Svelto!**, a spin-off of the University of Basilicata. In the course of 2022, Tiresia was upgraded in order to use its output as a contribution in Open Fiber's response to the "Italia a 1 Giga" tender called by Infratel.

Collaborations with the world of research
In partnership with **Errequadro**, Open Fiber launched a programme to develop collaborations with universities, research bodies and local intermediaries in advanced business services. The initiative aims to lay the foundations for future developments of systematic and institutionalised collaborations with a view to making Open Fiber a leading player in the national innovation system. Within the programme, several initiatives have been identified, in collaboration with partners of primary importance, to foster

projects in the areas of e-health, geo-referenced microdata infrastructures and edge computing.

Collaboration initiatives with the world of research already launched in 2021 and continued in 2022 include participation in the newly established National PhD in AI

(phd-ai.it). **Open Fiber is the only private company to sponsor one of the first 44 PhD-AI scholarships in the "Artificial Intelligence For Society" area coordinated by the University of Pisa.** The scholarship's focus is the study of machine learning techniques applied to the optimisation of customer processes.

TIRESIA PLATFORM

Within the Tiresia project, a software platform was developed that uses multiple data sources integrating tens of millions of records and applying Machine Learning techniques based on neural networks to implement some forecasting models trained to predict commercial performance on the Italian territory.

DATA SOURCES
- Open Fiber customer base and coverage data
- Competitor coverage data
- Infratel data (areas, consultation results)
- Istat census data
- Area or municipality to be analysed

TRAINING DATASETS → TRAINING

CHARACTERISTICS OF THE AREA/MUNICIPALITY → PREDICTION → FORECAST
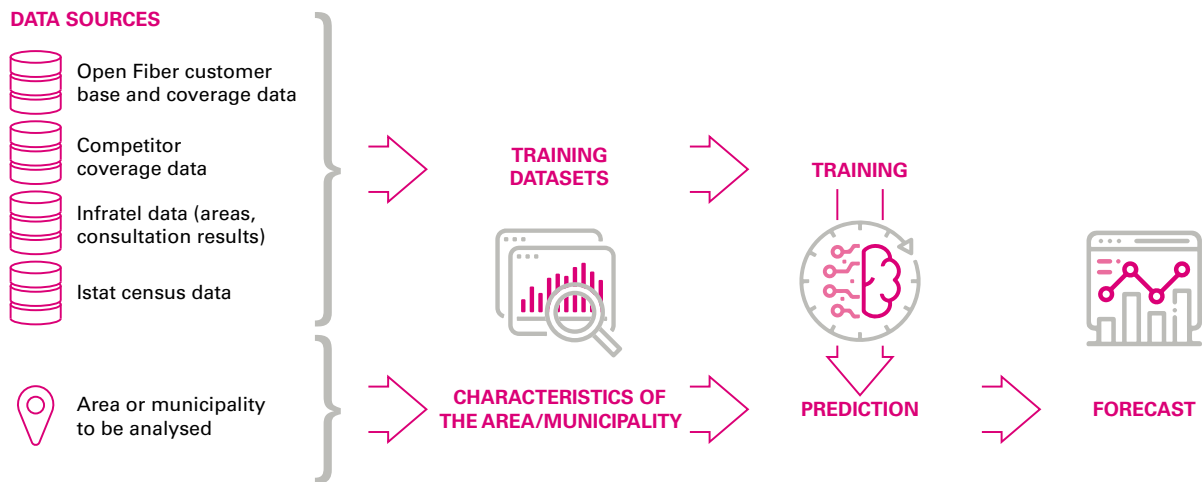
Tiresia's forecasting models are already being used by Open Fiber, for example to reply to consultations or tenders, or to support investment decisions. Available models include:

- Order Forecasting: applies to areas where Open Fiber is already operational and allows short-term (<6 months) forecasts to be made regarding the number of orders.

- Where to Cable: applies to areas where Open Fiber is not yet operational and allows to predict the penetration rate up to 24/27 months.

- Municipality Ranking: combines the previous models according to the characteristics of the analysed context to calculate a ranking of the municipalities.

B2B market expansion

In partnership with the **Naima** brain trust, Open Fiber launched an intervention based on the Point-to-Market (PtM) approach aimed at expanding the B2B segment on the basis of the following principles:

- Any basic innovation is rooted in the market because of the opportunity it provides to develop functional applications that can change business processes and thus change competitive dynamics.
- This kind of innovation finds inertial resistance in the adoption system until most stakeholders find either a differentiating element or a clear advantage.
- The class of innovations introduced by Open Fiber affect all industries and transform supply chains into multi-lateral business platforms.

The project consists in the identification of some interesting pilots in which Open Fiber makes its technical resources and capabilities available in a neutral way and the operators can offer their customers the possibility of testing the **bundle that creates super-performing applications**. If the trial proves to be strategic for the customer then it can be proposed commercially in agreement with the OLO and appropriately branded. The aim is to support as much as possible the spread of High-Performance Fiber via the OLO customers/partners of Open Fiber.

The target sectors identified are not only crucial for the country's economic system but are also characterised by a strong need for competitive innovation.

For the **Fintech sector**, a trial was successfully concluded to test the application of the low latency concept throughout the trading process of financial instruments on institutional markets. The Fintech sector was chosen because

of the large number of potential cases (Customer Jobs), the possibility of micro-segmentation by Customer Job, the strong need for technological innovation, the high performance and the drive for growth. The Fintech world particularly needs high-performance FAP-Fibre that guarantees elements of fundamental competitive differentiation. This will allow targeted offers to be developed in cooperation with other OLOs and companies specialising in offering applications for the fintech sector.

In the field of **Industry 4.0**, a project proposal aimed at the market of local telecommunications operators has been launched to allow them to provide their business customers with a bundled offer, i.e., a package of IT application solutions that includes fast connectivity and housing, hosting and security services. The project involves the development of a connectivity and cloud model and is a novelty for the industry, which is used to purchasing the components of IT services according to an unbundled logic, i.e., in a fragmented and confused manner.

As regards **culture and entertainment**, an experiment has been set up with Parchi Val di Cornia S.p.A., a company owned by five Tuscan municipalities between the Etruscan Coast and the Colline Metallifere. The company manages a complex consisting of two archaeological parks, an archaeo-mineral park, three museums and three nature parks and attracts around 100,000 visitors per year. Its intention is to experiment with innovative technologies to make the visitor experience more attractive and immersive, using LIDAR technologies to scan the soil in search of possible archaeological and archaeo-mineral discoveries and augmented reality to reproduce Leonardo's walls both in the parks and in the museum and urban context, allowing visitors to virtually go back in time.

Space Economy

Open Fiber also develops collaborations aimed at identifying space-based technologies and solutions applicable to the Company's business, both in Creation and Delivery activities, such as the use of satellite imagery to monitor the progress of worksites, and as a complement to the services offered, as in the case of the HydRON programme.

Open Fiber and Telespazio

Open Fiber has signed an agreement with Telespazio, a European leader in satellite solutions and services, to bring broadband connectivity to even the most remote and isolated places in the country through satellite technology.

This technology allows the signal to be transmitted via satellite link to an antenna

HYDRON PROGRAMME ("FIBRE IN THE SKY")

Open Fiber, in partnership with national champions such as TAS-I (prime), Telespazio, Scuola Superiore S. Anna, CRAT, Officina Stellare and other international players, is participating in the **HydRON** programme, a multi-year programme of the European Space Agency (ESA) for the development of a new generation of all-optical satellite systems (uplink and downlink) dedicated to the creation of hybrid terrestrial-satellite optical networks and the extension into space of terrestrial fiber networks ("Fibre in the sky"). HydRON are instrumental in reducing the global digital divide by providing an important complement to terrestrial Systems such as optical networks, increasing the capacity of backbones and providing alternative or cheaper access circuits in places that are harder to reach by terrestrial fiber. In the future, thanks to systems like HydRON, it will be possible to transparently federate terrestrial networks belonging to different countries and operators and recover European sovereignty in worldwide communications, which is currently impossible because of a few countries' monopoly of trans-continental and trans-oceanic connectivity.
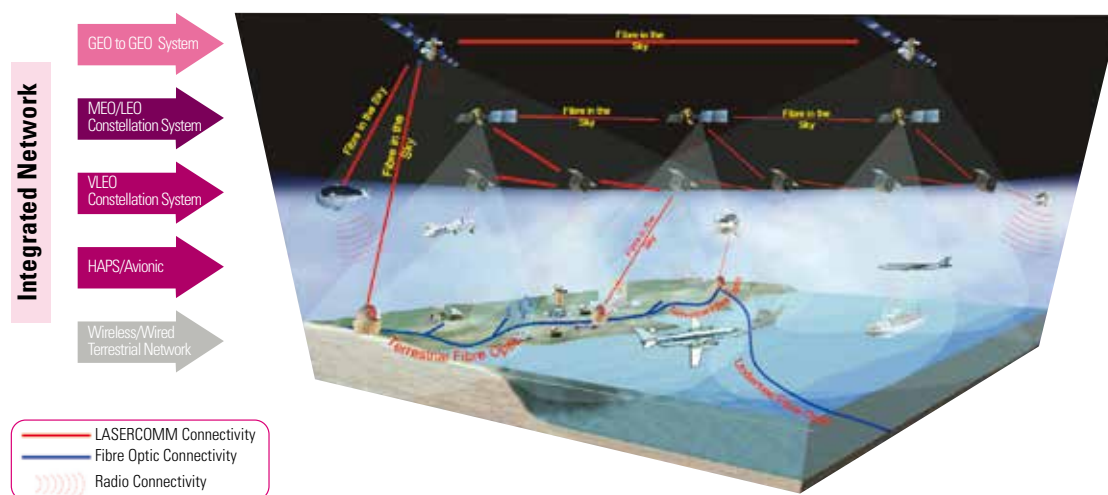
During the first phase of the project, which led to the definition of the system requirements and the related network architectures, Open Fiber's contribution focused on the identification of integration scenarios between optical terrestrial networks and fully-optical satellite systems; identification of the potential benefits in the implementation of the project for a wholesale operator and, more generally, for the community of terrestrial operators providing the fiber infrastructure.

In the current phase, aimed at the development of terrestrial simulators and the first demonstrators, Open Fiber has assumed the role of coordinator of an Advisory Board of potential users in the **Terrestrial Network Operators (TNO)** category, i.e., terrestrial operators that, like Open Fiber, are interested in the solution generated by the HydRON project.

installed and configured in the Customer's home and is able to offer broadband services (HTS – High Throughput Satellite) with performances fully comparable to terrestrial ones.

The STTH (Satellite To The Home) satellite connection is a complementary solution to the Open Fiber offer and represents an alternative opportunity to wire places that would otherwise remain without connectivity. Furthermore, thanks to the forthcoming VHTS (Very High Throughput Satellite) satellites, it will be possible to achieve even higher performances depending on the evolution of the market and the needs of Customers.

2.5.4 The prospects of 5G and its connection with fiber

With the evolution of mobile networks and, more generally, of wireless networks, an increasingly powerful network structure

and capacity to guarantee the expected performance is needed. In this context, 5G represents the main tool capable of taking connectivity to a higher level. With ultra-fast data transmission, low power consumption, greatly reduced latency time and unprecedented reliability, the 5G network redefines the quality standards of mobile connectivity and aims to connect billions of people and devices in a totally new way. It is the infrastructure that can handle the IoT (Internet of Things), as it is designed to handle a very high number of simultaneous connections and the resulting traffic generated. It is predicted that by 2025, 5G will be 10 times more energy efficient than 4G and will increase its efficiency by 20 times by 2030 due to the use of transmission techniques that allow for improved power management of devices.

This revolution will be possible thanks to the capillary spread of 5G mobile sites connected to an all-fiber network, such as

IPV6 PROJECT

In the course of 2022, Open Fiber continued with the IPv6 project, which will come to an end in mid-2023. The aim of the project is to introduce a new class of IP addresses encoded at 128 bits, which differs from the traditional IPv4 class encoded at only 32 bits.

Over the last few years, characterised by an explosion in the spread of the Internet, IPv4 has been the most widely used IP address. However, it is a limited resource (2^{32} possible addresses, or about 4.3 billion), and is therefore becoming increasingly scarce.

As a result, in order to fulfil its objectives of fuelling the digitisation process of the country and the development of the Internet of Things and to accelerate the deployment of FTTH, Open Fiber took on the role of pioneer in the use of IPv6 addresses (2^{128} possible addresses). In fact, it is among the first in Italy to adopt this method of IP address plan management.

The IPv6 project is a necessary element to prevent the digitisation process from coming to a standstill. Every object that wants to be connected to the network needs an IP address to identify it. For this reason, IPv4 and IPv6 are fundamental elements in the digitisation process. As more and more people and objects are connected to the network, the need for IP addresses to identify and manage them is constantly increasing. The adoption of IPv6 addresses will allow billions and billions of objects to be addressed.

An increased connection of objects (e.g. sensors) to the network will offer new opportunities to minimise travel and monitor energy loss and weather events. In order to do this, it is necessary to have a distributed and widespread coverage of the associated sensors, so IPv6 is an indispensable asset.

the one Open Fiber is developing in Italy. Indeed, the performance of 5G technology requires a high-performance network for interconnecting mobile sites, and only an all-fiber infrastructure, spread throughout the country, can adequately meet these needs and make them sustainable.

The integration of new fiber networks and 5G technologies will radically influence the growth and development of various sectors, which will finally be able to fully exploit the potential of digital transformation by offering people and businesses a range of services that were unthinkable up until recently.

The entire wireless ecosystem has set itself challenging goals in terms of eco-sustainability, involving manufacturers of everything from network equipment to telephones, CPEs or terminals in general. Operators are also striving to minimise energy waste and CO_2 emissions by using low-impact energy sources and moving towards products made from recycled materials with an increasingly long life cycle.

Open Fiber launched and implemented a series of projects to connect the wireless sites of different operators by fiber in order to guarantee the evolution to the above-mentioned latest generation services in a reliable and sustainable manner.

2.5.5 Smart Grid

Open Fiber is involved in the connection of secondary substations and related primary E-Distribution substations in optical fiber by 2024 with the aim of evolving the national electricity grid, enabling new functions, for the benefit of the subjects who access the network itself and the actors involved in the management of the electricity system, and accelerating the technological and industrial evolution in the energy transition process. The **DSO 4.0 – Digital Network** project envisages the construction of a communication system of maximum reliability and resilience at the service of the E-Distribution network, making it possible to implement new functions capable of significantly improving network performance. The plan is based on the connection of secondary and primary substations to a fiber optic network in order to achieve a number of objectives and benefits that are fundamental for the development of the distribution network now and in the future. To this end, in addition to the connection of the electrical substations to

BACKHAULING PROJECT IN SICILY

Open Fiber performed a study on the passive Smart Grid, with a focus on the Region of Sicily. The aim is to connect as many substations in the C&D cluster, where there is a greater dispersion of networks and less overlapping. It was necessary to develop an innovative network project, which saw the collaboration of Open Fiber in the definition of the method. This same method can also be applied outside the Region of Sicily and extended to other regions.

The regional project in Sicily started in April 2021 and will end in 2023.

The current situation, which sees approximately 3,600 secondary and primary substations connected, all concentrated in 12 municipalities of the A&B Cluster, will be accompanied by the connection of approximately 75 municipalities of the C&D Cluster (equal to approximately 20% of the total municipalities of Sicily), with around 909 secondary and primary substations.

The project aims to make Sicily a region of excellence in the field of smart grids in Italy.

the optical fiber network, the installation of components and sensors of new technological conception is foreseen. To this end, in addition to the connection of over 56,000 electrical substations to the optical fiber network, the installation of components and sensors of new technological conception is foreseen. This, together with structural interventions, will contribute to the improvement of the quality of the electricity service, as well as to the technological evolution of the E-Distribution network, in line with the forecasts and scenarios outlined by the Integrated National Energy and Climate Plan (Piano Nazionale Integrato per l'Energia e il Clima; PNIEC).

Thanks to the combination of innovative technological solutions and structural and component interventions, the project will make it possible to:

- Take advantage of a highly reliable and resilient communication system, always-on type, to support the distribution network, thanks to the use of the potential offered by the optical fiber network.
- Improve technical performance and service quality, essentially due to advanced automation (smart fault selection), the effectiveness of which will be maximised by the use of optical fiber as a communication vector and by the use of data relating to physical parameters (Big Data analytics), coming from the sensors installed in the stations, for the prevention of maintenance failures.
- Intensify operational efficiency by increasing the degree of remote control of the network, new communication systems and advanced sensors installed in the substations.
- Increase the hosting capacity for the distributed generation of electricity from renewable sources, through grid upgrading interventions.
- Monitor in real time the production from renewable sources connected to the MV-LV network.

3.0 CLIMATE CHANGE, NATURAL RESOURCES AND LOCAL IMPACTS

The challenge of building a "future-proof" digital infrastructure for Italy must involve the use of innovative and sustainable solutions, in harmony with nature and the local community. Open Fiber is developing its own ultra-wideband (UWB) network using FTTH (Fiber To The Home) technology, which not only guarantees higher performance than traditional copper networks, but also has a lower environmental impact.

Open Fiber in conducting its business and planning and implementing the network using working methods, solutions and technologies that allow for:
- The reduction of direct energy consumption by the company.
- Reuse of existing infrastructures.
- Reduced impact of excavation techniques on the environment.
- Reduction of material consumption.
- Proper waste management.

3.1 FIBER'S IMPACT ON THE CLIMATE

The process of setting up the fiber-optic network infrastructure and its management and maintenance, to ensure its operation, require the use of resources. Aware of this, each day Open Fiber strives to manage and reduce the impacts of its operations along the entire value chain.

The contribution of Open Fiber in the fight against climate change is evident on several levels:
- Creation of a high-performance fiber optic network that by its very nature is more environmentally friendly than traditional networks thanks to its physical characteristics (the fiber is composed of glass and polymeric materials that do not require extraction or emissive processing) and operational characteristics (network with low energy consumption, highly resistant, made of small cables, immune to electromagnetic interference).
- Development of energy efficiency projects for its infrastructure, to identify solutions for monitoring and reducing the consumption necessary for the network's operation.
- Constant search for environmentally friendly construction and installation solutions.

3.1.1 Commitment to continuous performance improvement

The energy consumption of Open Fiber represents a central theme of the business and a significant environmental aspect of the company's Integrated Management System[42]: for this reason, Open Fiber implemented a further specific Management System on the subject of energy, compliant with the UNI CEI EN ISO 50001 standard[43], aimed at a structured management of consumption generated by the office buildings, technological sites and the company car fleet, under the guidance of the Energy Management team. The Energy Management System contributes to **increasing market competitiveness, the level of technological innovation, circularity and business resilience**. Starting from the energy assessment and consumption analysis, the Energy Management System allows Open Fiber to identify and plan proposals for improvement aimed at energy efficiency according to the criticalities that emerged during the data analysis and definition of the energy model of the sites, carrying out a cost-benefit analysis of a technical and economic-financial nature.

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42 Open Fiber's Integrated Management System was certified according to the UNI EN ISO 14001 standard in the year 2020.
43 Energy Management Systems – Requirements and usage guidelines.

The Management System also constitutes an important tool for monitoring environmental compliance and compliance with the obligations imposed by current legislation on energy efficiency (Legislative Decree 102/14 and Law 10/91) to which Open Fiber is subject. Top management is directly involved in the approval of energy optimisation initiatives developed within the scope of energy systems management and in the definition of a strategy for the implementation of these initiatives.

As part of this system, an improvement plan has been launched that generates benefits not only with respect to consumption, but also greenhouse gas emissions. Energy efficiency measures, the purchase of energy from renewable sources and emission offsetting

projects are just some of the initiatives implemented by Open Fiber, the results of which are constantly monitored and updated to ensure accuracy.

Open Fiber is aware that the first step towards effective management of energy resources is monitoring. For this reason, the company has provided for the integration of a monitoring system based on the technology of the Internet of Things (IoT) to be installed in technological sites and offices, which will enable the collection and management of the organisation's energy consumption data through the integration of the monitoring architecture with a dedicated business intelligence software capable of automatically acquiring and processing the data, analysing the information and producing personalised reports.

THE PILLARS OF THE OPEN FIBER ENERGY MANAGEMENT SYSTEM
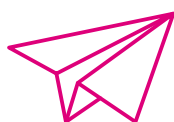
COMPETITIVENESS

Implementation of a company energy policy capable of identifying inefficiencies, allowing the same level of service to be generated with a net reduction in resources used
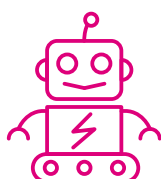
TECHNOLOGICAL INNOVATION

Pursuit of efficiency through the application of cutting-edge technological solutions that increase the value and performance of company assets

ENVIRONMENTAL SUSTAINABILITY

Accelerating the sustainability level of the business, in line with the company's founding values in favour of the circular and green economy

BUSINESS EVOLUTION

Considering energy efficiency as a key to finding new business models/revenues streams, capable of diversifying the services offered

SOLAR FILM FOR THE MILAN OFFICE

Thanks to the application of solar control films on the glazed surfaces of the south- and east-facing façades of the **Milan headquarters**, it was possible to reduce the energy requirements for summer air conditioning, cooling and ventilation.

BENEFITS: 6% reduction in energy consumption (2022 compared to 2021).

PURCHASED ENERGY: 100% FROM RENEWABLE SOURCES

Each day Open Fiber is committed to reducing the emissions generated by the operation of its network. In keeping with this commitment, it started incrementally purchasing energy from renewable sources in 2020. This path reached its culmination in 2022, when the organisation managed to achieve 100% of purchased energy certified as coming from renewable sources.

BENEFITS: approximately 15,000 tonnes of CO_2eq. avoided in 2022[45].

SOLAR PANELS SERVING THE GRID

Solar panels were installed at the **Settimo Milanese technology site (PoP)** for the production of renewable electricity. With a capacity of 4.5 kWp[44], the plant will be able to supply 5,600 kWh each year for the operation of the technology site.

BENEFITS: 2,557 kg CO_2eq. avoided each year.

SUSTAINABLE FLEET MANAGEMENT

Open Fiber's commitment also extends to the management of its car fleet. To this end, it has embarked on a plan to convert its car fleet from thermal to hybrid/plug-in/full-electric solutions and to install electric car charging points at its Rome headquarters.

BENEFITS: reduction of car fleet emissions.

OPEN FIBER GREEN: ENERGY FOR A SUSTAINABLE INFRASTRUCTURE

By virtue of its commitment to continuously seek solutions to contribute to the fight against climate change and to reduce the environmental impact of its operations, Open Fiber has launched the Open Fiber Green project, which envisages the installation of solar panels with which it will be possible to produce green electricity to serve the PCNs – the network hubs in the area – covering around **60%** of its energy needs.

Carried out in partnership with Infratel – the public concessionaire that manages the BUL plan – the project will offer important benefits in terms of reducing environmental impacts due to energy consumption, and over the next few years will see the installation of photovoltaic systems in about **650 sites** in the municipalities of the white areas, for a total installed capacity of **3.5 Megawatts**[46]. When all the plants are in operation, Open Fiber's PCNs will produce **4.8 GWh**[47] each year, with a reduction in emissions of around **2,100 tonnes of CO_2**. Open Fiber Green may eventually become a design model for technological sites serving the network infrastructure and be extended to the majority of Open Fiber sites.

Equivalent to:

in one year around
~ 2,100 tonCO$_2$eq.
GHG emissions avoided

{ one year emissions of more than **1,100** **diesel cars**

the emissions absorbed in one year by approximately **440** **hectares of forest**
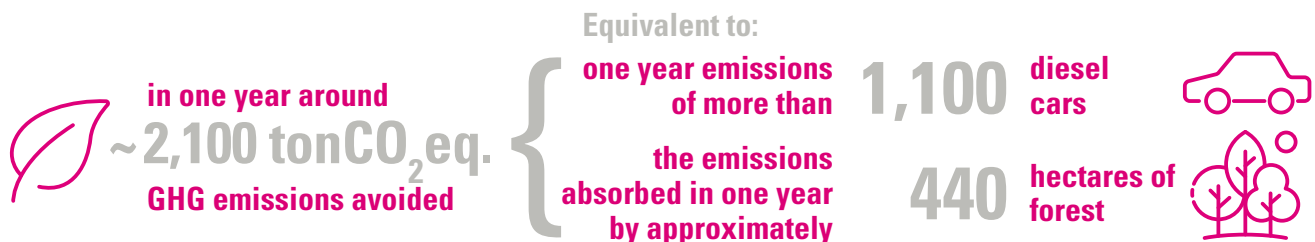
The first photovoltaic plant, inaugurated at the PCN in Castelnuovo di Porto, Rome, can produce over 6,000 kWh per year, thus avoiding the emission of 2.8 tonnes of CO_2.

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44 kWp – peak kilowatt: measure used to measure the maximum instantaneous power that can be produced by an electric generator.

45 Calculated on the basis of the share of electricity from renewable sources considering the marked-based emission factor provided by AIB – European Residual Mixes Results of the calculation of Residual Mixes for the calendar year 2021.

46 Installable peak power.

47 Annual energy production capacity, based on peak power.

~ 141,400 GJ

total consumption 2022

100%

electricity purchased from renewable sources

84%

energy from renewable sources of total consumption 2022

3.1.2 Energy performances

Open Fiber's main energy consumption can be attributed to the use of electricity for company offices and technological sites (around 87% of total energy consumed), the consumption of diesel and petrol for the company car fleet (around 12%) and the consumption of natural gas for heating offices (around 1%). With reference to electricity consumption, in 2022 Open Fiber reached a quota of approximately 118,400 GJ of energy from **renewable sources** (through the purchase of Guarantees of Origin)[48], or 84% of the total energy consumed. The Company has recorded

a growth in terms of the number of connected real estate units (which reached about 15.5 million in 2022 compared to about 13.5 million in 2021), and consequently of technological sites, on-field staff and within the company's premises: this has led to an increase in overall consumption within the organisation (about +46%).

Open Fiber measures its efficiency through energy intensity (defined as energy consumed per connected real estate unit), which in 2022 was 9.1.

Energy consumption within the organisation

- ● Electricity from renewable sources
- ● Energy from natural gas
- ● Energy from petrol
- ◺ Electricity from non-renewable sources
- ◉ Energy from diesel

302-1: Energy consumption within the organisation

Energy consumption	U.M.	2020	2021	2022
Electricity consumption from non-renewable sources	GJ	29,767.4	5,930.7	4,119.0
Electricity from renewable sources	GJ	26,640.1	75,277.7	118,432.4
Energy consumption from natural gas consumption	GJ	2,581.6	2,786.8	2,222.7
Energy consumption from (transport) diesel consumption	GJ	5,025.7	5,379.2	5,129.9
Energy consumption from (transport) petrol consumption	GJ	2,797.8	7,418.6	11,538.5
Total energy consumption	**GJ**	**66,812.6**	**96,792.8**	**141,442.5**

302-3: Energy intensity

Description	U.M.	2020	2021	2022
Total energy consumed	GJ	66,812.6	96,792.8	141,442.5
Energy intensity	**MJ/REU**	**6.3**	**7.2**	**9.1**

48 The energy procured and certified through Guarantees of Origin (provided for by EC Directive 2009/28/EC) comes from renewable source plants as certified by the certification system managed by the Energy Services Manager in accordance with existing legislation.

2022 HIGHLIGHTS

~ 0.14

**kg CO$_2$eq. per real estate unit
connected in 2022**

-7%

**reduction in emissions intensity
(2022 vs 2021)**

3.1.3 Greenhouse Gas Emissions

The greenhouse gas emissions generated by Open Fiber are mostly related to the consumption of fuels used for heating and transport (direct emissions) and electricity from non-renewable sources (indirect emissions). Moreover, leaks of greenhouse gases from air-conditioning systems (HFC hydrofluorocarbons) converted to tonnes of CO$_2$eq. via Global Warming Potential are also included in emissions monitoring.

For the classification of emissions, Open Fiber follows the approach of the GHG Protocol (Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard) and distinguishes between direct Scope 1 emissions (direct emissions from sources that are owned or otherwise under the control of the organisation) and indirect Scope 2 emissions (emissions due to the generation of electricity purchased and consumed by the organisation).

Scope 1 emissions are those resulting mainly from combustion in plants, boilers and company vehicles. To these Open Fiber has added emissions due to gas leaks from air conditioning systems, appropriately converted through the application of the Global Warming Potential (GWP) associated with different refrigerant gases and published by IPCC (Intergovernmental Panel on Climate Change)[49].

Scope 2 emissions include those indirectly deriving from the generation of electricity purchased by Open Fiber and have been determined using both the location-based approach and the market-based approach: the latter, which considers only the share of electricity to which no Guarantees of Origin have been associated, offers a view of the benefits in terms of commitment to the fight against climate change that Open Fiber has achieved through the use of energy from renewable sources, both in terms of total emissions and in terms of intensity (calculated as kg CO$_2$eq. per connected real estate unit).

**Trend of GHG emissions intensity per
connected real estate units
(kg CO$_2$eq./REU)**

| 2020 | 2021 | 2022 |
| 0.44 | 0.15 | 0.14 |
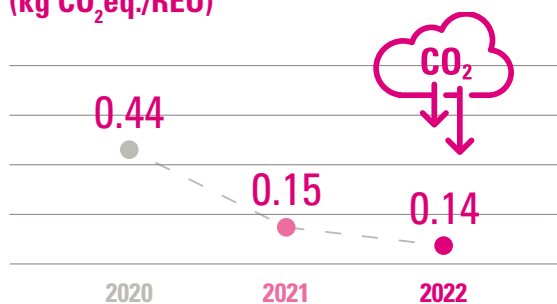
305-4: GHG emissions intensity (scope 1 + scope 2 – market based)

Description	U.M.	2020	2021	2022
Scope 1 Emissions[50]	t CO$_2$eq.	788.4	1,270.1	1,643.7
Scope 2 emissions – market based	t CO$_2$eq.	3,852.3	755.5	515.4
GHG emissions (Scope 1 + Scope 2 - market based)	t CO$_2$eq.	4,640.7	2,025.5	2,159.1
GHG emissions intensity ratio	**kg CO$_2$eq./REU**	**0.44**	**0.15**	**0.14**

49 Intergovernmental Panel on Climate Change – IPCC Sixth Assessment Report, 2021 (AR6).
50 Includes emissions from fossil fuel consumption and refrigerant gas leaks from air conditioning systems.

HAPPY B-DAY & NEW BORN

The **Happy B-Day & New Born** project aims to celebrate important days for Open Fiber employees by making an active contribution to the preservation of the ecosystem. On the day of their birthday or the birth/adoption of a child, each employee receives an email with a link to plant their own tree from a distance and follow its growth online. The initiative was developed in collaboration with Treedom, a web platform that allows people to plant trees remotely: all the trees are planted directly by local farmers and contribute to producing not only environmental, but also social and economic benefits.

To date in the Happy B-day & New-Born forest about 5,300 trees have been planted in 11 countries (Italy, Cameroon, Ecuador, Guatemala, Haiti, Kenya, Madagascar, Nepal, Tanzania, Colombia and Ghana), leading to the offsetting of over 1,000 tons of CO_2.

For more details see the link: https://www.treedom.net/it/organization/open-fiber-s-p-a.

3.2 FIBER INNOVATION AS A DRIVER FOR SUSTAINABILITY

According to the 2022 World Economic Forum[51], digital solutions could help reduce global carbon emissions by up to 20%, proving to be key to achieving carbon neutrality. In this context, the fiber-optic network is not only highly performing, but also has a lower environmental impact than traditional technological solutions.

This because – as also emphasised by the FTTH Council – the advantages of optical fiber cables are many: extremely flexible filaments and high resistance to wear and tear; high conductive capacity, low attenuation and bandwidth that are particularly suitable for connections over long distances and at high bit rates; immunity to electromagnetic interference; and a small size and low weight. These characteristics not only ensure intrinsic network efficiency, but also reduce maintenance requirements, with consequent environmental benefits in terms of lower energy consumption, resource use, waste production and greenhouse gas emissions into the air.

On the contrary, a copper network is less efficient and has a greater negative impact on the environment. Copper requires mining and processing processes that produce high levels of emissions, has electromagnetic losses and, because of its sensitivity to atmospheric events and changes in temperature, requires ongoing maintenance with more frequent worksites, resulting in more waste and emissions.

When comparing life cycles, the sustainability of fiber over copper is even clearer.

Production

Optical fibers are made up of a set of filaments of glassy or polymeric materials: the basic material is glass[52], coated with acrylic resins, in order to make the fiber mechanically strong enough to be manipulated and wound onto spools.

Copper cables, on the other hand, are made of a raw material that must be extracted from mines in a few countries in the world (particularly Latin America and Africa) or must be produced through special recycling processes. The extraction of 2 kg of the raw material needed to produce a copper wire of about 60 m in length produces about 1,000 kg of CO_2. Producing the same length of optical fiber cables would produce 0.06 kg of CO_2, less than 0.01% of the emissions from copper. In addition, since the transmission speed of copper cables is directly related to the weight of the cable used, it would take far more than 60m of copper to match the performance of the same length of fiber cables[53].

Moreover, while optical fiber – starting with a glass preform – is produced through a spinning process that pulls the glass fiber and wraps it in an acrylic resin coating, the copper, once extracted, must then be processed in ways that create additional dust and emissions before it is installed in the form of cables.

Finally, in addition to the negative environmental impact related to the production of copper wire, the impact produced during its disposal must also be considered. In fact, the impact of the production and disposal of fiber optic cables on the environment is less than that of copper wiring.

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51 For more details, please refer to the link: https://www.weforum.org/events/world-economic-forum-annual-meeting-2022/sessions/unlocking-digital-innovation-for-net-zero.

52 For example, compounds based on oxides such as silicon oxide, phosphorus oxide and/or germanium oxide.

53 Source: Carbon Smart "Out digital infrastructure needn't cost the earth".

CURRENTLY UNDER STUDY: INNOVATIVE AND SUSTAINABLE LAYING MATERIALS

In order to increase the green approach to the management of materials for the construction of the network, Open Fiber has successfully experimented with a solution to reduce the weight of **concrete manholes** by reducing their thickness and varying their composition with different types of concrete used in smaller quantities, all while maintaining the initial mechanical characteristics, and therefore not decreasing the intrinsic performance of the product.

Open Fiber is committed to finding solutions for the use of fiber-optic cable protection **tubes** made of innovative materials and with a lower environmental impact. These are smooth-surfaced high-density polyethylene pipes for laying underground to protect optical fiber cables, which comply with CEI EN 61386-24 standard and bear the PSV (Plastica Seconda Vita - Plastic Second Life) label, an environmental certification system dedicated to materials and products obtained from the recycling or recovery of plastic waste. The low environmental impact of the system originates from the structure of the polyethylene-based pipe, at least 70% of which is derived from recycled materials with certification of PSV compliance issued by IPPR (Institute for the Promotion of Recycled Plastics). The halogen- and heavy-metal-free product is fully recyclable at the end of its life cycle, where intelligent disposal methods are used for waste, scrap and residues so that nothing recyclable is wasted.

A reduction in the number of materials used per package and the use of fully recyclable and environmentally friendly materials are also being investigated and scouted. Where possible, Open Fiber is also committed to the recovery and reuse of obsolete products.

Transport and installation

Optical fibers are smaller in size and weight than copper cables, allowing the use of alternative, low-impact excavation techniques that also allow for faster installation times, thus reducing not only network construction time but also the emissions associated with the works. In addition, being able to install more transmission capacity than needed in the same space without incurring additional operational costs or emissions eliminates the need for additional installations at a later date. The fiber optic network uses fewer active devices. In fact, copper networks require amplifiers over distances of the order of 100 m-2 km, whereas fiber can support 100 km without amplifiers. Over an area of 40 km this is equivalent to having hundreds of active nodes for copper networks versus a single active node for FTTH networks.

Network functioning

Optical fiber networks are "passive" networks, i.e., they do not require constant power supply and do not generate electromagnetic dispersion in the environment. Copper networks, on the other hand, consume considerably more electricity to transmit the same signal as a fiber network and require a more energy-intensive structural architecture than a fiber network. In addition, the additional heat generated by the energy consumption of copper networks also requires a substantial increase in cooling equipment, resulting in higher energy consumption and associated emissions into the air.

Network maintenance and end of life

Optical fiber cable has an estimated lifespan of between 25 and 38 years[54] thanks to a structure consisting of glass filaments enclosed in a polymer coating that makes it resistant to both mechanical and thermal phenomena. Optical fiber is also the best solution in the event of environmental disasters, because, for example, it is less prone to degradation due to high humidity, frost or electrical interference. Copper, on the other hand, by its nature can be subject to oxidation, corrosion and short circuits, which impair its efficiency and, in the most serious cases, shorten its service life, requiring

54 Source: Carbon Smart "Out digital infrastructure needn't cost the earth".

replacement. In addition, being a very valuable material, it is often subject to theft with serious consequences on the network functioning up to the disruption of the service. Finally, the technological upgrades of the fiber network do not require any intervention on the distribution network, but only changes at the central site and user premises, with a consequent positive impact on the environment.

Using a fiber connection
By comparing the optical fiber connection with the copper connection, a further environmental and economic advantage arises due to the different performance recorded by end users. Considering constant use without any interruptions, a connection with a copper cable involves an energy consumption per user of 10 Wh, which drops to about 2 Wh with an optical fiber connection, generating an estimated average saving of 8 Wh per user. Furthermore, a copper network generates heat and therefore requires a cooling system that consumes energy and electricity, while fiber optics do not. Thus, the use of a fiber connection allows not only more effective communication, but also with less impact on the environment.

3.3 SUSTAINABLE LAYING TECHNIQUES

Open Fiber promotes and builds a fiber network in harmony with nature and the territory by using cable-laying techniques that, where possible, reuse existing infrastructure and apply excavation methods with a low environmental impact. Indeed, the laying, reuse, rehabilitation and replacement of sub-service networks takes place with zero or little use of open excavation, removing very small volumes of soil, using miniaturised network accessories that require less raw materials and ensuring that design processes require as little paper as possible.

Reuse of existing infrastructures
The preferred method for laying Open Fiber's optical fiber network is the reuse of existing infrastructure as it avoids the generation of negative impacts on the environment and the community. Precisely for this reason, the company promotes this solution by guaranteeing municipalities that make their infrastructure available the free connection of Public Administration buildings such as schools, offices or libraries.

A specialised Open Fiber team and the operator or owner of the existing infrastructure check – before the start of the activities – the state of the infrastructure, the possibility of coexistence of the different services and, in particular, everything concerning operation and maintenance requirements. The methods for re-use vary according to the destination of the infrastructure (for optical cables, telecommunication networks, electricity grids, railway networks, etc.). If it is not possible to work on the road, Open Fiber resorts to **aerial laying**, a technique that involves using piling that already exists in the area and connecting the cables from one pile to another with the help of special

clamps and suspensions. In this case, it is possible to reuse existing routes because the fiber does not generate dispersion of any kind and can be laid at a short distance from other infrastructures, such as electricity cables.

A&B Cluster — 50% / 50%

C&D Cluster — 20% / 80%

Italia a 1 Giga — 56% / 44%

● Reuse of existing infrastructure excavation   ● New excavation
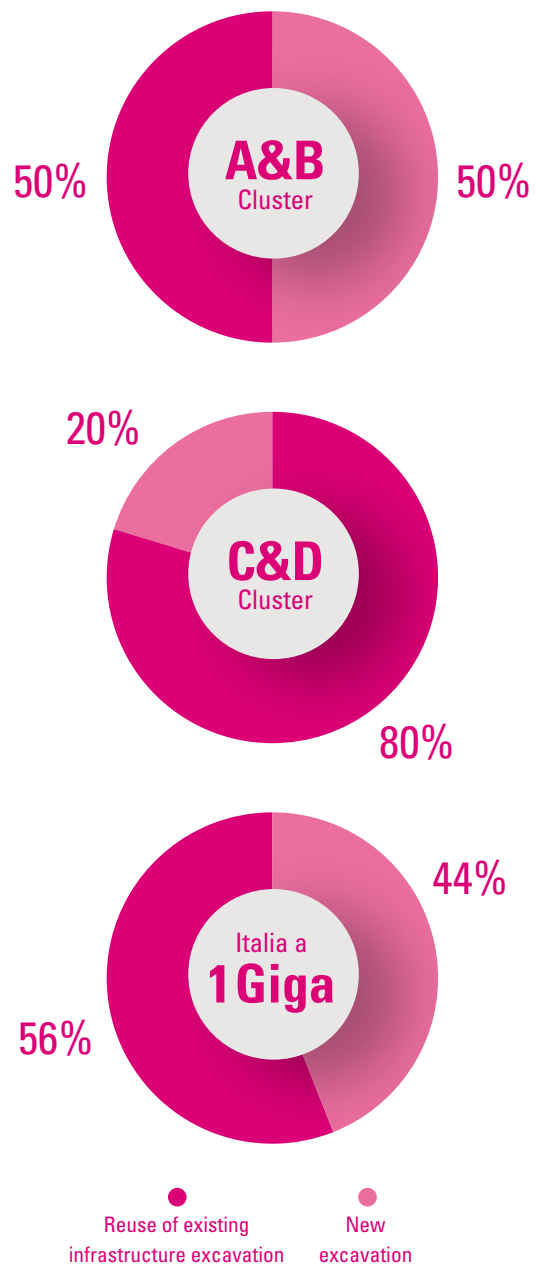
In 2022, as in 2021, Open Fiber used existing infrastructure for 50% of the fiber-laying for the **A&B Cluster**[55], a percentage that increased to 80% for the **C&D Cluster**[56]. These figures demonstrate the company's commitment and achievements in reducing the environmental and social impact of its job sites.

Also in 2022, works were started in the areas covered by the **"Italia a 1 Giga" Plan**: these initial efforts saw a re-use of about 56% of the network and the remaining 44% new excavations. For the latter, low-impact excavation techniques such as mini-trenching, micro-trenching and no dig were used. The no-dig technique consists of remote-controlled drilling where the pipeline infrastructure is installed, which eliminates the need for open excavation and thus minimises the use of materials and waste to be taken to landfills, and consequently also the restoration work to be done.

Smaller-sized excavation techniques
When the reuse of existing infrastructure is not possible, Open Fiber uses alternative excavation techniques which represent a novelty not only from a technological point of view, but above all in relation to the different impact that these technologies have on the community. Compared to traditional excavation, these small excavation techniques reduce the social and environmental impact and energy consumption, as well as improving the safety levels for personnel on site and those passing by in the surrounding area. The efforts made to industrialise small-scale excavation techniques have led to the development of **mini-trenching systems**[57], which have the advantage of radically reducing the volume of soil to be removed and sent for recovery or disposal and, consequently, reducing the consumption of resources linked to the inert material

required for the backfill, with consequent additional transport, which is a further factor increasing the environmental impact.

The use of mini-trench systems is particularly suitable in urban or extra-urban areas on asphalt or cemented surfaces, such as roads or pavements, with a base of compact material, while it is limited when there is a high amount of gravel, cobblestone or valuable material (such as porphyry, stone materials, self-locking blocks) in the subsoil. Upon completing the laying, the technique involves a final, cold filling using a single-component, controlled-shrinkage mortar to reduce the time needed to restore the road surface. Depending on the size of the infrastructure to be laid and the location of the work, the excavation and laying techniques are divided into **mini-trench** and **reduced mini-trench**. This type of excavation involves the construction of trenches that are approximately 5 cm wide, which is why it is not necessary to close the roads to traffic, and the installation is also very quick and the road can be passable again in a short time. The phases of excavation and suction of the waste material are simultaneous, in order to accelerate the cleaning of the trench. These operations are carried out with appropriate dust abatement methods in order to keep the site clean and to limit discomfort for citizens and air pollution.

Micro-trenching is an even more advanced technology for laying optical fiber cables and can be used under certain special environmental conditions. Micro trenching is reduced to a minimum (only 2.5 cm wide by a maximum of 30 cm deep, at the edge of the pavement) and requires less use of machines, which simplifies opening and closing operations. A further benefit is related to the simplification of operations related to the opening and closing of construction sites. For example,

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55 With regard to new excavations for the A&B Cluster, Open Fiber used mini-trenching and micro-trenching in 40% of the cases, the traditional excavation technique in 40% of the cases and for the remaining 20% of the operations the "no-dig" excavation technique was used.

56 With regard to new excavations for the C&D Cluster, Open Fiber used mini-trenching and micro-trenching in 45% of the cases, the traditional excavation technique in 40% of the cases and for the remaining 15% of the operations the "no-dig" excavation technique was used.

57 Trenchless technology which allows the laying of service networks by means of simultaneous or non-simultaneous resurfacing of the road surface, laying of the infrastructure and/or cables and filling with cement mortar. Source UNI/PdR 7:2014.

the restoration of the road surface for normal excavations involves two stages of restoration (temporary restoration and permanent restoration), while with micro-trenching it is possible to carry out permanent restoration starting from the filling of the excavation by means of a special cement mortar that has chemical, physical and mechanical characteristics that guarantee rapid setting and perfect adhesion to the walls of the excavation and avoid the creation of cracks and fissures, and consequently the need to rebuild it.

By way of example, it should be noted that reducing the size of the excavation to 3x30 cm alone reduces the **volume of soil to be removed by about 75%**, corresponding to more than 40 tonnes of material for a 1 km section. For this reason, wherever possible, Open Fiber uses mini-trench or micro-trench excavation to lay the network. When it is not possible to use the mini-trench or micro-trench technique, Open Fiber uses other technological solutions for the cabling of the FTTH network, known as "no dig". This technique, designed to lay pipes and cables underground, makes it possible to overcome natural and artificial obstacles in the laying process or simply to avoid open-air excavation, also allowing optimal recovery of existing infrastructure:

the cables are inserted inside special tubes and only two punctual excavations are opened in the ground, one at the beginning and one at the end of the route, usually far from the roadway. The cables are run from one excavation to the other, avoiding the creation of an open trench.

According to a study modelled by the Federation of Swedish Industries, the use of this excavation technique results in an 80% cost saving and a 67% reduction in occupational accidents. Moreover, here again for this type of excavation works are completed within a few hours and restrictions on road and pedestrian traffic are limited.

Open Fiber is taking part in a technical round table to define the guidelines for regulating these innovative techniques and restoring the safety conditions of the road surface after excavation work. Road owners, regions and municipalities, universities, large telecommunications operators, installation companies and suppliers of excavation equipment are all involved in this important project. The Company's contribution focuses on defining the methods of carrying out the excavation techniques, the cost of the work while respecting the safety conditions of the road, i.e. determining the exact

EFFECTIVE AND GREEN NETWORK MONITORING

The installation of **OTDR (Optical Time Domain Reflectometer)** allows Open Fiber not only to guarantee an efficient network and continuity of service, but also to reduce the costs and impacts associated with the analysis and diagnosis of faults in its fiber optic network. The OTDR, in fact, makes it possible to identify any damage quickly and accurately: in just a few minutes you get the result of the measurement in order to carry out the intervention.

Whereas previously the intervention team would identify the fault from the technological site and, once they had found the location, would go to the site to resolve the problem and then return to intervene on the site, today thanks to the OTDR installed inside the technological sites it is possible to circumscribe the intervention area. In this way, the team can go directly to the site of the fault as all the measurement and monitoring is done centrally by Open Fiber. This type of analysis and diagnosis significantly improves the maintenance process, allowing a lower cost in terms of time for interventions, but also a saving of resources (human, labour and natural) and a reduction in environmental pollution (e.g. lower CO_2 emissions related to travel).

dimensions within which to carry out the excavation (extension and depth of the ground). The objective is to define the methods for building the infrastructure with the least possible impact on the environment, optimisation of costs and maximum speed of construction.

FWA Wireless Sites
Fixed Wireless Access (FWA) technology is inclusive by nature: the absence of invasive infrastructure such as excavations or penetrations into buildings makes it easy to install even in the most difficult topographies and allows it to reach remote homes otherwise cut off from broadband access. Moreover, it is deployed where FTTH is not economically viable. This system is characterised by one or more radio stations (with relative antennas), designed to provide broadband services to individual terminals, installed at the end customers' homes. FWA technology has

a very low electromagnetic impact since Open Fiber chooses equipment with low emissions comparable to those of 2.4 GHz Wi-Fi modems, normally used in homes.

The move towards 5G technology will also positively impact the sustainability of FWA networks. In the coming years, 5G is expected to become more energy-efficient than 4G, also thanks to transmission techniques involving improved power management of devices. The wireless ecosystem has set itself ambitious goals in terms of eco-sustainability, involving manufacturers of everything from network equipment to telephones, Customer Premise Equipment (CPE) or terminals in general. Operators are also striving to minimise energy waste and CO_2 emissions by using low-impact energy sources and moving towards products made from recycled materials with an increasingly long life cycle.

3.4 WASTE MANAGEMENT

The great attention that Open Fiber devotes to environmental sustainability has led the company – also as part of its Environmental Management System – to analyse the impacts of its activities also in terms of waste production and management, with the aim of identifying appropriate actions to improve performance. In addition to the management of waste directly produced by the company, Open Fiber has extended these reflections to its own value chain with a view to an extended life cycle analysis.

At the design level, where applicable Open Fiber prefers minimally invasive laying techniques such as the reuse of existing infrastructure (e.g. by stringing cables on existing pylons) or laying on building façades.[58] Where such interventions are not possible and excavation is required, it favours low environmental impact excavations such as micro-trenching, mini-trenching and remote-controlled drilling with no-dig technology. Thanks to this strategy, the company minimises the production of waste materials that will then have to be managed as waste compared to the traditional excavation technique.

The **waste directly produced by Open Fiber** consists mainly of urban waste produced by the company's offices. This separately managed waste is entrusted to the public collection service and mostly sent for recycling and recovery at authorised plants.

The production of special waste may occur sporadically if certain stocks of materials supplied directly by Open Fiber for the construction and maintenance of the FTTH network become obsolete or are otherwise unusable. In these cases, the company checks on the possibility of re-use by third parties,[59] otherwise the waste is managed in accordance with current regulations, and when possible destined for recovery operations conducted by authorised parties.

On the other hand, with regard to waste generated while **building and maintaining the FTTH infrastructure** and the maintenance of the company's properties, in most cases Open Fiber is not the producer of the waste as the operations are entrusted to external suppliers. In these cases, the generation of waste and its management through recovery or disposal are the responsibility of the contractors and subcontractors that were assigned the tasks, which are assessed both at the qualification stage and during construction. In all these cases, Open Fiber defines appropriate environmental protection clauses that its suppliers must comply with and verifies possession of the technical capabilities and appropriate qualifications to best manage waste management processes in compliance with current regulations (e.g. by verifying possession of authorisations for the destination facilities, registration with the National Register of Environmental Managers for transporters, etc.).

Moreover, Open Fiber monitors data and information proving the correct handling of special waste by suppliers and contractors involved in these activities. Checks and document requests are governed by Open Fiber's contracts and environmental management system, which contractors must comply with. The main controls and monitoring include:
- Request for the archiving and checking of FIRs (Formulari Identificativi dei Rifiuti – Waste Identification Forms) issued as part of contracted operations.
- Spot checks of MUDs (Modello Unico di Dichiarazione Ambientale – Single

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58 For more details see paragraph 3.3 "Sustainable laying techniques".
59 By assignment for any reason permitted by law.

Environmental Declaration Form) submitted by suppliers/contractors involved in the operations.
- Field verification of the proper management of waste produced and temporary storage.
- Field and documentary verification of legal compliance with regard to operational waste management, making sure there are no cases of waste abandonment.

Environmental checks are carried out on several levels, through systematic checks performed by the Director of Works (first-level controls) and spot checks performed by the Network & Operations Department

(second-level controls) through the completion of checklists focused on monitoring the significant environmental aspects associated with the operations. In addition to these first two levels, spot checks performed during internal audits of the Environmental Management System, carried out by the QHSE specialists of the Personnel, Organisation and Services Department.

The results of these checks are also processed through the Open Fiber portal, which allows the monitoring of any non-conformities found, and periodically reported to the Management Team.
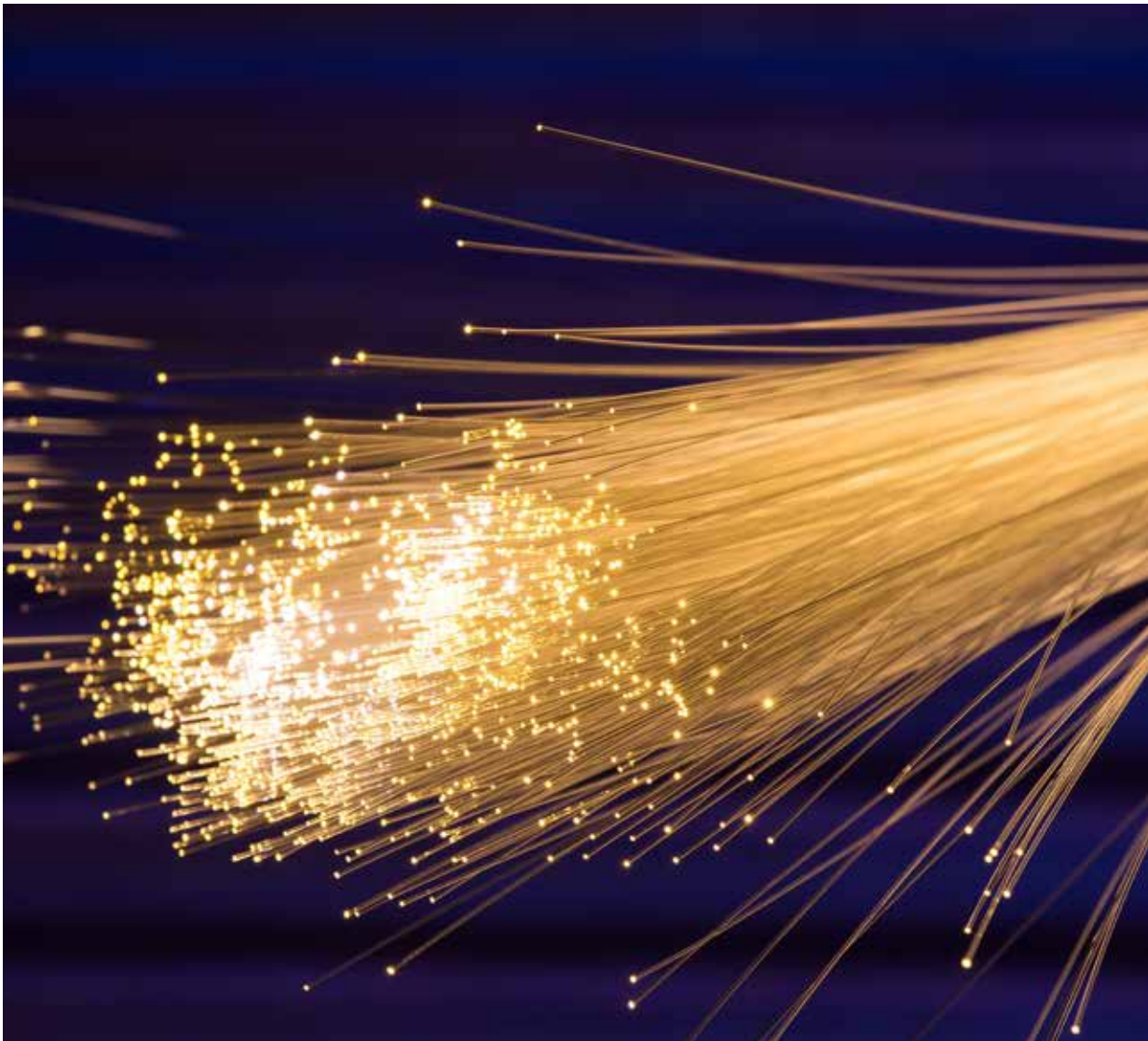
4.0 SOCIO-ECONOMIC DEVELOPMENT, DIGITISATION OF THE COUNTRY AND VALUE CREATED FOR INDUSTRY

4.1 DEVELOPMENT AND PROTECTION OF THE NATION AND ITS COMMUNITIES

One of the aspects that contributes to the beauty of our country is that it is a set of very different pieces: a harmonious coexistence of villages and cities which, from north to south, represent art, tradition and a centuries-old culture. This peculiarity is a strong point and, for this reason, Open Fiber wants to contribute to preserving and supporting the beauty of the area, ensuring equal conditions in accessing services in every part of Italy. The choice of creating an Ultra Broadband and optical fiber network that is widespread throughout the country appears to be an effective tool to accompany every local reality towards digitisation. The new services, in fact, will guarantee an improvement in the quality of life in small municipalities, often subject to depopulation also due to the lack or scarcity of fast connections, increasing their attractiveness for citizens and tourists, and will enhance cities, making them increasingly smart.

Despite the numerous advantages provided by fiber, network construction activities can sometimes cause inconvenience, mainly due to the presence of construction sites and interference with other infrastructures and underground services[60]. For this reason, Open Fiber always carries out an attentive assessment of the environmental and social impacts, real and potential, and constantly monitors its activities in order to minimise the negative effects on the territory at all stages of development, starting from a design oriented towards maximum reuse of existing infrastructures (thus minimising the construction of new infrastructures and the generation of negative impacts on the environment and the community) up to the use of excavation procedures and technologies with low environmental impact.[61]

4.1.1 Optical fiber as an opportunity for the territory

Smart working, remote learning, streaming, home automation, video connections and gaming: in a world where digitisation has become key to the normal flow of daily life, especially following the COVID-19 pandemic that began in 2020, the demand for internet access in Italy has exploded significantly. It is in this framework that Open Fiber's action reflects an opportunity for the country, as it provides the population, municipalities and provinces with access to an Ultra Broadband telecommunications infrastructure that allows Italian communities to be more competitive in various areas, from housing innovation to tourism, from smart working to telemedicine. This is how it becomes possible to work from home, being able to transfer large amounts of data, follow distance learning programmes, quickly access the digital services of the Public Administration, make excellent quality video calls without interruptions and improve the quality of healthcare, enabling remote diagnosis and medical advice. All this thanks to very high browsing speeds, a stable connection and very low latency that avoids delays in data transmission, simplifies and improves relations between the people and the Public Administration, between students, schools and universities, thus enabling the country to keep pace with an evolving world and accelerating the digitisation process.

In addition to the cabling of schools, the hyperconnection of hospitals, and the digitisation of Public Administration management systems, the installation of the Ultra Broadband fiber optic network is a fundamental factor for the growth of the

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60 Primary services, such as electricity, gas, telecommunications and sewerage networks, channelled into special pipes built underground.

61 For more information on the environmental benefits of laying techniques, see paragraph 3.3 "Sustainable laying techniques".

OPEN FIBER FOR GAMING

2022 began with the grand return of the **Open Fiber Cup**. The **first cross-platform online competition dedicated to Apex Legends**[62] **in Italy** was organised in partnership with ESL Italy. On 18 January 2022, the competition ended with the grand finale, which was live streamed on Twitch and followed by over 300,000 people.

Throughout the year, there was no shortage of further collaborations with important pop culture events: Open Fiber was Connectivity Partner at **Trapani Comix & Games** and **COMICON** in Naples.

As Connectivity Partner of COMICON 2022, the company's FTTH fiber lit up the XXII edition of the International Comics and Games Fair, which took place in Naples on 22-25 April. Participants at the event surfed the Internet at the highest speed available on the market: 10 Gbps.

country also in terms of its contribution to the Gross Domestic Product (GDP), because it has a positive effect on the activities of businesses in terms of an increase in the number of jobs and fosters the revival of small municipalities in terms of an increase in the number of new residents.

4.1.2 Restocking and attractiveness of small Italian municipalities

According to Istat, in the last 40 years a large part of the small Italian municipalities has seen a depopulation equal to about 60% of the population. The reasons that push the inhabitants of small towns to move towards the Italian metropolises are almost always linked to the search for better opportunities for job growth. In a country where the digital divide has always been present at high levels, being born in

a small town means having difficulty even imagining being able to achieve ambitious work goals without having to leave your country. Even the National Association of Small Municipalities (Associazione Nazionale dei Piccoli Comuni; ANCI), in its own Atlas of Small Municipalities, has shown that in recent years, towns with less than 5,000 inhabitants have faced unequivocal depopulation. Specifically, 73% of the small Italian municipalities were considered in exodus (i.e. with a negative variation of the resident population).

The phenomenon of depopulation is also often associated with the increase in the average age of the population: reading the Istat data, residents in municipalities with less than 5,000 inhabitants are in fact older and those over 65 represent almost 25% of the resident population, while younger groups tend to reside in larger municipalities.

#GOODSTORIES

Open Fiber in Manifattura Tabacchi

Manifattura Tabacchi is a 100,000 square metre former industrial space in the eastern part of Florence. After redevelopment it became a multifunctional centre that houses spaces for young creatives, a café and a coworking space, as well as areas suitable for exhibitions. Open Fiber laid fiber throughout the entire complex with a special project that saw the construction of a true FTTH network within the structure.

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62 Free-to-play video game developed by Respawn Entertainment and published by Electronic Arts. It aroused great interest among gamers worldwide, counting 10 million users in the first 72 hours after its release.

WHITE AREA COVERAGE OBJECTIVES

+ 7,000 municipalities

8.5 million real estate units

2022 RESULTS

4,690 small municipalities marketed

174 very white municipalities covered

A municipality characterised by depopulation and ageing is a place that risks being left out of the progress of development and digitisation that our country is facing. In this context, the work of Open Fiber is important: carrying out the Strategic Ultra Broadband Plan (or BUL Plan)[63] and the "Italia a 1 Giga" Plan[64] with the goal of bridging the digital divide can reverse the trend of depopulation and ageing of small municipalities and so-called "market failure areas". This process is complex and must be addressed gradually over time. In addition to infrastructures, in fact, it is necessary to create a system of digital skills and the development of a real digital culture in the population. In recent years, Italy has made many steps forward in the use of the Internet: according to Istat data, regular Internet use among Italians has increased by about 25% and a similar result is also observed in the number of families with access to the network (+28%). Despite this, if we look at the data by size of the municipality to which they belong, it is clear that the availability of Internet access is significantly lower in small towns and this is often associated with the scarce presence (or even the absence) of digital skills in small towns.

Aware of the challenge that lies ahead, Open Fiber continues towards its goal of reducing the flight of people and companies from small towns and the phenomenon of marginalisation for those born in the province: with the Ultra Broadband, in fact, every territorial and professional barrier can be eliminated and small entrepreneurs can contact and

63 The Ultra Broadband Strategic Plan aims to develop an Ultra Broadband network across the entire country with a focus on areas of market failure. Infratel interventions are aimed exclusively at white areas of the national territory, in accordance with EU guidelines and consistent with the outcomes of the Public Consultation for Telecommunication Operators for Ultra Broadband on the National Territory.

64 The "Italia a 1 Giga" Plan aims to promote investments in Ultra Broadband networks through public intervention to guarantee all users a connection speed in line with the European objectives of the Gigabit Society and the Digital Compass. "Italia a 1 Giga" is the first of the public works plans of the Italian Ultra Broadband Strategy being implemented within the framework of the National Recovery and Resilience Plan (PNRR), and envisages an allocation of around EUR 3.8 billion.

collaborate with larger realities, or make themselves known everywhere without the need to move. Thanks to optical fiber, for example, many digital professionals, such as graphic designers and creatives, have chosen to return to live in small towns where they can finally do their job exactly as they would in a large metropolis. The Ultra Broadband allows you to quickly send large files, support long video calls and advertise local beauties and products. Not only companies and small entrepreneurs, but also the community and the Public Administration, benefit from the advantages of the Ultra Broadband, thanks, for example, to the services that this technology enables, such as telemedicine, smart working or digitised public service.

Very White Municipalities Project
A study carried out by AGCOM in 2020 at the request of the Department for Digital Transformation (at the time Ministry of Technological Innovation and Digital Transition), identified the so-called "no-Internet" or "very white" areas, where a connection is not available even using ADSL technology. In Italy there are about 200 municipalities, located mainly in Piedmont, Molise, Liguria and Sicily. We know about 150 thousand total real estate units and about 186 thousand citizens who cannot use a web connection. A void that

must be filled as soon as possible, also in consideration of the challenges that the Nation has been committed to facing for some time now.

Most of the houses in the whitest areas are located on hilly or mountain areas (about 89%), where the route is particularly difficult and almost always there are no paths that can be redeveloped. Wiring the optical fiber network in the traditional way, i.e. with excavations and laying cables, is a procedure that is often too long or infeasible from a technical and economic point of view. Open Fiber has found the ideal solution in FWA (Fixed Wireless Access) technology[65], also known as Wireless Local Loop, which involves the use of radio solutions to cover the last mile to homes dispersed in areas with very low population density. Thanks to the creation of a radio link, in fact, it is possible to send the Ultra Broadband signal from one transmitter to another, allowing to cover long distances even without laying cables and to overcome obstacles, for example a mountain wall, which otherwise would require expensive and unsustainable interventions. Furthermore, due to its characteristics, Open Fiber FWA technology has a very low environmental and electromagnetic impact[66].

SMART WORKING FROM A SMALL MUNICIPALITY: AN OPPORTUNITY TO BE SEIZED

The possibility of smart working from a small municipality, guaranteed by the installation of the Ultra Broadband network even in small towns, represents a real opportunity for growth and recovery both for historic villages and for the people who live in them as it encourages their repopulation, thus creating new job opportunities.

The possibility of being able to navigate with a reliable, ultra-fast connection has made smart working a reality that is no longer restricted to large metropolises, but one that can be experienced anywhere, allowing one to work easily even from a well-lit desk overlooking historic, beautiful and vibrant medieval villages.

Being able to telework from a small municipality allows one to rediscover a slower lifestyle as well as a more relaxed working method, as the quiet life of the historic village becomes a faithful ally of mental well-being.

65 Wireless Point-to-Multipoint connection on licensed band that from the FWA site reaches the Terminal Station located at the single Real Estate Unit.
66 For more information on the environmental benefits of FWA technology, see paragraph 3.3 "Sustainable laying techniques".

Downstream of this acceleration in the connection of the Very White Areas (through transitory intervention with FWA), Open Fiber has provided, where possible, for the cabling of the FTTH network as established by the Infratel calls. Most of these works will be financed by the Company: a coverage has in fact been proposed while maintaining the cost of expenses equal to approximately 5 million euros. The Company is also working on creating backhauling connections – the radio-network connection – at its own expense and reusing Infratel backhauling. This is a necessary investment to break down the digital divide and promote a digital renaissance for a more inclusive society, now more than ever.

In line with the ambitious plan presented in 2020, Open Fiber has set itself the goal of reaching 179 municipalities. At the end of 2022, Open Fiber covered 174 municipalities[67], of which 148 with FTTH/FWA technology and 26 with STTH (Satellite To The Home) technology[68].

#GOODSTORIES

Morterone, Lecco, Italy's least-populated municipality

With 31 inhabitants registered as of 2022, Morterone in the province of Lecco is the least populated municipality in Italy. Thanks to the ultra-fast Ultra Broadband network built by Open Fiber, it can now surf at high speed to communicate with the entire world, tell its story and allow local businesses to grow, collaborate and enter an increasingly competitive market. Morterone is an excellent example of how an ultra-performing network provides enormous benefits to the population, especially in white areas that, once freed from the shackles of the digital divide, can be socially and professionally reborn.

Montecreto, Modena: fiber optics, an opportunity for mountain villages

Open Fiber connected the municipality of Montecreto, in the Modena Apennines: 8 kilometres of infrastructure were built, delivering residents and businesses an FTTH network with connection speeds of up to 10 Gigabits per second. "For mountain villages and for Montecreto", says mayor Leandro Bonucchi, "the arrival of fiber optics is an opportunity. We have reached a milestone that will make it possible to bridge the digital divide between the plains and the Apennines, making our mountains attractive to businesses and private citizens alike. This will enable the Montecreto area to launch important projects that make the most of resources, social sharing and technological innovation".

Pennabilli, Rimini: Open Fiber revitalises cultural heritage with fiber optics

Open Fiber has also arrived in Pennabilli, a town of around 2,000 inhabitants in the Romagna Apennines with picturesque views, surprising historical artefacts and an outstanding gastronomic tradition. The village is a unique blend of antiquity and contemporary history that, despite its cultural heritage that is even recognised by the Touring Club, before the arrival of fiber optics was severely penalised by the digital divide, as the more decentralised towns lacked a satisfactory connection or mobile service. Open Fiber's FTTH network connected 2,600 properties. Given the historical richness of the site, special care was taken to build the network. In addition to homes and businesses, a number of public buildings such as the Victoria Theatre, the Mathematics Museum and many schools in the area were cabled.

San Bartolomeo in Galdo, Benevento, the "jewel" of fiber optics

The municipality of San Bartolomeo in Galdo, in the province of Benevento, is a fiber optic "jewel". With 4,091 buildings cabled out of a total of 4,612 inhabitants, the small town in Campania boasts fiber optic coverage that is close to 100%. And the area is reaping the benefits, from schools to companies and even the municipal administration.

Pentidattilo, Reggio Calabria: ancient village at the centre of a regeneration process

An ancient village long abandoned, now at the centre of a regeneration process in the name of hospitality and traditions. Pentidattilo, a hamlet of Melito Porto Salvo at the southern tip of the peninsula, is at the centre of a technological innovation process triggered by the start of work on an Ultra Broadband network under the BUL Plan.

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67 Compared to the 196 municipalities reported, 17 (following an inspection by Infratel) were already covered by previous public interventions. The new plan was therefore structured on 179 municipalities.

68 The STTH (Satellite To The Home) Service allows broadband connectivity to be provided via satellite technology in the most remote areas of the national territory. The service is provided by Open Fiber to its partner operators through the agreement signed with Telespazio. For more details see paragraph 2.5.3 "Innovation Lab".

ROCCHETTA LIGURE

An important example is the intervention carried out by the Company, thanks to the partner operator WINDTRE, in **Rocchetta Ligure**, Alessandria, where the first Client on the FTTH network of the very white areas of Piedmont was activated. Today, the citizens and businesses of Rocchetta Ligure, a very small town in the Borbera Valley (Val Borbera), can finally benefit from the latest generation digital services by exploiting the infrastructure built by Open Fiber both in FTTH mode and with FWA technology.

Over 370 real estate units have been connected in Rocchetta Ligure, partly through a new fiber-optic network, while the most difficult-to-reach homes already have the possibility of activating a connection in FWA mode, a situation far removed from when the municipality did not have good fixed and/or mobile connectivity.

4.1.3 Relations with local bodies and authorities in permitting activities

In Italian territories with low population density, the so-called market failure areas or white areas and falling within the so-called **C&D Cluster**, the Ultra Broadband Strategic Plan (Banda Ultra Larga, BUL) sets out that for each municipality 10 to 15 permits must be issued to allow the start of network installation activities. Considering the number of municipalities in which Open Fiber operates, the volume of authorisations to be requested would be very high. For this reason and in order to optimise the time required to issue the authorisations, in some regions the Company, in collaboration

GIGA ITALY PLAN PERMITTING

3,881

municipalities impacted by the "Italia a 1 Giga" Plan (grey areas – industrial districts)

5 webinars and **2**

round tables held between November and December 2022

About **300**

municipalities involved in the first round of meetings

PERMITTING

About **200**

Conferences of services in 5 years with municipalities in C&D Clusters (white areas)

About **230**

agreements with large and medium-sized municipalities (black areas)

with the local authorities, organises cycles of **service conferences** not only to speed up the permitting aspect, but also to express further needs expressed by the local administration in charge of the infrastructure construction project. This activity is what sets the company apart: suffice it to say that over the last five years around **200 service conferences** have been held, each of which has involved all the numerous bodies directly affected by the project.

There are numerous forms of coordination specific to each territory managed by the single regions (steering committees, service conferences, regular meetings) in which the main stakeholders of the project are involved in order to share objectives and solve possible criticalities. In addition, in some regions, cycles of conferences with all the municipalities that took part

in the various service conferences in previous years are under way, with the aim of monitoring the progress of the project, reporting news and solving any problems.

In areas with a high population density (called black areas and falling within the so-called **A&B Cluster**), the Company – before starting work – opens discussions with the municipal administration in order to share the activity plan and the operating procedures for creating the infrastructure. These discussions often lead to the signing of a **framework agreement** between Open Fiber and the municipality which formalises the above-mentioned issues. Since the start of its activities, Open Fiber has signed around **230 framework agreements** with large and medium-sized municipalities.

In May 2022 Open Fiber was awarded 8 of the 15 lots of the tender launched by Infratel for the **"Italia a 1 Giga" Plan**, one of the projects of the Ultra Broadband Strategy financed with funds from the National Recovery and Resilience Plan (PNRR). The subject of the tender launched by Infratel in January 2022 is "the granting of public contributions for the financing of investment projects for the construction of new telecommunications infrastructure and related access equipment capable of providing services with a capacity

of at least 1 Gbit/s download and 200 Mbit/s upload". The eight lots awarded to Open Fiber coincide with the regions of Sicily, Apulia, Campania, Lazio, Tuscany, Lombardy, Emilia-Romagna, Veneto and Friuli-Venezia Giulia and entail works in about **4,000 municipalities**. In order to facilitate permitting, and given the number of municipalities impacted by the plan, in cooperation with the regional ANCIs and some regional governments Open Fiber launched a round of initiatives aimed at involving the municipalities affected by the project to inform them about the characteristics of the plan and how Open Fiber will go about its task. Specifically, several discussion sessions were organised in the form of webinars and round tables.

In addition to the dedicated permitting procedures and channels, there are some cross-cutting activities that the Company carries out for all areas where it operates. The relationships, based on dialogue and discussion, that Open Fiber nurtures with the superintendencies – aimed at the protection of heritage in terms of archaeology, monuments and landscape – and with the companies managing infrastructure and public utilities – aimed at sharing the opportunity to reuse an existing infrastructure for the laying of fiber – are particularly important.

4.1.4 Smart City: cities covered by the Open Fiber network

Global urbanisation is one of the most significant developments of the 21st century and has posed great challenges. Indeed, the process of moving more than half of the world's population from rural areas to cities, centres of global economic prosperity, has made them responsible for significant environmental impacts and has affected people's quality of life.

Turning cities into Smart Cities can bring concrete benefits to the public in terms of improved liveability and safety, efficient public services and reduced environmental impacts.

The idea behind the Smart Cities of the future is that of intelligent cities that put the resident at the centre in a way that is revolutionary compared to the past, based on four pillars that are closely interconnected: **infrastructure, sensors,** service **delivery platform** and **services**. In order to increase people's safety and efficiency, all while taking into account eco-sustainability and the territory, the mere presence of infrastructure is no longer sufficient. What is needed is a sensor system that analyses people's activities, from traffic to video surveillance, and then provides the best service available through dedicated platforms. This interactive automation system can exist thanks to the Internet of Things (IoT), which has also enabled objects to connect with each other and communicate. Since the interconnection of infrastructure, services and communication platforms with residents rely on the internet, cities need to be equipped with a **reliable connection** capable of **supporting the data traffic** generated by millions of devices and people at the same time. Thanks to the efficiency of the polymeric materials that make up fiber optic cables and to the high transmission speed, **FTTH connectivity** is

of fundamental importance for modern Smart Cities, being the primary means of transforming cities into intelligent, functional and interconnected realities equipped with services and infrastructure capable of interacting with human beings and their needs to the point of improving their existence.

A widespread diffusion of Ultra Broadband, a reliable and superfast connection, and the dissemination and availability of new technologies such as IoT are indispensable for the digital evolution of cities throughout the country, to achieve a high level of sustainable development and a better and inclusive quality of life for the public at large.

In Italy, Open Fiber, thanks to the optical fiber, allows to enable some services that determine advantages for Smart Cities. In particular, the two areas that have found greater application to date have been the **efficiency of mobility** and the **safety of citizens**.

Thanks to innovative digital solutions, it is possible to have:
- The rapid identification of events dangerous to public order (fights, facial recognition of criminals and/or missing persons, recognition of abandoned objects, etc.).
- The reduction of parking times and the decongestion of traffic thanks to intelligent signalling of free parking spaces in real time and the installation of smart traffic lights.
- The reduction of electricity thanks to smart lighting poles capable of reducing the intensity of lighting when there are no vehicles or pedestrians.
- The optimisation of road maintenance services by concentrating the interventions (cleaning roads/sidewalks, asphalt maintenance, etc.) where it is most necessary.
- The efficiency of urban waste management services by optimally scheduling waste collection interventions

and identifying negligent behaviour (for example, abandonment of waste outside the collection areas).

The FTTH network of Open Fiber has already proved to be fundamental for the growth of important metropolitan realities and small municipalities throughout the national territory.

As in the case of **Bari**, which is preparing to become the first Smart City in the South. This was made possible by the partnership signed between the municipality of Bari and Open Fiber in the name of technology, aimed at making the Apulian capital even more digitalised and secure. The works for the construction of the FTTH network are finished and will bring a load of news for the city: in addition to the optical fiber right into the homes of all the people of Bari – currently 175 thousand real estate units are reached by the 1 Gigabit per second FTTH network of Open Fiber. Citizens can thus benefit from new and innovative services that provide for the creation of an advanced monitoring system consisting of 100 strategic points and managed through the operational centres of the Municipal Police

Command and the Data Processing Centre of the municipality. The main parks and squares in the city of Bari will have a free-access Wi-Fi system by 2023. This initiative is part of the project entitled "Bari service hub, intelligent public lighting integrated in a smart grid and Bari Smart City" approved in 2020 by the municipal council, the project aimed at expanding Wi-Fi zones in the city, especially all parks and squares, including Piazza Moro and the municipal offices. In addition, projects are planned to build a large urban infrastructure interconnecting the video surveillance network and public lighting with a public connectivity network. The latter is based on the "Fiber to Objects" project for a fiber optic network in the urban area, guaranteeing Ultra Broadband connectivity at the strategic junction points identified (secondary cabins of the electricity distribution grid), all managed through the operational centres of the municipal police headquarters and the municipality's data processing centre.

This is also the case for **Salerno**, which is preparing to launch an ultra broadband network that will strategically connect numerous municipal buildings while at

ALESSANDRIA TOWARDS THE ENHANCEMENT OF PUBLIC SECURITY

The municipality of Alessandria intends to **improve the public security service** by keeping specific areas of the territory.

Open Fiber and Accenture, taking advantage of the current infrastructure available in the area (cameras and optical fiber connection), **proposed to the municipality to start a** three-month **pilot project** in a limited area based on new digital solutions in the **Smart City** context.

In particular, the project involves the use of **two use cases based on the video analytics capability**:

- Identification of dangerous behaviours (e.g. fights), through monitoring activities and the possibility of real-time alerts and notifications sent to the competent authorities.

- During the restrictions due to the Coronavirus pandemic, identification of dangerous gatherings, monitoring social distancing and reporting cases of non-compliance.

Furthermore, Open Fiber and Accenture (supplier of the Smart City platform) have launched a proposal for the installation of **smart traffic lights**, which will make it possible – in an innovative but user-friendly way – to monitor pedestrian and vehicular flows and notify incorrect behaviour in real time.

the same time ensuring cost savings and greater protection against cyber attacks. By the end of the year, the various branches of the municipal offices will be equipped with a single intranet from which it will be possible to manage and monitor the flow of data in real time. The project will save approximately €300-400,000 per year in telephone bills.

Open Fiber is also investing in small municipalities such as **Gemona del Friuli**, where it has allocated around 2 million euros to create an optical fiber network, making the city totally digital through the efficiency of the Ultra Broadband, as well as making the connection available

in ultra-fast fiber in 50 municipal-owned buildings in order to enable Smart City solutions on telemedicine, cloud computing, online streaming of HD and 4K content, and access to advanced Public Administration services. The cities where traditional networks and services are made more efficient, through the use of digital and telecommunication technologies, for the benefit of inhabitants and businesses, must be equipped with a fast and reliable connection capable of supporting the data traffic generated by millions of devices and people at the same time. An ambition that becomes reality thanks to the FTTH connection, characterised by the intrinsic efficiency of the materials that

THE VILLAGE OF THE FUTURE: INNOVATIVE TECHNOLOGIES FOR SMART CITIES

Pitigliano, also nicknamed "Little Jerusalem", is a small village located in the heart of the Tuscan Maremma, which has already received important awards as one of the "Most Beautiful Villages in Italy" and was recently awarded an "Orange Flag" for the three-year period 2021-2023.

Since 92% of the municipal area of Pitigliano is covered by Open Fiber's fiber optic network, a collaboration between ENEA, Open Fiber and the municipality of Pitigliano was stipulated at the end of 2022 to test and develop innovative technologies that support the Public Administration in Smart City processes. The specific initiatives envisaged in the pilot project include energy efficiency and structural monitoring of buildings, telemedicine services and related schools, as well as activities to ensure the security of the territory and its resilience to natural hazards.

SMART DISTRICT: UPTOWN!

A town where technology and nature coexist in perfect harmony, where a heart of fiber optics pulses beneath the streets and the dwellings are environmentally sustainable, air-conditioned and carbon-free: this is not a science-fiction utopia, but a postcard of UpTown. This is the new Milanese district at the centre of an urban regeneration project, led by Euromilano and based on three pillars: digital technology, sustainability and good quality of life. Italy's first Smart District is a neighbourhood designed and built to offer residents a technologically advanced environment, where Ultra Broadband is part of the urban fabric itself so as to simplify every aspect of daily life thanks to quality digital services that are always available.

But what exactly does a Smart District consist of? From a technical point of view, we could call it a neighbourhood that is already connected via FTTH, where the ultra-fast network is a basic requirement. IoT, cloud computing, home automation or video surveillance will therefore naturally be possible thanks to such a state-of-the-art infrastructure, but the district's strength is certainly its matrix based on innovation, sustainability and sociality. UpTown is not just ultra-fast internet but a mixture of technologies that, when integrated, result in an area where eco-sustainability and innovation go hand in hand. The district is equipped with a geothermal network for summer cooling and completely carbon-free winter district heating that does not use gas for heating water or food.

make up the optical fiber cables and by a transmission speed that reaches 1 Gigabit per second (Gbps).

One of the technologies for the **digital transformation** of cities most enabled by optical fiber is the IoT, the sensor system applied to objects and connected to the Internet which, in the not-too-distant future, will have an increasingly significant impact on public services and allow to generate new governance and revenue models. By creating innovative and personalised services in the field of mobility, public lighting and more, the Internet of Things aims to improve the quality of life of users and achieve more by wasting less.

Smart Cities use the IoT to collect data in real time in order to understand how the demand and needs of citizens are changing and to respond with faster and cheaper solutions. It is no coincidence that in 2020 and 2021, when the entire country was forced to restrictive measures to combat the Coronavirus pandemic, were characterised by the provision of functional services to the institutional and administrative activities of the municipality of Gemona del Friuli, such as the electronic portal, cloud computing, sensor systems for environmental remote sensing, smart working, and many other opportunities in the health, information and education sectors.

4.1.5 Open Fiber for the protection of the historic heritage

Fiber optic cabling can offer unexpected surprises. In a country with a history stretching back thousands of years like ours, it can happen that, during excavations for cabling and laying fiber optic cables, one comes across real **treasures**, such as **archaeological finds** or **ancient buildings**. When this happens, Open Fiber is committed to protecting them by contacting experts in the field who can analyse and assess the newly discovered site, and then continuing the work without interruption by modifying the original cabling plans so as not to damage the newly discovered heritage.

Gela: a museumisation project funded by Open Fiber

What happened during works to connect the **municipality of Gela** (CL) to Open Fiber's FTTH network is perhaps the perfect example of attention to historical and cultural heritage: during the works

in the area artefacts from the period between the 7th and 5th centuries BC came to light, including a unique necropolis. The site dates back to the time of the earliest Rhodian-Cretan settlers who settled in the area and the ten burials found belong to a children's cemetery, dating from around the 6th century BC. Together with the graves, an altar for funeral rites and various items for burial were also found.

Open Fiber, together with the archaeological surveillance team of the Caltanissetta Superintendency, rewrote the intervention plan to make the most of these discoveries of enormous historical value, transforming the necropolis of Gela into a veritable open-air museum and greatly enriching its archaeological heritage with obvious benefits for the city and its visitors. The work has been financed entirely by Open Fiber, which has allocated around 170,000 euros to the project.

The archaeological discoveries were widely reported in the national, local

and even foreign press, given the extraordinary nature of the project, which was carried out in the most congenial way for Open Fiber, combining tradition with new technologies.

Piacenza: the remains of the ancient city
Even in the city of **Piacenza**, where Open Fiber is investing EUR 14 million to wire around 40,000 real estate units, work has brought to light the remains of the ancient city. The findings of urban archaeology have made it possible to study in depth some historical aspects of the urban layout within the sixteenth-century city walls, and more precisely in the north-western and north-eastern quadrants along the main Roman roads that cross in the central-northern part of the city. By juxtaposing the findings from the excavation with historical maps, it has been possible to recognise the curtain walls that surrounded the Palazzo Madama complex and its gardens. These discoveries are of particular value given their complex stratigraphy: the discoveries bear traces of different eras and thus make it possible to recreate the history of a city through the particular stylistic and architectural characteristics of the families that made the city great.

Other findings
Numerous discoveries have been made during the course of Open Fiber infrastructure construction. In **Garaguso**, in the province of Matera, a tomb dating back to the 7th or 6th century BC came to light, with an astonishing assortment of grave goods consisting of numerous vases and a sword complete with fibula. **Teramo**, in Abruzzo, on the other hand, took us back whole millennia, first with a floor from the Roman imperial era, then with the discovery of a skeleton dating back to the Neolithic period. Not to mention **Palermo** and its underground canal, which in the Middle Ages was used to bring water to the city centre.

4.1.6 Partnership and innovation in support of culture

Partnership with academia
Open Fiber collaborates with some Italian academic institutions of excellence, through a virtuous circuit of ad hoc partnerships, through which it promotes initiatives and activities for masters and specialised courses.

Also in 2022, collaborations were established with different technical-engineering oriented and soft masters. The activities involved co-designing teaching programmes, classroom lectures and presentations, internships, project work and scholarships.

As part of the partnership initiatives with the main universities already consolidated by Open Fiber, the collaboration with the world of scientific research continues through the funding of a scholarship for the 1st National Industrial PhD in Artificial Intelligence promoted by the University of Pisa.

This three-year cooperation is aimed at enhancing the specific skills related to the implementation of data science and big data techniques, which are essential to allow Open Fiber to become a data-driven organisation.

Moreover, in 2022 Open Fiber financed another research project through the award of a scholarship for a national PhD in Information Technology and Electrical Engineering in partnership with the Federico II University of Naples.

Teaching Revolution
As part of School-Business System initiatives, Open Fiber joined the two-year Teaching Revolution project with the aim of supporting the development of school faculty, key stakeholders who influence the lives of young students, the professionals of the future.

The programme envisages the construction of an "educational alliance", a fruitful and effective relationship between company and teachers with the aim of mutual sharing and listening to each other's needs. Initiatives include peer mentoring and teacher training with a view to upskilling and reskilling the expertise required by the working world.

The project is based on an action-research project that aims to further study basic assumptions, and in particular to analyse new teaching methods in the field with a group of teachers who are personally committed to increasing their awareness of what is happening in their working context and to introducing radical changes in their way of teaching.

The objectives of the project are to increase the **reputation** of the school teacher and to train current and aspiring teachers to be the **teachers of the future**.

The Teaching Revolution project involved the teaching staff of schools in eight regions with a total of 15 institutions, 36 teachers and 20 aspiring teachers for 68 hours of training.

Open Fiber and ELIS: PCTO work-study programmes
Five Italian cities and the same number of schools, around **250 students** involved, **12 trade instructors** from different professional backgrounds and over **70 hours of training delivered** through in-person meetings in the classroom and remotely. These are the final numbers of the **PCTO** work-study programmes for the 2021/2022 academic year, the Open Fiber training initiative carried out in cooperation with ELIS, now in its fifth year.

The sixth edition for the 2022/2023 academic year started in the second half of 2022. From Paleocapa Institute in Bergamo to IIS Viola Marchesini in Rovigo, ITI Ferraris in Scampia in Naples to ITI Bramante Genga in Pesaro and ITI Antonio Monaco in Cosenza, the fourth and fifth year high school students participated with interest in meetings with the company and the relevant trade instructors, during which they were able to ask questions and interact with the organisation's professionals. The young students listened to a variety of experiences and testimonies from other professionals invited to the meetings, and also cleared up any doubts about the range of choices available to them. Moreover, in 2022 a number of scholastic internships were also organised, where students had the opportunity to work alongside trade instructors and gain direct experience in the working world.

Italian Academy of optical fiber
With the support of leading telecommunications companies, Open Fiber and ELIS are committed to providing training courses for splicers, assistant technicians and FTTH fiber optic technicians to train professionals in the sector, also for young high school graduates who wish to enter the world of fiber optics. Thanks to the participation of the network of companies involved in the project, past editions have recorded a job placement rate close to 100%.

Technical School
Open Fiber's Technical School pilot project was set up to support partner companies in training and professional qualification processes in order to meet the need for skilled labour. In fact, Technical School offers training courses on the professional skills most in demand by companies in Italy with a focus on Lombardy and Piedmont (a need for 150 people in six partner companies).

Overcoming the cultural digital divide: Open Learning platform

The digital divide is not only due to geographical or local factors but can also stem from the inability of citizens and businesses to make the best use of existing and available innovative and technological services. Rapid technological developments force people to constantly update and improve their personal and professional know-how. Unfortunately, not everyone manages to bridge this gap alone. In fact, according to the DESI 2022 index, in Italy only 46% of people have at least basic digital skills (54% in the EU), compared to 42% a year earlier (56% in the EU), and only 23% have digital skills beyond basic digital skills (26% in the EU), compared to 22% a year earlier (31% in the EU).

For this reason, Open Fiber has set a new ambitious goal: to help all those who want to improve their skills in telecommunications and digital technology to achieve their goals. That is why it has launched a project that makes the Company's skills and knowledge fully available to anyone wishing to train in

#GOODSTORIES

The cabling of the Padula Charterhouse

As part of the BUL Plan, managed by MISE to cover the country's less digitised areas, Open Fiber cabled the Padula Charterhouse, a Unesco heritage site. It is the largest Carthusian monastery in Italy and among the largest in Europe. Open Fiber's goal was to equip the site with a state-of-the-art network to ensure important technological innovations. The challenge was to work with the necessary care and attention to detail when laying the fiber optic cable in order to preserve site's historical and cultural value, in close cooperation with the superintendency and other insiders.

the sector, thanks to the **Open Learning** platform: an online free and specialised training tool, whose courses consist of clear and comprehensive video lessons. Using the platform is very simple, the user simply connects to the web, accesses the courses directly via the browser and chooses the one that best suits his or her needs:

- Network fundamentals: for newcomers in the field or those who feel they need to strengthen their basic knowledge, a guide to the world of fixed and mobile networks, from the basics to the analysis of lesser-known technologies such as FWA.
- Advanced network systems: for those who already have a basic knowledge of telecommunications infrastructures.
- Digital & Information Management: for anyone who wants to expand their professional know-how in digital terms with respect to collaboration between teams, branding, data management, content creation, corporate culture and internal security.
- YouDigital: tailor-made tests for those who don't know their starting profile, testing their digital knowledge.

4.1.7 Fiber sensing

The exploitation of the existing fiber network already installed worldwide for TLC purposes (both in long-haul transport and medium-range access) could add significant value to the infrastructure, providing reliable embedded optical systems for geotechnical, environmental and artefact surveillance in different urban and regional areas. Fully TLC-compatible fiber sensing strategies (in terms of wavelength, power, crosstalk, etc.) would allow to exploit the pervasive penetration of telecommunication networks, from the most remote geographical areas of the planet to the end-users in our cities.

This dense metropolitan TLC fiber represents a distributed optical sensing network that provides real-time monitoring of mechanical and thermal disturbances affecting the network, as well as the occurrence of stress events in civil infrastructures and buildings. Dedicated extended optical fiber could add further value by monitoring specific parameters such as strain, vibration, acoustic and ultra-acoustic waves.

GAMING AND SOCIAL ENGAGEMENT: THE FIGHT AGAINST CYBERBULLYING

During COMICON 2022 there was no lack of moments dedicated to raising the awareness of the many young participants on a topic that is as topical as it is of great social impact: in fact we talked about e-sports, cyberbullying and virtual violence.

The subject was presented by Luca Massaccesi, Olympic medallist in Barcelona 1992 and President of the National Observatory on Bullying and Youth Distress, and Emanuele Blandamura, former European boxing champion.

"*The biggest fear for 75% of gamers is cyberbullying. We must all try to help young people not to be overwhelmed, to know how to deal with those in the game who taunt, mock, push away. Because for all intents and purposes this behaviour is a form of bullying that must be fought. For these and many other reasons gaming should not be demonised*", emphasises Emanuele Blandamura, "*but rather nurtured. It's a sector that helps us to live, to be in contact with people outside our country, to form character, to educate our language: it allows us to experience a universal brotherhood that must be protected*".

Relevant use cases in this field include:

- Network health monitoring against unpredictable damage: this activity is complementary to conventional OTDR techniques and focuses on damage prevention and early warning.
- New services for early prediction and detection of erratic or catastrophic events (e.g. natural and man-made events) using optical fiber networks installed as distributed sensors.
- Detection of seismic waves in the event of earthquakes.
- Monitoring and supervising large civil works such as embankments and trenches for motorway, railway and pipeline systems.
- Monitoring and supervising large infrastructures such as bridges, viaducts and tunnels and large industrial plants in general.
- Geo-monitoring landslides, rocks, dykes and in general the geological state of the territory.

Meglio Project

Open Fiber, in collaboration with BAIN, the INGV (Istituto Nazionale di Geofisica e Vulcanologia – National Institute of Geophysics and Volcanology), the INRIM (Istituto Nazionale di Ricerca Metrologica – National Institute of Metrological Research) and Metallurgica Bresciana S.p.A., concluded at the end of 2021 the **MEGLIO** Project (Measuring Earthquakes signals Gathered with Laser Interferometry on Optic Fibers), an experimental project to create a **fiber sensing** system for the detection of earthquakes on the national territory, thanks to the optical fiber that Open Fiber is building throughout Italy. This project will give INGV the opportunity to optimise its measurements by reaching areas where normal sensors do not yet arrive.

In the event of an earthquake, the optical fiber is stretched almost imperceptibly (a thousandth of a millimetre) due to the movement of the ground in which the

THE EXPERIMENTATION OF THE MEGLIO PROJECT

The two Open Fiber sites of **Ascoli Piceno** and **Teramo** – territories with a high probability of seismic events as indicated by INGV[69] – were chosen for experimentation. Two ultra-stable lasers (one for each site) designed by INRIM were installed there.

In this phase, the signal transmitted and received by the laser after initial on-site data processing was subsequently sent to Open Fiber's servers via the infrastructure already set up as a BEA (Business Ethernet Access) service.

In order to identify seismic events, the data were first analysed and processed by web application with advanced algorithms such as Artificial Intelligence (AI), and finally examined and validated by INGV.

The system was able to detect external interference caused by seismic waves both in the global and national area, as well as in the Mediterranean area. Earthquakes with magnitudes from 2.6 to 4.1 were validated.

The probability of detection of seismic events is shown in the graph.

This experiment proves once again that the far-reaching and capillary optical fiber infrastructure is a useful tool not only for data transport, but also for countless technological applications such as, in this case, earthquake monitoring.

69 Istituto Nazionale di Geofisica e Vulcanologia.

cable is laid. This mechanical action causes a phase change in the light signal that can be measured with extreme precision. The variation data can be transported even thousands of kilometres away and, once processed, indicate exactly where it originated, its intensity and other parameters.

The advantages of the optical fiber over traditional point-based detection systems (seismographs placed in areas considered to be more at risk) are countless:

- Capillary spread throughout the country of the optical fiber network, which becomes a single sensor capable of monitoring ground movements and allows accurate localisation of the epicentre.
- The speed at which light signals propagate through it, providing valuable and highly accurate real-time information on the smallest seismic signals.
- Immunity from electromagnetic interference and resistance to a wide range of temperatures (-100°C to 300°C), high pressures (10,000 psi) and mechanical stress.
- Adaptability also to submarine applications, which are currently not covered by the experiment.

The plan involved the design, manufacture and installation of ultra-stable laser sensors, deployed in pairs for each section of fiber, all ensuring a coverage of hundreds of kilometres. The data collected was made available on the web application interface, to summarise the data and make them easy to use. The application therefore makes it possible to keep seismic activity in the area surrounding the identified portion of the optical fiber under control and to analyse the information through a mathematical-statistical system of Artificial Intelligence (machine learning) that guarantees immediate transmission and accurate monitoring. Once the event was identified, it was verified by INGV.

FaaS: Fiber as a Sensing
FaaS (Fiber as a Sensing) is a project carried out in collaboration with PoliTo (Turin Polytechnic), SM Optics and INGV (Istituto Nazionale di Geofisica e Vulcanologia, National Institute of Geophysics and Volcanology), with the aim of finding an alternative and/or integrative solution to the MEGLIO project in order to improve and maximise the use of the existing infrastructure to offer innovative and alternative services. The idea is to use the telemetry parameters already existing in the telecommunications nodes for network management with the aim of developing an environmental monitoring framework. This approach not only validates the operator's infrastructure, but also makes it possible to develop services with a strong social impact.

#GOODSTORIES

The Calabrian skyscraper: optical fiber to monitor earthquakes

Optical fiber is not just about surfing the internet faster. This technology can in fact act as a sensor to detect what is happening along the connection, with a very high resolution in frequency, space and time, not achievable with conventional sensors. One example is the Skyline in Cosenza: built in recent years, it is one of the tallest buildings in southern Italy, a 22-storey skyscraper housing offices and private homes. The Skyline is just the beginning. Indeed, Open Fiber has invested 90 million euros, 60 of which privately, to wire the cities of Cosenza, Rende, Reggio Calabria and Catanzaro, the remainder being the public plan for the market failure areas, i.e. less densely populated areas of lower economic interest. The objective of the infrastructure is to bridge the digital divide by providing ultra-broadband connectivity services in Calabria.

Based on a preliminary study and state-of-the-art scientific research, it has been shown that the Differential Group Delay (DGD) parameters, linked with Polarisation Mode Dispersion (PMD) and States of Polarisation (SOP) measurable on the optical interfaces on the link, are responsive to the physical stresses experienced by the fiber.

4.1.8 Initiatives for communities

Open Fiber supports people and the territory by promoting projects and initiatives aimed at encouraging the economic and social growth of the community in which it operates. In 2022, the main initiatives in favour of the community concerned the themes of innovation, sustainability, digitalisation, support for local businesses and fighting inequality.

Prison Work Programme at Rebibbia Prison
Open Fiber, in partnership with Open Fiber Network Solutions, has joined an initiative promoted by the Ministry of Justice and the Department for Digital Transformation for the professional reintegration of prisoners. To this end, Open Fiber launched a social inclusion pilot project in 2022 with the Rebibbia Prison in Rome for learning fiber optic cabling skills. The aim is to create a qualifying job opportunity for inmates in the telecommunications sector, offering education as part of their rehabilitation while also contributing to the country's digital development.

Indeed, selected inmates participated in a 160-hour training course for the professional qualification of fiber-optic splicing technician and some of them will be placed within the Open Fiber Network Solutions sites.

Tevere Day
Open Fiber sponsored the fourth edition of the event dedicated to the enhancement and protection of Rome's river, **Tevere Day**.

The aim of the event is to draw the public's attention to the needs of the river and to make people understand, through cultural routes, sporting events and entertainment, that the Tiber is a green, liveable and healthy park in the city.

Fiabaday
Open Fiber sponsored the 20th edition of the **National Day for the Elimination of Architectural Barriers – FIABADAY**, organised in collaboration with the Italian Prime Minister's Office and the General Command of the Port Authority Corps. The awareness campaign, entitled "**Let's break down the barriers of indifference**", promotes the importance of a culture of accessibility.

Open Fiber and YEP against the gender gap
Open Fiber is continuously stepping up its commitment to promoting inclusivity in all its forms and bridging the gender gap, which is why in 2022 it renewed its partnership with the Ortygia Business School Foundation, supporting the fourth edition of **YEP** (Young Women Empowerment Programme), a mentoring programme for female empowerment aimed at female students enrolled in business and STEM faculties in the most important universities in Southern Italy. The aim of this training programme is to enhance female talent by acquiring skills and tools to help them face the world of work with greater awareness.

The 6-month pathway, with plenary events and one-to-one meetings, allowed the girls to enjoy individual support from volunteer professionals from the initiative's partner companies.

Ingenio al Femminile Thesis Award
Ingenio al Femminile is a project promoted by the CNI (National Council of Engineers) with the aim of contributing to the promotion of female talent and professionalism in engineering. It also represents a concrete institutional response

to one of the goals set by the UN 2030 Agenda for Sustainable Development. Specifically, Goal 5: achieve gender equality and empower all women and girls.

The authors of the best dissertations received a cash prize and will have the opportunity to carry out an internship at the supporting companies. In addition, the curricular database will be made available so that the companies themselves, on the basis of their own needs, can select profiles for further internships.

2022 Race for the Cure
In 2022, Open Fiber was once again a partner of the **Race for the Cure**, which was held on the 8th of May. A Sunday dedicated to health, sport and wellbeing to raise awareness and funds to finance educational and support projects for women fighting against breast cancer.

The New@School Project
Open Fiber is continuing its sponsorship of the The New@School project in partnership with the daily newspaper *La Nuova Sardegna*, the goal of which is to create a virtuous synergy between Sardinia's schools and the region's most representative companies through the reading and study of the newspaper in high school classes, through the distribution of daily copies, in order to provide students with elements of analysis of the journalistic text that are useful not only for preparing for the high school leaving examination,

but also to approach the working world with a critical eye and a greater awareness of the social, economic and cultural reality they live in and that they will be called upon to become a part of.

Open Fiber for Ukraine
What makes the difference between a truly united team and a simple group of people working together is the sharing of an underlying ideal, a roadmap that guides each team member towards a shared goal. Open Fiber for Ukraine is the company's way of contributing to the current emergency. Each employee had the opportunity to donate working hours/vacation days by donating the desired amount and deducting it directly from their monthly salary.

Open Fiber matched the amount reached through such employee donations and the entire proceeds were donated directly to the UNHCR, the United Nations Refugee Agency.

Solidarity is in our blood
Open Fiber took part in Blood Donation Days promoted by the GEDS association (ENI Group Blood Donors) and the Bambino Gesù Children's Hospital in Rome, with the aim of promoting the periodic donation of blood in the spirit of pure volunteerism.

Open Fiber for art and sport: Troisi Prize Marefestival
Promoting cultural and inclusive initiatives is an effective means of developing a more aware society. From Milan to the Aeolian Islands, Open Fiber's ultra broadband network helps people to talk and meet. This is what happened in Salina at the Troisi Prize Marefestival, now in its 11th edition. On 23-25 June, the event hosted various activities, including screenings of feature films, shorts and documentaries, meetings with actors and directors, concerts, interviews and book presentations. It is an event that represents a major cultural happening for the entire archipelago, and this year saw the participation of major figures from the seventh art.

Thanks to Open Fiber, Salina is now for all intents and purposes a smart island and citizens are able to perform many tasks that were previously impossible due to the digital divide.
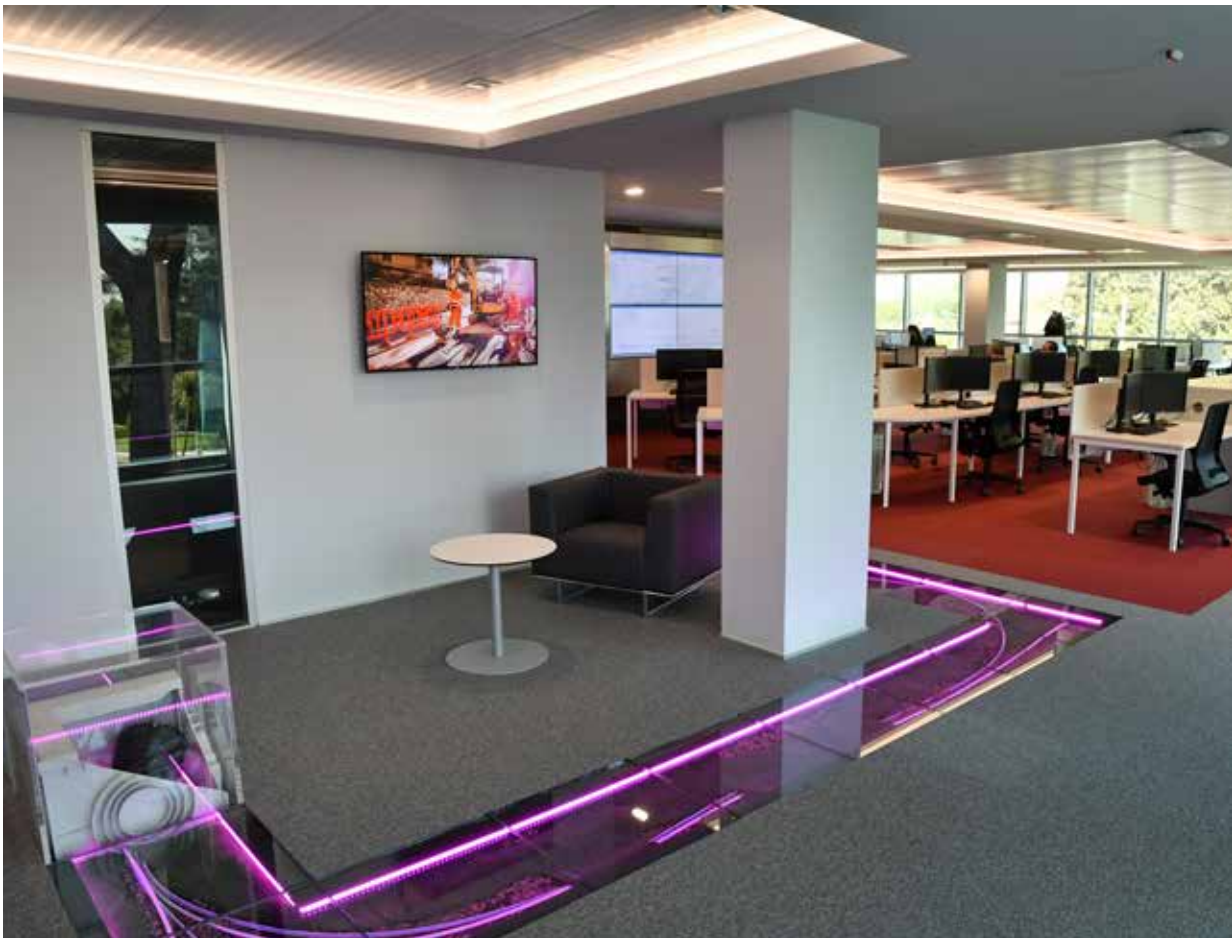
4.2 DIGITISATION

Creating value and generating a positive impact on society means making a change in people's lives, in terms of health and the goals of cultural growth and personal fulfilment. Open Fiber, leveraging its assets and expertise, has set itself the main goal of overcoming the digital divide, both infrastructural and cultural. This gap can cause socio-economic and cultural repercussions and lead to the exclusion of population groups from society that do not have the possibility to connect or can do so only to a limited extent.

The Strategic Plan for Ultra Broadband "Towards a Gigabit Society", approved on 25 May 2021 by the Interministerial Committee, aims to promote the development of fixed and mobile telecommunications infrastructure by defining the actions necessary to achieve the digital transformation targets set by the European Commission in 2016 (Gigabit Society) and 2021 (Digital Compass).

The National Recovery and Resilience Plan (PNRR) envisages that 27% of the total resources earmarked for Italy will be dedicated to the digital transition. In this context, Digital Italy 2026 was born, the national strategy developed to promote digitisation that revolves around two main axes: the digitisation of the public administration and the deployment of ultra-fast networks.

Within this strategy, funding is to be allocated for activities such as innovation, security and digitisation of public administration services, digital cultural infrastructure, e-Justice, tourism and digital health and telemedicine.

More specifically, the systemic framework devised by Italy has five objectives:

- Dissemination of the digital identity.
- Reduction of the digital skills gap.
- Shifting the majority of Italian public administration services to the cloud.
- Effective online use of most essential public services.
- 100% coverage of Italian households and businesses with Ultra Broadband networks.

The infrastructure that the company is building throughout the country is aligned with the five objectives, and aims to enable innovative services that promote equality between users in terms of access to cultural and health resources and services, thereby contributing to the reduction of social inequality in our country.

Open Fiber's impact on people can be found in particular in three areas of intervention that concern:
- The plan to reach primary and secondary **schools** throughout Italy, including the facilitation of digitisation within schools.
- The progressive wiring of **hospitals** to make them hyper-connected and the enabling of telemedicine services.
- Offer a stable and fast connection to the **public administration** to guarantee efficient services to citizens.

4.2.1 Education plan: School Plan

According to a study published by Save the Children, in 2022 in Italy more than 1.3 million children will be in absolute poverty and more than one in four children will be at risk of poverty and social exclusion: these are children and adolescents living in households with an income below 60% of the national average. This economic poverty has been worsened by the so-called 'learning loss', i.e., an

impoverishment in educational terms due to school closures (the pandemic forced 94% of the student population to take an educational break), in contrast to the efforts of recent decades to ensure access to basic academic knowledge for all.

Before 2020, digitisation in schools was complemented with tools to support the teaching process, e.g. interactive whiteboards and tablets. As a result of the pandemic that swept the country in 2020, real digital learning environments were created, for example through the use of programming platforms and virtual classrooms. These innovations have underscored the existing problem of the digital divide with regard to the new digitised systems for disseminating knowledge and education, which have been a barrier for those who do not have access to a fast connection or do not own electronic devices.

Numerous studies have identified the overcoming of the digital divide as one of Italy's objectives for the coming years, gaining ample space within the National Recovery and Resilience Plan (Piano Nazionale di Ripresa e Resilienza, PNRR). Open Fiber has confirmed its commitment to fighting this phenomenon, with a business oriented towards generating positive social impacts, including the

connection of schools. Fact, the Company plays a key role in solving the problems of Internet connection performance in schools, offering future-proof technologies that allow pupils and teachers to access the full potential of digital technology. Ensuring that all students, even those living in small municipalities, have the same access to the web is in fact one of Open Fiber's priorities.

The optical fiber connection makes it possible to enable digital services such as workshops, webinars and supplementary or extracurricular online activities that students of the school of the future will be able to access, where digitalisation will be an ally of traditional teaching, and guarantees a stable, fast connection capable of supporting use by several classes at the same time. A connected school is in fact a school that can improve education by enriching the curriculum.

School Plan
By 2026, Open Fiber will connect more than 45,000 schools with fiber optics, with the aim of digitising schools and enabling them to offer services in line with new requirements. Specifically, the first phase identified by the 2020 Schools tender envisages the provision of a 1 Gbps symmetrical connection (with at least 100 Mbs guaranteed) to 35,000 schools (about 78% of the total), i.e. all buildings of middle

THE FUTURE OF THE SCHOOL SYSTEM

After the pandemic a very different future is envisaged for the school system: distance and face-to-face lessons will join and spread even more projects to be carried out digitally. But the benefits do not stop just in remote activities. An Ultra Broadband connection allows people to use the Internet for educational purposes and access cutting-edge educational possibilities even in schools with a lack of equipment. Is there no science laboratory? You can watch a dedicated program. Do you need to practice foreign languages? You can connect to a specific podcast. Where the structures do not arrive, the web arrives. A real rewrite of the study concept that would not be possible without the optical fiber.

and high schools, and in white areas also the connection of all primary and nursery school buildings. This project will be completed by 2023.

By 2022, around 16,000 schools throughout Italy have been reached, with the aim of guaranteeing as many students as possible the right to study in the school of the future, which will be increasingly digital. These schools now have the opportunity to connect to FTTH fiber optics and enjoy an ultra-fast connection of up to 1 Gbps. A large part of the schools reached are part of the School Plan, a tender launched by the Ministry of Business and Made in Italy for the provision of Ultra Broadband Internet connectivity services at school sites throughout Italy. Thanks to the tender in which Open Fiber participates for the structural part of the project, schools will be able to use symmetrical fiber optic connection at up to 1 Giga per second free of charge for a period of 5 years.

4.2.2 Connected healthcare and Telemedicine

By 2026, Open Fiber will connect more than 12,000 healthcare facilities by fiber optic cable with the aim of digitising hospitals and enabling them to offer services in line with new requirements. As far as the location of the public health service facilities covered by the Connected Healthcare tender is concerned, they are situated throughout the country. The country has been divided into eight geographical areas, which will be covered by the operators awarded the tender. The tender aims to ensure connectivity with symmetrical speeds of at least 1 Gbps and up to 10 Gbps for healthcare facilities, from clinics to hospitals. This includes the supply and installation of the access network and management services, technical assistance and maintenance. The infrastructure

must be completed by 30 June 2026, guaranteeing connectivity services for at least the next five years.

Telemedicine: innovative healthcare services
In recent years, **telemedicine** has become increasingly widespread in national and global policies. Already in 2016, in its "Global diffusion of e-health", the WHO mapped telemedicine among the major developments in health care. In fact, the increase in the average age of the population and the consequent onset of chronic diseases require the structural and organisational redesign of the home care model; moreover, as regards Italy, the great variability of the territory has generated over time inhomogeneities in the distribution of health facilities, not allowing many citizens equal access to medical services. Telemedicine represents a concrete and effective response to today's health challenges, allowing monitoring, assistance, prevention and timely intervention in cases of need, reducing costs arising from waiting times and travel, which often have a strong impact on the health budget as well as on the patient's budget. Furthermore, the Ministry of Health emphasises that telemedicine offers great potential, especially for increasing equity in access to social and health services in remote regions. In this regard, at the end of 2022 it approved the guidelines for telemedicine services (Italian Legislative Decree no. 179/12), which set out the prerequisites for ensuring homogeneity at a national level. Moreover, in 2022, with sub-investment 1.2.3 "Telemedicine for a better support of chronic patients" earmarked for Mission 6 (M6C1) of the National Recovery and Resilience Plan (PNRR) dedicated to health, EUR 1 billion was allocated to finance projects enabling remote doctor-patient interactions and research initiatives on digital technologies in telemedicine.

In order to be efficient, telehealth requires secure and reliable networks for the transmission of information and sensitive data, as well as documents, sounds and images. For this reason, Open Fiber, with its 1 Gigabit fiber, is a key player in the digital transformation of medical assistance and is involved in various projects aimed at monitoring patients in fragile situations and with chronic diseases.

A widespread and highly connected hospital: Gaslini Hospital in Genoa
Gaslini Hospital has become the first hospital in Italy with a 10 Giga connection, a power usually required only by large industrial realities. This has been made possible thanks to the "Widespread and highly connected hospital" project, conceived by the Gaslini Institute and financed by the donation of the company Fibering S.p.A., and made possible thanks to the capillarity of the fiber optic network laid in the Genoa area by Open Fiber. By guaranteeing a fast and reliable connection, it has been possible to increase and improve the efficiency of numerous hospital services, including:
- **Tele-training**, i.e., the ability to hold training webinars for doctors anywhere in the world, new training courses for professionals, parents and trainees, nationally and internationally, and for teachers dealing with children with diabetes.
- **Tele-visits and tele-diagnosis** via video call, with remote maintenance of treatment plan updates, without the need for in-office meetings thanks to cloud-based data transfer.
- **Empowerment and support**, through a multimedia classroom that allows families to receive support from families educated and trained by the hospital, consult medical data via smartphones with direct transfer via cloud to the hospital's medical record, thus allowing continuity of support to patients and families through remote counselling.

- **Updating and networking**, with the possibility of receiving immediate advice thanks to direct connection with other institutions, creating a cultural network of experts for the discussion of difficult cases and updating quickly through, for example, the download of scientific articles.
- **Transfer and dissemination of data** characterised by a clear reduction in the time taken to transfer and return the results of experiments to the researcher and finally to the patient, with the possibility of significant impact in terms of diagnosis and rapid dissemination of diagnostic images (e.g. CT scans, radiological imaging) to other wards and outside of the hospital.
- **New lines of research**, encouraging the possibility of carrying out types of analysis that would not be possible in the absence of an Ultra Broadband fiber optic network (e.g. analyses requiring the simultaneous interrogation of several data items).

Furthermore, thanks to fiber optics and fast connectivity, it is possible to provide entertainment on TV platforms for young patients in the wards, as well as remote learning for school-age patients.

The 2021-2025 strategic plan "The Gaslini of the future", in accordance with the health mission of the National Recovery and Resilience Plan (PNRR), envisages a focus on efficiency, digitisation and expansion of remote healthcare and telemedicine services so that they can be used across the board by the various specialised disciplines. By providing its own optical fiber, Open Fiber will play a key role in this ambitious project.

Open Fiber for Campus Biomedico of Rome: Fibermedicine
Open Fiber in collaboration with ELIS, BPCOmedia (an accredited spin-off of the University Campus Bio-Medico

of Rome) and Open V (an American Engineering Company) has contributed as an infrastructure player to the development of an innovative digital solution that guarantees improvements in the care process of patients with COVID-19 infectious syndrome, allowing the monitoring of the evolution of the disease in the compulsory home isolation regime and the verification of any decrease in haemoglobin saturation (SpO2) without waiting for the onset of acute respiratory failure.

The service implements a remote monitoring system with a control centre for specialised personnel that measures SpO2, heart rate and body temperature through the integration of digital technologies such as IoT, Artificial Intelligence and video streaming. The patient receives a medical kit, consisting of an app and a pulse oximeter, with which he transmits the data to be monitored to a dashboard and to the control centre. The latter, physically distributed and web-app based, monitors the patient's physiological data, sends alerts to the specialist staff and integrates a TV system with an appointment to interact in real time with the patient, when necessary. The data and systems of the control room reside on dedicated cloud systems capable of guaranteeing adequate levels of disaster recovery, high availability and security. The solution is potentially extendable to the control of

further pathologies through the integration of additional telemonitoring tools.

Surveys were administered to patients in 2022 which showed that care with a broadband connection was better than what was experienced with a slower connection. Fiber optics are seen as an enabler of a quality service: for the remote doctor-patient interaction to be functional, it is necessary to have technology that compensate for the absence of contact, and thus a fast, reliable Internet connection.

4.2.3 The digitisation of Public Administration

Two axes of the national strategy defined in the PNRR are the digitisation of the public administration and the deployment of ultra-fast networks. The demand for optical fiber in Italy has undergone a real surge and the various measures for its capillarisation see the Company involved at the forefront.

Open Fiber has positioned itself as an enabler of the Public Administration in the digital transformation process that aims to reduce both the distance between public bodies and the people and bureaucratic red tape, while improving the quality of the service offered. This is because the stability and connection speed of fiber optics can guarantee the possibility of enhancing and enabling online services of

#GOODSTORIES

Safe Outpatient Clinic project of the municipality of Parrano

The Safe Outpatient Clinic initiative has been activated thanks to the arrival of Open Fiber's optical fiber. In the municipal pharmacy in the Umbrian village of Parrano (TR) a service is available which allows the pharmacist to send the analyses of the elderly carried out on site to a doctor. Once they have been received, the doctor will send the report back to the pharmacist, thus saving the elderly people time-consuming journeys.

the public administration and the education
and health system, as well as generating
economic benefits.

For example, an ultra-fast stable
connection facilitates the deployment
of services in the area of sustainable
mobility in municipalities, including
electronic control of accesses to limited
traffic areas in cities, info-parking, traffic
flow management and electric vehicle
charging. It offers multiple benefits in the
field of security and local monitoring:
video surveillance and environmental
remote sensing, efficient management
of public lighting, digitisation of tourist,
museum and cultural services. Public
Administration can also benefit from
the development of Ultra Broadband
for electronic invoicing in commercial
transactions and access to online services
through SPID (Public Digital Identity
System).

Migration of public services online:
renewed efficiency

The migration of public services online,
enabled by the digitisation of the public
administration, makes it possible to speed
up procedures that would normally take
time, money and patience. It thus leads
to an optimisation of processes and an
improvement in service quality. No more
queues and wasted hours to complete
some procedure: online services allow any
person to submit their case for handling.
A solution of this kind allows the user to
have all the useful tools at their fingertips
and to be able to see all the necessary
requirements. Just think how many times
in the past people have had to visit a
number of different municipal office due
to the lack of documentation required to
complete the procedure. At the same time,
a full migration of services online would
make the work of civil servants more
efficient, also reducing the time it takes to
complete open cases and thus increasing
end-user satisfaction.

Fiber optics and benefits for the public
administrations

All the scenarios listed above also entail
important economic benefits, while taking
into account the minimum costs required
for their implementation.

For the Public Administration, in fact, it
is not necessary to have a computer or
activate an Internet connection. Public
bodies today already have the tools to
access the network, and the Internet is
now an intuitive reality in most of the daily
actions.

Consequently, one of the actions
necessary to improve telematisation and
streamline the management flows of
practices is constituted by the activation
of the connection to the Ultra Broadband
network. The implementation of the
FTTH connection itself, in fact, becomes
an incentive to enhance online services,
creating a virtuous circle that greatly
improves citizen satisfaction.

Compared to traditional copper-based
networks, an all-fiber optic network in
FTTH (Fiber To The Home) mode offers an
extremely higher level of performance
and improves the efficiency of an
organisation's entire IT infrastructure,
guaranteeing high connection speed,
low latency, stability and resistance to
interference.

The most obvious benefit of fiber optics
concerns data transmission speed: the
transfer is more efficient and covers much
greater distances than traditional copper
cable. This is the type of connection that
guarantees the best performance, because
connection speed also means production
efficiency.

In fact, an internet connection is one of the
first factors that can accelerate (or penalise)
the progress of production flows, whereas
a slow or poor-quality connection entails

objective costs in terms of time, resources and lost working days throughout the year.

The higher bandwidth offered by fiber optics avoids the traditional saturation problems of copper-based lines and enables the transmission of large volumes of data. This facilitates streaming, VoIP, videoconferencing and video surveillance services, as well as file sharing applications and full integration of voice and data traffic functions, with a significant reduction in the costs of traditional telephone lines.

A connection that is resistant to interference, secure, with symmetrical and optimal speed at every point in the network, means a greater readiness for cloud solutions that also guarantee a reduction in data management costs.

#GOODSTORIES

The agreement between Open Fiber and the municipality of Salerno

Thanks to Open Fiber's fiber optics, the City of Salerno is strengthening its online infrastructure and providing citizens with significant savings (around EUR 400,000 for telephone bills alone). This is the result of the successful activation of the fiber network within the municipal buildings included in the agreement with Open Fiber: the municipality was thus able to develop its intranet.

4.3 THE CONTRIBUTION TO BUSINESS DEVELOPMENT

In a scenario characterised by an increasingly globalised market and by a change in the purchasing habits of consumers, who increasingly prefer online solutions, the pursuit of a digitisation path by businesses represents a fundamental factor for their survival and competitiveness, especially for Italian Small and Medium Enterprises (SMEs), which are increasingly subject to international competition determined also by being behind the technology curve. In this context, the ultra-fast fiber optic network can foster the development of digitisation and innovation, which are essential elements for overcoming the digital divide and pursuing the development and growth of the national economic system and especially of SMEs.

A high-performance infrastructure, innovative services, a fast and immediate digitisation process: these are the elements on which Open Fiber focuses, to nurture, support and enhance the resilience of Italian SMEs, which form a central part of the country's economic fabric. For Italian companies the Ultra Broadband made available by Open Fiber is an important benefit for their businesses in several

respects. First and foremost, fiber optics make possible a major expansion of the market served and of the company's relational network: thanks to the guaranteed data transmission speed, it makes it possible to reach any part of the world immediately. Moreover, the speed of fiber optimises the work organisation of corporate teams, minimising download times for work files and facilitating fast and seamless use of the cloud, a valuable ally in optimising today's workflows. The strength of the materials used to produce the fiber guarantees a high degree of connection stability, which in today's increasingly interconnected working system is a fundamental prerequisite for business continuity.

Unlike copper, data-transmitting fiber cables (the materials used are usually silicon and plastic polymers) are able to withstand bad weather, electromagnetic fields and electrical or human interference, ensuring a much more stable signal and optimising the connection's reliability. By limiting interference, Internet connections with high bandwidth availability ensure the continuity of services (for public administrations) and operations (for

ITALY SUPPORTS SME CONNECTIVITY

In recent years, Italy has devoted increasing attention to the digitisation of the country, which must necessarily also include the digital transition of the national production fabric, especially of Small and Medium Enterprises, the country's true driving force.

A fundamental prerequisite for the successful digitisation of Italian SMEs is the improvement of their connectivity. With the aim of incentivising them to increase their connectivity, over the last two years the government has allocated a fund of almost EUR 600 million for the disbursement of vouchers that guarantee a contribution in the form of a discount on the sale price of Ultra Broadband Internet connection fees.

businesses), which is a major benefit given that the interruption of production or business communication entails critical issues and significant costs for any organisation.

Finally, due to the high volume of data and information that today's working methods require to be transmitted over the network and the new ways of communicating adopted by companies and based on online meetings, they tend to easily saturate their connection lines, especially if based on traditional copper. In this context, thanks to its characteristic of guaranteeing the transmission of a significantly higher amount of data than traditional copper wires, Ultra Broadband represents a more efficient and rational solution and avoids possible blockages in the network.

Open Fiber contributes to supporting the country's economy by hiring local supplier companies for the construction, management and maintenance of the optical fiber infrastructure.

The installation of the Ultra Broadband optical fiber network favours the strengthening of the entire system of companies (including SMEs) involved in the activities, producing a double effect: on the one hand, it determines an economic growth of the companies themselves which see their contribution to the infrastructure construction activities; on the other hand, it generates an effect on the employment of skilled workers (joiners, installers and designers). Precisely for these figures, Open Fiber has provided certified courses aimed at the workers of the supplier companies with the aim of refining the practical and theoretical knowledge of the activities related to excavation, laying and installation, demonstrating a constant commitment to the people and companies present in the area.

In 2022, the external workforce mobilised in infrastructure construction activities amounted to around 7,000 people, of which approximately 45% engaged in Creation and the remainder in Delivery & Assurance.

#GOODSTORIES

Fiber to support the innovative services of PlayMore!

The ability to video record and share one's own five-a-side football match on the web for free, to enjoy an internet connection in the shade of a gazebo, to project online videos during events, and to broadcast live video lectures or webinars are just some of the many innovative services made possible by an ultra-fast latest-generation fiber-optic connection. All of this is happening at PlayMore!, the sports centre run by the non-profit organisation reached by the Open Fiber network, an infrastructure with FTTH (Fiber To The Home) technology. Located in the centre of Milan on Via della Moscova in the Brera area, PlayMore! organises sports and social activities open to all, with a special focus on people in vulnerable situations.

Ibo Italy's volunteer work: distances reduced by fiber

In Ferrara, among the buildings connected by Open Fiber, is the headquarters of Ibo Italia, a volunteer association involved in international cooperation and volunteering in Italy and around the world. Dino Montanari, president of Ibo Italia: "Since we have always had volunteers and workers all over the world, we have needed to organise online meetings and have frequent communications with the people representing us abroad. With fiber optics this has become much faster and easier. Using internet connections, we now also do remote training, conferences and activities, involving our international partners".

4.3.1 Smart working

In recent years the need and desire of people to carry out their work partially or totally remotely has spread considerably. According to an Inapp[70] report, almost 80% of workers would prefer to continue working through agile working arrangements[71]. The implementation of smart working has positive effects for both employees and companies. The former benefit first and foremost from a reduction in the hours of the day devoted mostly indirectly to work while optimising the management of their personal commitments. Just think of the average time it takes a worker to get to their place of work every morning and to go home at the end of their shift. At the same time, the use of remote forms of working guarantees cost savings both for the worker, due to reduced travel expenses, and for companies, due to rationalised expenses related to maintaining workplaces.

In 2022 there will be approximately 3.5 million remote workers in Italy, and this figure is expected to increase in the coming year, the result of the consolidation of smart working practices implemented and an increase in the use of this method in the public sector as well.[72] In many realities, however, there is still a difficulty in accessing a stable and fast Internet connection, both among individuals and companies. This represents a limiting factor in the spread of smart working as an option used in our country.

The progressive spread of digitisation has highlighted the problems associated with underperforming connections and the spread of the digital divide, which above all affects small villages and mountain areas. As a result, in recent years there has been an increase in demand for adequate Internet connections that Open Fiber ultra-fast network can respond to, allowing flexible and seamless work anywhere. This has important effects not only on the lives of individuals but also on the development of local businesses, which, thanks to a stable and performing infrastructure, choose to remain in their home territories without being forced to move to large cities.

4.3.2 Partnership for business competitiveness and public administration efficiency

In order to promote and spread digital culture and transformation, Open Fiber has devised various programmes and partnerships consistent with its business and with the activities carried out within the Infratel concession to which it is awarded.

DIGITAL ALLIANCE WITH SOUTH WORKING®

Spreading the digital culture among citizens and administrators. Support public and private initiatives to promote agile working, particularly in less urbanised and mountainous areas. Sharing a mapping strategy that will become a compass for all those workers wishing to work according to the principles of smart working. These are the salient points of the Memorandum of Understanding signed between Open Fiber and South Working® – Lavorare dal Sud A.P.S., an agreement aimed at coordinating a program of actions for the dissemination of the Ultra Broadband in the national territory. A strategic objective that since their recent establishment the two realities have in common, engaged on different fronts in the desire to extend a full and complete "digital citizenship" to the largest possible number of individuals. A goal that has become even more stringent in the face of the challenges posed by the pandemic.

70 National Institute for Public Policy Analysis – public research body supervised by the Ministry of Labour and Social Policy.

71 Source: INAPP report "Current status and prospects of teleworking. Towards a new model of work organisation?".

72 Source: Teleworking in Italy: remote workers are decreasing (osservatori.net).

These are all initiatives aimed at increasing the competitiveness of companies in Italy and increasing the efficiency of the Public Administration, making it more responsive to the new needs of citizens.

The capillarity of the network throughout the territory and the reliability of fiber make Open Fiber the privileged partner of companies, associations and administrations that need a stable and fast connection to carry out their activities (for example, to use the latest generation of software), to keep up with the evolution of the reference markets (e-commerce and exports) and to stay connected with customers and citizens thanks to the various online communication channels (e.g., social networks, e-mail, website) which have long since replaced traditional channels.

Open and VSIX to connect the Northeast
Open Fiber has connected the University Centre for Connectivity and Territorial Services of the University of Padua – VSIX, which manages the Padua Internet Exchange, the main hub for the north-

eastern part of the internet network, with the xPoP Backbone. A further step forward in connecting all the major data centres and neutral access points in our country using high-performance networks to ensure optimal performance and high security standards in the exchange of information for the benefit of the people, companies and public administrations, with a view to interoperability and integration. The collaboration between Open Fiber and VSIX is therefore strategic as it will enable the development of innovative services for the country that increasingly require high-performance, scalable and reliable internet access. A significant opportunity for the economic and social system of Veneto and the North-East to support the digital transition of enterprises, public administrations and the social fabric.

Open Fiber and *Autostrade per l'Italia* to digitise cities and roads
Open Fiber and the Autostrade per l'Italia Group (ASPI) have signed a Memorandum of Understanding (MoU) with the aim of accelerating the digitisation of the country and collaborating on projects and initiatives

to make our cities and roads smarter. In order to provide a concrete solution to the shortage of skilled labour, Open Fiber, the ASPI Group through its construction subsidiary Amplia Infrastructures and CIEL, a company specialising in technological installations, formed a consortium that will be active in the completion of the fiber-optic network that Open Fiber is building in Italy. Called **Open Fiber Network Solutions**, the consortium recruits and trains professionals who will work in the construction of fiber-optic telecommunications infrastructure. The MoU between Autostrade per l'Italia and Open Fiber is aimed at boosting infrastructure, road and network digitisation projects through the implementation of initiatives in the areas of Smart Cities, ITS (Intelligent Transport Systems), smart roads, e-mobility and more generally sustainable and innovative mobility[73].

Open Fiber, Tim and FiberCop: agreement to accelerate the country's digitisation
Open Fiber, TIM and FiberCop have signed a commercial agreement that allows the reuse of network infrastructure in so-called white areas, where the construction of a telecommunications infrastructure under concession has been financed with public funds. In white areas – where Open Fiber won the three public tenders called by Infratel – the agreement stipulates that Open Fiber will purchase the right of use (IRU) for aerial infrastructure and access links to the customer's home from FiberCop for a total value of more than EUR 200 million. At the same time, TIM agrees to make Open Fiber's optical fiber available to its customers in white areas. This will make it possible to activate at least 500,000 customers requesting FTTH technology on the Open Fiber network. This agreement will also enable Open Fiber to significantly accelerate the network construction (Creation) and connection

activation (Delivery) phases in white areas. More efficiency in the use of infrastructure and labour means not only speeding up the country's cabling where it is already planned, but also freeing up resources to be allocated to the further development plans envisaged in the PNRR.

Open Fiber and AVM, connection speed surges to 2.5 Gigabits per second
Thanks to the commercial agreement between AVM, a leading manufacturer of networking devices, and Open Fiber, a 2.5 Gbps FTTH connection including a FRITZ!Box 5530 Fiber modem is available through partner operators, allowing users surfing the Open Fiber network to enjoy higher performance connectivity, in keeping with the market's technological evolution. Thanks to the new Wi-Fi 6 Mesh standard with MU-MIMO (one 2.5 Gigabit port), the FRITZ!Box 5530 Fiber modem is a trailblazing hub for fiber-optic connections capable of transmitting in parallel on the 2.4 GHz and 5 GHz frequency bands for speeds of up to 3 Gbps.

Open Fiber and Inwit, agreement to share infrastructure
INWIT, Italy's leading tower operator, and Open Fiber have signed a strategic agreement to cover more than 600 municipalities nationwide with FWA technology. The partnership will make an important contribution to reducing the digital divide in our country, a divide that is not only technological but also social and industrial. The agreement provides for the design and construction of up to 500 new sites by INWIT, the construction of which will start during 2022, and the related hosting and infrastructure maintenance services. Open Fiber will complete the sites with FWA equipment and fiber-optic bindings. The aim is to facilitate access to the Ultra Broadband network in areas of the country where it is still limited or absent.

73 For more information about the consortium, see paragraph 4.4 "Open Fiber Network Solutions".

Open Fiber and Virgin Fibra, partnership for ultra-fast connectivity

Virgin Fibra, the new company created by Virgin, has exclusively chosen the Open Fiber network to enter the Italian fiber optic market. Open Fiber and Virgin Fibra signed a partnership agreement for the marketing of Virgin Fibra's connectivity services on Open Fiber's FTTH all-fiber network, available in medium and large Italian cities and municipalities in white areas. Sales have started and the services are already available. Virgin Fibra joins the more than 300 national and international Open Fiber partner operators who develop digital services on the Company's Ultra Broadband network.

Open Fiber and Eolo, partnership extension for FWA in white areas

EOLO, a leading company in Italy in the provision of ultra broadband connectivity through FWA technology, and Open Fiber have signed a strategic cooperation agreement for the coverage of white areas with ultra broadband connectivity services in FWA mode. The agreement extends the collaboration that began in 2019 through EOLO's marketing of FTTH services on the Open Fiber network, followed in 2021 by the agreement for the fiber connection of EOLO's towers in white areas by Open Fiber. For Open Fiber, the agreement is part of the plans to accelerate the project to cover the country's inland areas, as it will

be able to use the infrastructure available in 300 EOLO radio base stations to facilitate the FWA connection of rural areas. Open Fiber will also be able to take advantage of the technical and management know-how gained by EOLO in over 20 years of activity in radio technology management to support the design and installation of its FWA network.

Open Fiber and Sirti: prison work programme completed

The Sirti Group, a hub of innovation in the field of network infrastructure development and digital and cybersecurity services, and Open Fiber have finalised the Prison Work Programme at the Rebibbia Prison, which aims to create qualifying job opportunities for inmates in the telecommunications sector. The hiring of a class of seven inmates was made official. After successfully completing the training course lasting more than 160 hours, they will join the teams of Sirti and the Open Fiber Network Solutions (OFNS) consortium as employees for fiber-optic splicing activities for network infrastructure in Italy. The initiative is part of a wide-ranging social inclusion project promoted by Italian institutions in collaboration with the most important Italian players in the telecommunications sector. A concrete pathway to enable inmates to acquire new skills, usable even at the end of their prison time, while offering valid work

#GOODSTORIES

Open Fiber to support research at Centrale Fies in Dro

Centrale Fies in Dro, Trento, a research centre on contemporary performance practices, in addition to being a point of reference in its sector both in Italy and abroad, will also be on the cutting edge in terms of technology thanks to the ultra-fast connection guaranteed by Open Fiber Ultra Broadband.

Dino Sommadossi, President and co-founder of Centrale Fies analysed all the benefits of this partnership: "For a centre that is on the periphery but all the same in contact with the world, an internet connection is essential. For years we have suffered a major disadvantage, being distant from the city. The efforts of Open Fiber and the arrival of a fiber connection have completely revolutionised our ability to discuss, talk and work with the rest of the world".

opportunities inside and outside prisons, in the manner envisaged by law.

Open Fiber and Edoardo Garrone Foundation for start-ups in marginal areas
Supporting young businesses in inland areas thanks to ultra-broadband connections: this is the aim of the collaboration agreement signed by Edoardo Garrone Foundation and Open Fiber.

The agreement, which will run until 2025, aims to support startups launched in the Apennines and the Alps thanks to the temporary incubators ReStartApp and ReStartAlp, promoted by the Edoardo Garrone Foundation, for the redevelopment of the so-called marginal areas of our country. The Ultra Broadband network laid by Open Fiber will connect current and future new businesses scattered in mountainous areas throughout Italy and will allow new and concrete business development opportunities for the younger generations and the revitalisation of the social and economic fabric of inland areas. Through the agreement with selected electronic communications operators, young entrepreneurs will be able to access the connection tools necessary to meet their communication needs.

The first company wired by Open Fiber to ultra-broadband is EcoHubDesign, a startup established in the province of Sondrio, which participated in the 2018 edition of ReStartAlp and deals with the design, promotion and dissemination of sustainable and conscious building. Through its work, EcoHub also pursues the goal of creating a network of businesses to reactivate Alpine territories, starting with the Valtellina area, by enhancing the local wood supply chain.

The Garrone Foundation's mission, with the attention and commitment to training young entrepreneurs in the Alps and

Apennines, overlaps perfectly with the objectives that Open Fiber has been pursuing since its inception: technological innovation; equal access conditions to a "future-proof" infrastructure offered to all citizens and businesses, regardless of whether they are located in a large city or in a small mountain village; equal opportunities for anyone wishing to test their talent and create development opportunities for their territory.

Sustainable innovation: Open Fiber and Symbola
Open Fiber has joined Symbola, a foundation that promotes the strengths of Made in Italy, and together they aim to offer their contribution, in line with the 2030 United Nations Sustainable Development Goals (SDGs), to provide communities with modern and resilient infrastructure, reduce the digital divide and make cities and towns inclusive, safe, durable and sustainable. Another common goal is the revitalisation of inland areas. By cabling metropolises and small municipalities with the same FTTH technology, a level playing field will be created, that condition of equal opportunity that can put a stop to the depopulation of small towns and make those places rich in natural, historical and cultural beauty, the pride of Italy, even more attractive with the availability of digital services for residents and tourists.

The plan to build the FTTH fiber network infrastructure, capable of travelling at 1 Gigabit per second, will allow residents in areas where connections are inadequate to finally benefit from an ultra-fast network; Italy will be able to reduce the digital divide with the rest of European countries, in view of the EU Digital Compass objectives for 2030. In addition, Open Fiber and Fondazione Symbola aim to speed up the development of the cabling plan throughout the country, supporting the processes of bureaucratic simplification through proposals to reduce the number of

practices and authorisation times needed to lay the infrastructure.

Open Fiber has joined Symbola's network believing that innovation and sustainability are two of the key elements of the society they aspire to and that together they will accelerate this process.

4.3.3 Restart Programme: research and innovation for telecommunications

In line with its strategy, Open Fiber decided to join an important research and development programme in the telecommunications sector, the RESTART programme ("RESearch and innovation on future Telecommunications systems and networks, to make Italy more smART"), financed with PNRR resources.[74] Its main objective is to foster collaboration between universities, companies and key national stakeholders in general in the telecommunications sector for the development of innovative technologies and services for the next decade. Moreover, basic and applied research programmes will be oriented towards the topics of the PNRR and the Horizon Europe clusters.[75]

Specifically, RESTART promotes and enables the advancement of science and TLC technologies (such as 5G and 6G, high-capacity fixed infrastructure, IoT, edge and core-cloud), applications and services in sectors as diverse as agriculture, trade, energy, finance, industry, media, health, security and transport.

The organisation of the programme
The programme is spread over three years, from 2023 to 2026, and will involve 25 partners including universities, research centres and operators, with an investment of EUR 118 million.

Open Fiber will contribute to 3 of the 14 structural and 3 of the 18 focused projects envisaged by the programme by providing its skills and expertise as an industrial partner, and in addition by providing its user needs.

Furthermore, the company became part of the RESTART Foundation (implementing body, hub, of the Research and Innovation Programme, and responsible for the launch, full implementation and management of the Research and Innovation Programme of the Innovation Ecosystem), which is in charge of monitoring eight spokes represented by the coordination centres.

Open Fiber's commitment
The company will participate in the programme with six projects aimed at developing new services, architectural solutions and technologies of strategic interest.

- **Rigoletto**[76]**:** structural project in collaboration with Scuola Superiore Sant'Anna in Pisa focused on communication security through the use of quantum technology. Open Fiber will participate with the definition of network architecture, Quantum Key Distribution (QKD), fiber sensing and field trials. The aim of this project is to develop an energy-efficient optical network, new optically integrated devices, an innovative data plan of a fiber optic infrastructure supporting capacity enhancement via MB, SDM, wireless access and security via QKD. It also includes the development of a platform for monitoring data transmission and conversion and the construction of a framework for an AI-assisted network. Subsequently, the results of these initiatives will be shared for the involvement of partners to promote the adoption of the solutions.

74 Mission 4, Component 2 "From Research to enterprise", Investment 1.3 "Partnerships extended to universities, research centres, companies for the financing of basic research projects" funded by the European Union NextGenerationEU, topic 14 "Telecommunications of the future".

75 European Union framework programme for research and innovation for the period 2021-2027.

76 Spoke 1, S4: Green autonomic optical networks, systems and integrated devices.

- **Pesco**[77]**:** structural project focused on User-centric Pervasive Internet and edge computing architectures. Open Fiber will be responsible for the definition of network architectures and use cases. The project envisages the development of foundations, IoT paradigms and concrete technological enablers for a pervasive internet future, including new communication paradigms with embedded data management and data-based intelligence. Another objective is to provide a reference architecture and performance evaluation for a pervasive internet. The results of the project will be linked to scientific and technological development programmes worldwide.

- **Net4Future**[78]**:** a structural project in collaboration with the University of Palermo focused on fostering a new regulatory framework to encourage innovation. It consists of the study of multiple future scenarios with a focus on the responsibilities and opportunities of the telecommunications sector. This project involves a high degree of synergy with the other Restart initiatives. Shared tools will be used to define the platforms and components needed to develop tests and validation tools for beyond-5G. Finally, the innovation potential of regulatory aspects will be analysed considering the facilitation of regulation in the wholesale market and solutions to keep competition and technology investments together.

- **Sensing Net**[79]**:** a focused project in cooperation with Turin Polytechnic to develop fiber sensing services for seismic monitoring and to deploy diagnosis and surveillance in urban and regional settings. The aim of the project is to enhance existing network infrastructure by introducing fiber sensing technologies to investigate potential applications.

- **Graphics**[80]**:** a focused project in collaboration with the Federico II University of Naples aimed at developing a fully optical, remotely programmable active switch.

QUANTUM KEY DISTRIBUTION

With the arrival of quantum computing and current encryption techniques, the possibility of hacking computer security keys is increasing exponentially.

Optical fiber is suitable for using a new quantum-based technique for distributing security keys, the aim of which is to make them impossible to break and, consequently, to make data transmissions practically inviolable. Since the 1980s, several quantum communication protocols have been defined that have characteristics such as **reliability, security and key rate**. These parameters are very important for the definition of a communication protocol and are directly related to each other. In order to introduce this technology into a telecommunications ecosystem, parameters such as cost, architecture and management must be considered.

To speed up computation, quantum computers draw directly on an unimaginably vast fabric of reality: the strange and counterintuitive world of quantum mechanics. Although we are only at the beginning of this journey, quantum computing has the potential to generate innovations in numerous fields.

Instead of storing information using bits represented by 0 or 1 as conventional digital computers do, quantum computers use quantum bits, or qubits, to encode information as 0, 1 or both simultaneously. This superposition of states, together with the other quantum-mechanical phenomena of entanglement and tunnelling, allows quantum computers to manipulate huge combinations of states simultaneously.

The exponential growth in computing power resulting from the development of a viable quantum computer looks set to revolutionise a wide range of sectors and applications such as healthcare (research, diagnostics, treatment), finance (automated high-frequency trading, fraud interception), marketing, meteorology and logistics.

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77 Spoke 1, S8: PErvasive user-centric integrated Sensing and Communications.

78 Spoke 2, S14: Cross-project vision and results, Evolution of Networking technologies for a sustainable future and inclusive society.

79 Spoke 1: F11: Introducing SENSING capabilities in deployed TLC fiber NETworks.

80 Spoke 1: F5: Graphene/a-Si:H Photonic Integrated Circuit Switch.

Open Fiber will be responsible for requirements definition and testing. This project will bring several advantages to the Passive Optical Networks (PON) system, including easy network reconfiguration, full power transmission in each device, and increased data security.

- **TeleSmeg**[81]**:** a focused project in cooperation with WINDTRE and the University of Florence with the aim of offering solutions for improving energy efficiency. Specifically, Open Fiber will focus on using the network to improve the monitoring and control of electricity consumption. The main objective of this project is to revolutionise smart grids by means of automatic failure detection of the energy distribution network to make it more environmentally friendly, remote inspections of delimited working areas at the distribution level, millisecond-accurate control of distribution generation and optimisation of residual energy storage.

Benefits for Open Fiber

Restart also represents an opportunity for Open Fiber to expand its expertise on national and European research and development programmes that are highly formative in project management. It will also require the involvement of all company departments. The functions that are most involved are Market Business and NW&O, but the other departments can also benefit directly or indirectly in terms of expanding knowledge and developing new collaborations. Moreover, Open Fiber can use the project to fully exploit the Open Factory laboratory, testing the services developed. An investment of EUR 250,000 is also planned for equipment and internal testing. Finally, all projects Open Fiber is involved in fulfil and are in keeping with the company's sustainability policies, including innovation and technology for the environment, fiber as an enabler of innovative services, smart grids and people as the driving force behind the sustainability strategy.

4.4 OPEN FIBER NETWORK SOLUTIONS

The Open Fiber Network Solutions Consortium (OFNS) was established on 24 March 2022 by Open Fiber S.p.A., Amplia Infrastructures S.p.A. and CIEL S.p.A.[82]

Open Fiber Network Solutions

The main objective pursued by the Consortium is to support Open Fiber's strategic plan in the completion of the fiber optic infrastructure in the "white areas" and "grey areas" covered by the agreements signed by Open Fiber and Infratel Italia S.p.A. The Consortium aims to provide a concrete solution to the shortage of skilled labour – a current problem also in the context of the development of the plans linked to the National Recovery and Resilience Plan (PRNN) – by expanding the production capacity of the network enterprise system as a whole available on the market, and thus facilitating the completion of the BUL Plan and the "Italia a 1 Giga" tender. A team that will build thousands of kilometres of the country's new digital infrastructure.

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81 Spoke 5, F12: Telecom as a service in the next Smart Energy Grid.

82 Open Fiber Network Solutions was established as a stable consortium (pursuant to Article 45 of Italian Legislative Decree no. 50/2016, so-called "Procurement Code") in the form of a limited liability company and will last until 31 March 2027.

In order to ensure the achievement of this objective, the Consortium has planned to add new members, having received numerous applications for membership from both Italian and foreign companies. The meeting of the Consortium members decides on the admission of new members.

The Consortium estimates the employment of more than 1,000 employees by the end of 2023, including by using the resources of new consortium members. New Consortium members are required to guarantee the existence of specific certifications and economic, technical, reputational and health, safety and environmental protection requirements necessary to carry out network construction in accordance with current regulations, as well as to comply with the commitment in terms of production capacity – e.g. dedicated resources (FTE) and means – made at the time of application.

In compliance with the provisions of Article 45 of the Procurement Code, the founding members – Open Fiber, Amplia and CIEL – have an obligation to remain in the consortium for five years from its establishment and the other consortium members have an obligation to remain in the consortium for at least 30 months from their entry.

In the course of 2022, the Consortium obtained certifications for international standards ISO 9001, ISO 14001 and ISO 45001 (Management Systems for Quality, Occupational Health and Safety, and the Environment) and also SOA certification (OG1, OG3, OS19[83])and also the certification required to operate on the low- and medium-voltage electricity infrastructure.

By the end of 2022 the Consortium already employed more than 500 people on job sites[84], building more than 300 km of infrastructure in white areas.

The current scope of activities includes work in white areas in six regions (Emilia-Romagna, Lazio, Liguria, Lombardy, Piedmont, Tuscany). When fully operational, the consortium plans to extend its scope of activity into the grey areas in the regions awarded to Open Fiber.

As part of a wide-ranging social inclusion project promoted by Italian institutions in cooperation with the most important Italian players in the telecommunications world, the Consortium completed the "Prison Work Programme at Rebibbia Prison" ("Hope" Project) together with Sirti. Following the successful completion of a 160-hour training course, this programme saw the hiring of six inmates, including three at OFNS, as workers for fiber-optic splicing.

Moreover, the Consortium intends to stimulate the development of professional resources and the growth of the labour market, and to this end intends to make use of the tools offered by state policies (e.g. the "Flows Decree").

In the Centre and Northwest, the Consortium held meetings with the regions of Lazio, Tuscany, Liguria and Lombardy, creating concrete job opportunities for all those registered with the employment centres. Indeed, the open days organised in Lazio and Liguria led to more than 200 on-site interviews per event.

The Consortium created a participative model with three employment agencies called OFNS Academy, with the aim of recruiting and training young people as splicers and installers. In 2022 OFNS Academy provided more than 3,000 training hours and hired more than 100 resources.

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83 Categories of Works: OG 1 "Civil and industrial buildings", OG 3 "Roads, motorways, bridges, viaducts, railways, subways" and OS 19 "Telecommunication and transmission network installations and processing".
84 Including consortium companies, of which about 260 are direct OFNS staff.

5.0 | HUMAN CAPITAL

2022 TEAM

1,571
employees

+22%
vs 2021

33%
women

100%
employees with permanent contract

5.1 OUR PEOPLE

What Open Fiber offers to the technological development and digitisation of the country is first and foremost its wealth of skills, experience and quality made up of its people. The pursuit of excellence is a complex, ambitious journey that can only be accomplished with a close-knit team of individual talents working towards a common goal.

It is human capital that makes the difference in business development processes. Skills and experience are the pillars that Open Fiber continues to base its way of doing business on, investing in the women and men who take part in the company's success. In fact, being able to take on the challenges of the future means

being ready and equipped with a wide range of skills, professionalism and talents.

For this reason, Open Fiber adopts a tailor-made approach in guaranteeing training and professional development for its employees, in order to enhance and increase their expertise and skills, aware that added value can be found in the uniqueness of each person. The company proposes a "model of excellence" which brings together the abilities, behaviours and skills of those who work within and merges them with the company culture, mission and values, to ensure that everyone can express their potential, both professional and human. This model is applied to all employee development, training, assessment, and feedback, in which great importance is attached to professional growth and the conditions are created for people to follow a career path consistent with their skills and expectations.

Despite the events that have disrupted the world around us in recent years, Open Fiber has always maintained high levels of permanent employment, increasing its workforce every year. The company also offers its employees the possibility of smart working for a few days of each month, laying the foundations for the creation of a proper work-life balance.

At the end of 2022, the Open Fiber team had **1,571 employees** (up by around 22% compared to 2021), mostly concentrated in the cities of Rome and Milan. Women make up around 33% of the workforce (up from 2021), and the majority of employees are in the 30-50 age bracket (74%), followed by the under-30 bracket (16%).

Number of employee hires – 2022

5%
29%
407 employee hires
66%
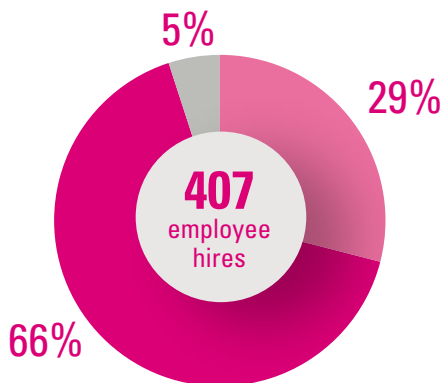
Total number of employees – 2022

10%
16%
1,571 employees
74%
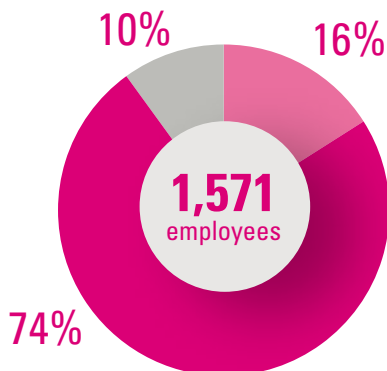
● < 30 years   ● Between 30 and 50 years   ● > 50 years

407
employee hires

35% women
in new employee hires

8%
employee turnover rate

5.1.1 Attracting talent

Nurturing teamwork; encouraging a healthy and stimulating environment where everyone can express their skills and talent, feeling a sense of belonging, pride and motivation; developing skills within the company.

For Open Fiber these are real competitive advantages that can make the difference.

The strategic role assigned to human capital means that the search for new talent is critical: a constant practice that infuses Open Fiber with innovative ideas and new skills.

Open Fiber's strategy to identify new talent and enhance employer branding is mainly developed by:
- Implementing different attraction channels and sourcing tools such as the company database and the Careers section of the company website, thanks also to the support of external headhunting companies and using the main social recruiting platforms.
- Enhancing the **talent attraction** of target candidates, participating in innovative and **digital oriented** initiatives, promoting the positioning of the Open Fiber brand as the Best Digital Workplace.

- Consolidating the presence of Open Fiber as an active employer in the **main academic institutions** in Italy, through a virtuous circuit of **ad hoc partnerships** and a particular focus on engineering excellence (TLC, Electronics, Civil and/or other)[85].
- Participating in employer branding events/activities with a focus on **local** presence, enhancing the contribution of our professionals as ambassadors of the company's best practices, inviting them to target events (e.g., career days).
- Supporting and promoting **social impact** projects, such as the school/work alternation project[86].

5.1.2 Employer branding

Be pioneers. People and teams. Towards excellence. Beyond expectations. These are the main values that constitute the compass with which Open Fiber orients the actions and work of the people and teams that take part in its mission.

Since its establishment, Open Fiber has favoured a cutting-edge way of acting in managing its people, following an unconventional and sustainable approach and exploiting the potential of digital technology to identify and meet their needs. Indeed, the company's philosophy is based on sharing a common vision and an advanced employee experience, which can only be achieved thanks to everyone's collaboration and commitment. Therefore, a working environment has been created that allows employees to perform at their best, enhancing their talent, through a flexible, collaborative, and sustainable logic, and a solid and well-structured human resources management strategy has been developed, oriented towards continuous performance improvement.

Open Fiber's commitment is further confirmed by the fact that it received

85 See section 4.1.6 "Partnership and innovation in support of culture" for more details.
86 For more details, see section 5.4 "Diversity, Equity & Inclusion" and section 4.1.6 "Partnership and innovation in support of culture"

again two important awards for its people management and development policies: **Top Employers Italy** – issued by the Top Employers Institute, the body that certifies the excellence of HR best practices – and **Great Place To Work** – issued by the international company bearing the same name, which for forty years has specialised in analysing company climate and employer branding.

AWARDS

SOCIAL RECRUITING CHANNELS

In 2022 Open Fiber increased its activity as an employer within social recruiting channels, especially the LinkedIn platform.

During H2 2022, more than 12,000 applications were received in response to ads posted on the LinkedIn, while those received on the company website in the "Work with us" section numbered around 3,000.

CAREER DAY

2022, Open Fiber renewed its membership in the **Digital Career Day** event circuit – even in digital mode – to strengthen its network with the main universities in Italy, choosing digital oriented events to help the best talents find professional opportunities. During the year the Company took part in 10 events of this kind, reaching thousands of participants including students and visitors, and promoting orientation activities, webinars, CV checks, assessments, challenges, and introductory interviews.

CO-DESIGNING MASTERS AND COURSES

Open Fiber collaborates with some of the main Italian academic institutions of excellence, through a virtuous circuit of ad hoc partnerships, through which it promotes initiatives and activities for masters and specialised courses.

Also in 2022, collaborations were established with different technical-engineering oriented and soft masters. The activities involved co-designing teaching programmes, classroom lectures and presentations, internships, project work and scholarships.

As part of the partnership initiatives with the main universities already consolidated by Open Fiber, the collaboration with the world of scientific research continues through the **funding of a scholarship for the 1st National Industrial PhD in Artificial Intelligence** promoted by the **University of Pisa**.

This three-year cooperation is aimed at enhancing the specific skills related to the implementation of **data science and big data** techniques, which are essential to allow Open Fiber to become a data-driven organisation.

Moreover, in 2022 Open Fiber financed another research project through the award of a **scholarship for a national PhD in Information Technology and Electrical Engineering** in partnership with the **Federico II University of Naples**.

THE VALUE OF PEOPLE

In order to achieve the goal of creating a digital highway to guarantee coverage in both large cities and small towns, Open Fiber promotes an organisational culture oriented towards the values that the company seeks in its people:

Pioneering spirit: experimentation, which takes place with curiosity, reactivity and proactivity, plays a fundamental role at Open Fiber because it allows new scenarios to be explored and skills to be increased by designing and offering innovative solutions. The push towards the future is Open Fiber's main driving force.

People and teams: people are the founding value of the organisation, which is why Open Fiber strives to create an environment where all employees can express their skills while maintaining pride, motivation and a high sense of belonging.

Towards excellence: the people of Open Fiber are inspired by a sense of responsibility, competence and intellectual honesty. These characteristics make it possible to achieve excellence represented by attention to detail, quality and the desire to work together towards a common goal.

Beyond expectations: shared ambition is a multiplier of competitiveness. Open Fiber sets itself increasingly challenging goals, which can only be achieved thanks to the experience of all employees who challenge themselves and do not let themselves be limited by the obstacles they encounter.

5.2 GROWTH AND TRAINING OF OUR EMPLOYEES

5.2.1 Training

The challenges of the market can only be overcome by allowing one's own resources to be constantly prepared and competitive, to develop new skills and to reach levels of excellence.

For Open Fiber, each employee is a unique resource to be developed, and personnel training is a fundamental tool to support the business, capable of developing and increasing the skills and expertise of human capital.

On the basis of this belief, the company invests all the resources necessary to identify and define the skills required to achieve the objectives of the strategic plan, integrate them into the organisational approach, map their dissemination among the company's workforce and implement customised training programmes.

Thanks to a tailor-made approach, the Company has created increasingly customised training courses, combining compulsory ones or those addressed to the entire workforce, with some more specific ones to enhance and update one's soft and hard skills according to one's qualification and company role. This possibility is available to everyone, from management to new recruits, for whom specific OnBoarding courses have been developed.

The continuation of the state of emergency relating to the Coronavirus pandemic over the years has not prevented Open Fiber from providing training to its employees, on the contrary, it has increasingly developed more and more digital options, offering the opportunity for a gradual return to in-person training: indeed, while the percentage of training hours provided online in 2021 was 93%, in 2022 it was **84%** in the classroom. In the last year

HIGH-IMPACT LEARNING ENVIRONMENT

SELF LEARNING

PEOPLE CENTRIC APPROACH

OF ACADEMY

KNOWLEDGE SHARING

more than 57,000
total training hours provided*

38
average training hours per capita

100%
of employees have received at least 4 hours of training

about 9,800
hours of Health, Safety and Environment (HSE) training

about 11,500
hours of training in Green and Black Belt Lean Six Sigma, Agile PM and Project Management certification courses

84%
training hours delivered online

*Training data refer to courses mapped through the internal LMS Training Management System.

alone, the Company has thus reached **over 57,000 hours of training**, divided into Company training (institutional corporate training, relating to the MOG 231, Code of Ethics, Antitrust, etc.), technical training and training for network specialists, behavioural, language and digital training, as well as compulsory (by law) training on Occupational Health and Safety (for all workers and those working in areas such as fire-fighting, first aid, for workers' safety representatives and those in charge of safety, as well as PES and PEV[87] in electrical work) and "necessary" training (in addition to legislative compliance) on Security and HSE issues, aimed at increasing employee awareness of Information Security, Occupational Health and Safety and Environmental Protection.

Open Fiber also encourages the principle of continuous self-learning by providing all employees with access to various dynamic self-learning platforms, including:

- **OFCourseMe:** based on artificial intelligence, is a platform offering more than 200,000 classes aggregated from the best MOOCs (Massive Online Open Courses), a true online catalogue of courses, video tutorials and TEDs from all over the web, selected and constantly updated and usable on the corporate LMS.[88]

- **Open English:** to increase knowledge of English, these are customised programmes available to all employees and a family member, based on virtual classes, exercises and advanced study with qualified native speakers, adapted to each individual's needs, usable on the company LMS 24/7.

- **Open Learning:** to ensure constant digital training on key corporate issues, this is a free digital learning experience for all users of the corporate website, accessible 24/7.

87 Skilled persons (PES) and trained persons (PEV).
88 Learning Management System.

Furthermore, in order to facilitate access to company procedures and to enable employees to stay up to date on the content and updates of company-related information, short micro-learning multimedia content lessons (OPDL) describing internal processes are available.

This forward-looking approach and continuous focus on its resources has meant that in recent years Open Fiber has grown exponentially and increased the total number of employees from 782 in 2018 to 1,571 in 2022.

2022 HIGHLIGHTS

5 OnBoarding
editions for Field Managers, Operational Support and Operational Management

146 participants

OnBoarding Program for newly-hired Field Managers and Regional Operational Supporting Staff

The OnBoarding and shadowing model developed and launched in 2020 for the Field Managers, Operational Support and Operational Management figures aims to provide the main tools needed to perform the specific activities of the role in the best possible way and to introduce them to the knowledge of the processes and dynamics of the organisation, as well as networking. The OnBoarding courses have a total duration of 6 weeks and include training in virtual classrooms, coaching on monitoring and control activities also with senior figures having the same role, as well as the use of training pills.

Behavioural   Languages   Technical   Network specialists

TAILORMADE TRAINING

OPEN LEARNING

Soft Skills   Language Skills   Technical Skills   Company Trainings   TLC Skills
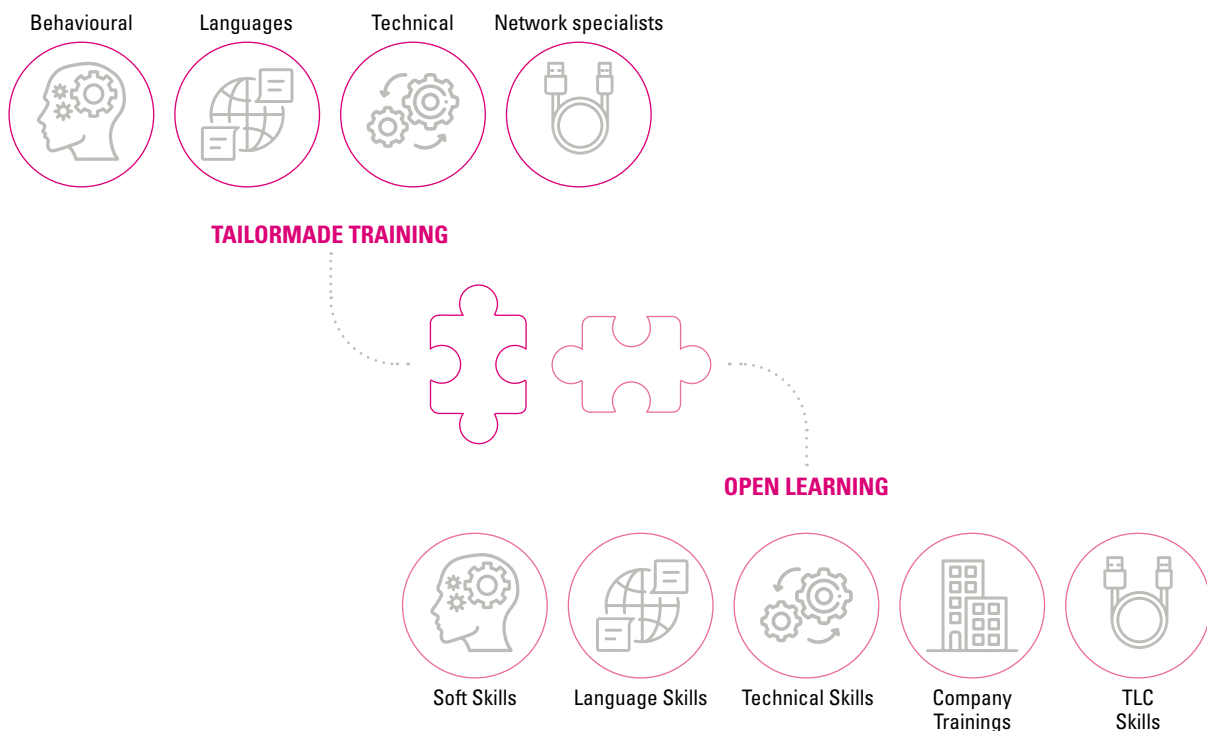
5.2.2 Training to support continuous process improvement

In 2022, Open Fiber involved a significant number of employees in various training courses to obtain **Lean Six Sigma Green Belt** and **Lean Six Sigma Black Belt** certifications, in accordance with ISO 18404:2019 international standard, **Agile PM** and **Project Management**.

Specifically, Lean Six Sigma courses aim to develop the ability to analyse and improve business processes through the use of a problem-solving methodology and following the DMAIC (Define, Measure, Analyse, Improve, Control) cycle. The Lean Six Sigma method combines Six Sigma and Lean Production principles and tools, with the aim of reducing variability and waste in company processes, optimising

OPEN FIBER DIGITAL HR

Virtual Assistant

Open Fiber is very focused on the internal dissemination of core information for the management of the company's business. To achieve this goal, it has set up a company document system accessible to all employees, within which the company's regulatory system and all related documents can be found.

To facilitate the search for information, simple text searches are complemented by an AI (Artificial Intelligence) technology that acts as a virtual assistant called **Snappy** chatbot.

The Snappy chatbot allows the employee to interact with the system to make enquiries on company matters (administrative issues, search for contact information of other co-workers, insights into processes, procedures and other documentation in the company document system).

Moreover, Open Fiber also extended the use of the Snappy chatbot to visitors of the institutional website to guide them through the process of applying for job vacancies. The knowledge base of virtual assistants is periodically enriched to allow employees an advanced People Digital Experience.

Dashboard & Data Analytics

One of the pillars of Open Fiber's strategic plan is to become a data-driven company, i.e. to make data available to top management to support business decisions.

Open Fiber has equipped itself with a platform for the development of data analytics with the aim of defining and monitoring the company's main KPIs (Key Performance Indicators) to facilitate the day-by-day management process and support top management in medium- and long-term forecasts.

During 2022, Open Fiber implemented several monitoring dashboards (from monitoring network construction to monitoring the trends of the main business management indicators) that allow the identification of major deviations and points of attention with respect to the plan and to set up a plan to realign actions and/or define new strategic directions to be taken for business development.

Thanks to the use of dashboards, the People Digital Experience improves and allows information to be presented in a simple, comprehensible way, enabling employees to experience company life as lead actors.

the use of resources, work areas and production cycles, while ensuring high quality in production and process management. At the end of 2022, more than 90 resources were certified.

The Agile PM programme includes a project management methodology and a method for the development and release of products, i.e. everything needed to manage the project life cycle and its strategic alignment through business cases to be studied in order to gain awareness of benefits and added value. At the end of 2022, more than 60 resources were certified.

The training contents of the Project Management programme of the Italian Institute of Project Management are consistent with the UNI ISO 21502:2021 guidelines and international reference credential models. They were developed taking into account the specific references to the Italian legislative and regulatory environment and are generalisable but also adaptable to different specific realities. The objective of the course can be defined as the ability to acquire the necessary know how to correctly define a project within the planned timeframe, the budgeted costs, with the desired level of performance and quality, using the assigned resources effectively and efficiently and to the full satisfaction of internal and external customers. At the end of 2022, more than 90 resources were certified.

5.2.3 Development of skills "Best Of"

The **Best Of** project – a set of initiatives in Development and Training, Company Space Management, Welfare and People Care, and Occupational Health and Safety – continued throughout 2022 with the aim of reshaping the Company, advancing and consolidating the skills of Fiber Leaders and Fiber

Workers, and designing the leadership of the future.

In fact, the project was developed by Open Fiber following a 2021 survey of the entire company population on the new mode of hybrid working in order to gather the views of employees and thus design Fiber Working. The **Fiber Working Maps** were created based on the results, guidelines that reflect the ideal working habits and skills of Fiber Leaders and Fiber Workers.

All company Fiber Workers and Fiber Leaders were therefore involved in a programme of development and training initiatives aimed at boosting and consolidating the key skills that emerged from the Fiber Working Maps.

For Fiber Workers, **working by objectives** and **in synergy with the team**, **communicating clearly and effectively** and showing **openness to change** are the key characteristics. More than 1,400 hours of training were provided to the Fiber Workers.

While the leaders of Open Fiber, given their decisive role in this hybrid context, seek to **create an inclusive working environment** based on trust and listening, keeping the level of **motivation** and **involvement** high towards a **shared vision**, working together to build the best version of Open Fiber. More than 130 leaders were involved in the **Best Of** project, participating in four sessions totalling more than 2,600 hours of training.

The role of the leader in Open Fiber is also distinguished by the attention paid to Occupational Health and Safety and Environmental Protection issues. For this reason, **11 training sessions** with a focus on **Health, Safety and Environment** issues were held as part of the Fiber Leader course, with the aim of spreading the

concept of HSE culture and the added value it represents for the company, and to consolidate awareness of the individual and group contribution to continuous improvement and excellent results, with a view to dissemination throughout the company organisation.

Starting from the Fiber Working Maps, fully tailor-made training and development initiatives aimed at Fiber Workers and Fiber Leaders were implemented, with the aim of training and strengthening the key skills to best cope with the evolving work environment.

5.2.4 Coaching and Team Empowerment processes

Open Fiber is an organisation that not only promotes a climate of cooperation and mutual trust, but also offers its employees opportunities for professional and career growth and development.

Furthermore, it believes that, in order to be successful in their own evolution process, employees must share their knowledge with each other and incorporate new ways of learning. The ability to combine technical and soft skills is an integral part of future success.

BEST of
LA VERSIONE MIGLIORE DI NOI

FIBER WORKING MAPS

FIBER WORKER

WORK BY OBJECTIVES
Knows the objectives to be achieved and independently defines how to do so
Plans activities and is flexible to reschedule them when priorities change
Manages time by reconciling meetings, back office activities and breaks

SMART COMMUNICATION
Uses tools and modes of communication appropriate to different situations
Proactively shares relevant information
Manages meetings effectively, understanding when they are needed, who to involve and how best to use everyone's time

OPENNESS TO CHANGE
Welcomes change in a positive way and seizes the resulting opportunities
Adapts easily and quickly to new needs, situations and ways of working
Keeps motivation high in the face of challenges and the unexpected
Considers error as a source of learning and self-improvement

RELATIONS WITH OTHERS
Actively involves co-workers both in person and remotely
Establishes and maintains strong professional relationships with their team and other areas of the company
Even creates informal contact opportunities with co-workers, not only for work-related issues

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BEST of
LA VERSIONE MIGLIORE DI NOI

FIBER WORKING MAPS

FIBER LEADER

EMPOWERMENT AND DELEGATION
Identifies team objectives, leaving co-workers free to act
Clearly assigns activities, perimeters of competence and areas of delegation, encouraging individual responsibility
Creates constant moments of contact with co-workers to circulate information, monitor the progress of activities and give feedback

POSITIVITY AND ENGAGEMENT
Manages stress and maintains a positive climate
Keeps the team's motivation level high even in difficult times
Stimulates the team to be tenacious and to get out of its comfort zone

OPEN INTERACTION AND VISION
Builds and communicates a shared vision, balancing short- and medium-term priorities
Is always willing to listen to co-workers and open to assessing ideas and proposals that are different from their own point of view
Stimulates the team to experiment, accepts mistakes and uses them as a source of learning

PEOPLE MANAGEMENT
Creates an inclusive and trust-based working environment
Invests time to create training and growth opportunities for co-workers
Recognises efforts and celebrates achievements, valuing everyone's contribution

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912 participants

in the Team Empowerment process since the programme's launch

25 employees

involved in personal growth processes (Individual Coaching)

32 employees

involved in digital coaching programmes

For this reason, support for professional growth is given not only through training and awareness-raising activities, but also through Team Empowerment and Individual and Digital Coaching processes.

Team Empowerment promotes the improvement of people's performance and self-efficacy by developing their latent potential, choice-making skills, and communicative relationships within the work team.

For each team, a tailor-made, flexible and adaptable pathway is built in which the team plays a leading role in defining the contents and objectives. The entire working group is involved, from the director and supervisors to the collaborators, at different times and in different ways.

Team Empowerment "Made 4 Team" consists of five steps:
1. **Team Meta-Design:** defining the **main expectations and objectives** for action in the teams by each Director and top management.
2. **Team Self-Design:** listening to the needs of the teams involved and defining the **pathway's macro-objectives.**
3. **Team-Shape:** increasing the awareness of individuals and the team regarding areas of strength and development, decision-making, conflict management and execution.
4. **Team Coaching:** identifying **concrete actions** aimed at achieving the objectives defined, thanks to the guidance of the

TEAM EMPOWERMENT GOALS

Support teams in achieving **business objectives**

Improve **internal team dynamics**

Put in place a dedicated **listening channel**

Strengthen the **leadership** of coordination figures

Boost the **dissemination of values**, applying them in operations

Increase **motivation** and **engagement**
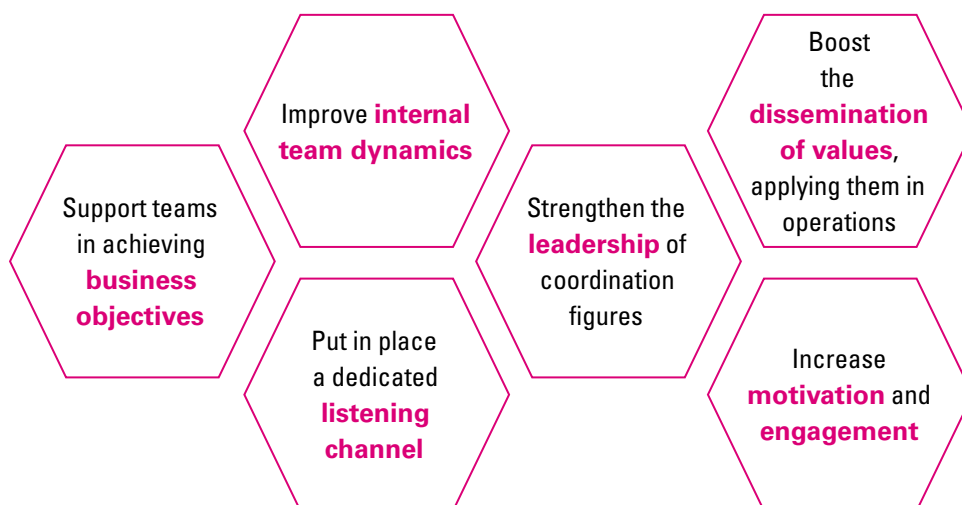
coach and the **sharing of tools** that can be used immediately by the team.

5. **Team Building:** strengthening team spirit, increasing cohesion, getting to know colleagues outside of the office and sharing commitments.

A total of about 912 employees were involved in 2022.

The company **Individual Coaching** course – which for the year 2022 involved 25 new employees – aims to contribute to the growth of coordination figures and develop managerial skills in order to effectively protect their role, processes and company dynamics.

In 2022, the Individual Coaching course was joined by a **Digital Coaching** course – which involved 32 employees – aimed at Key People and delivered through a flexible, customisable digital platform with the aim of supporting and promoting the strengthening and development of skills in line with the company's organisational needs.

The **Digital and Individual Coaching** starts with a meeting aimed at explaining the purpose of the coaching process, continues with a phase during which individual development goals are defined by the coachee and coach, and ends with a series of meetings aimed at identifying effective actions to achieve the goals set forth and verifying the lessons learned through the process.

A tree is planted for every digital coaching course started.

5.2.5 Behaviour & Performance Evaluation

Behaviour & Performance Evaluation
The pandemic has profoundly changed the way we work and relate to each other, making smart working an integral part of our corporate culture. The company's Fiber Working model has made it possible to work nimbly, even remotely, and to continue to pursue the company project with enthusiasm and determination, but it has also substantially changed everyone's working methods and, consequently, the skills and abilities required for this new way of working.

For this reason, in 2022 Open Fiber launched a project to revisit the behaviour and performance evaluation process with the aim of ensuring a measurement and development system in step with the evolution of the working world, and updated its values and behaviour model in line with the skills required by the Fiber Working Maps.

During the second half of 2022 the **2022-2023 Behaviour & Performance Evaluation** was launched, a performance management process organised by Open Fiber for the entire company population.
The process introduced new and different distinctive elements from a people-centric perspective, including a new way of assigning **individual development goals** according to a bottom-up approach.

In order to improve the dynamics within the working group and strengthen the team identity, another new aspect of the process is the opportunity to also consider **team development objectives** in addition to individual goals, and the manager-worker interviews have also been intensified with the aim of boosting the culture of feedback within the Company.

Individual Development Assessment
As part of Open Fiber's talent management policies, several Individual Development Assessment paths were designed and implemented during 2022, differentiated by clusters of the company population, with the aim of supporting the individual growth of resources and accelerating their individual development, facilitating internal development with respect to the company's needs and the evolution of the organisation, mapping the target company population to identify valuable resources, also in order to create a pipeline of talent at various levels of company seniority and measuring the level of involvement towards the Company, the role and values of Open Fiber. Over 100 employees were involved in the second half of 2022.

INDIVIDUAL DEVELOPMENT ASSESSMENT OBJECTIVES
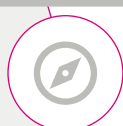
MAP the target company population to identify valuable resources, also in order to create a pipeline of talent at various seniority levels

SUPPORT individual and team resource growth and accelerate their professional development

FACILITATE internal development with respect to the company's needs and the evolution of the organisation
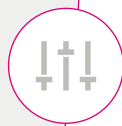
MEASURE individual performance, the level of engagement with the company, OF's role and values

STRENGTHEN Open Fiber's distinctive capabilities, in accordance with the company's strategic objectives, mission and vision

5.3 THE WELL-BEING OF OUR PEOPLE

Management and organisation, individual well-being, working conditions, health, safety and risk prevention[89]. These are the guidelines which every day help Open Fiber to improve the quality of life of its people, the beating heart of the company.

In particular, Open Fiber's Welfare programme includes three areas:
- **People Care:** initiatives aimed at favouring the psychological and physical well-being of people.
- **Family Care:** initiatives aimed at favouring work-life integration.
- **Community Care:** initiatives aimed at favouring culture and the so-called "social well-being".

The centrality of people is one of Open Fiber's main cornerstones and is reflected both in the numerous Welfare initiatives and in the agreements with employees and their representatives on gender equality, remote working, risk prevention and safeguarding of occupational health.

5.3.1 Communication channels

With the aim of improving the quality of life of its people, listening to their needs and requirements and gathering ideas directly by the company population, Open

Fiber has activated direct channels for listening and assessing people's needs. These are mainly **periodic surveys** focused on specific topics, **focus groups** created in partnership with specialised suppliers and **Eureka**, the communication channel where each employee can propose a project or initiative they would like to see implemented.

The management interviews that each employee has the opportunity to have throughout the year with their HR Business Partner are particularly valuable. Equally important are parenting talks held before starting mandatory maternity leave and before new mothers return to the company.

5.3.2 Work-life balance and support to parenthood

In order to help balance work and personal needs and to give value to the parental responsibility of its employees, Open Fiber has conceived and designed a series of targeted projects.

In addition to guaranteeing its employees the benefits provided for by law, the Company has signed a **Level II Agreement** through which it undertakes to offer them further support in terms of hourly flexibility. In terms of parenting support,[90] the Level II Agreement provides for:
- Parental leave and support for new parents: in addition to the legal provisions, an allowance of 50% of the salary is paid by the Company for the first 4 months of leave, then 30% for a further 2 months. The leave can be taken until the child's 6th year of life, also in a non-continuous manner, and from the 6th to the 8th partially paid according to the income received.

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89 For more details, please refer to paragraph 5.5 "Open Fiber's work to ensure Health and Safety".
90 For more details see paragraph 5.4 "Diversity, Equity & Inclusion".

BACK TO SCHOOL

Let's do it together!

Also in 2022, the **Back to School** programme was launched, paid leave granted to employees with children up to the 3rd year of middle school to accompany them on the first day of school. Moreover, employees with children attending up to the 1st year of primary school were given the opportunity to apply for up to five additional days of Fiber Working.

For the Christmas holidays, the Open Fiber offices opened their doors for Open Kidsmas Day 2022, an event dedicated mainly to the children of employees up to the age of 12, with games, live concerts, meetings with Santa Claus and a final toast in direct connection with all Open Fiber offices.

- Increase in paid paternity leave to 15 days (including INPS days) for child birth, adoption or pre-adoption foster care.
- Granting of paid leave for children's illness up to 5 days per year and extended up to 14 years of age, which can also be taken by the hour.
- Recognition of paid leave of up to 24 hours a year for personal medical examinations and for accompanying children until their coming of age.

Open Fiber also promoted activities for the children of employees, divided according to their age group. In June and July 2022, the second editions of **Weschool** and **Codemotion** were launched. The **Weschool** initiative allowed employees' children to participate in individual tutoring through a digital learning platform. The participants learned more about the subject of their preference with a tutor specialised in teaching and pedagogy or a native speaker with the aim of finishing the school year in the best possible way. The **Codemotion** initiative, on the other hand, gave the children of Open Fiber employees the opportunity to get closer to technology and the STEM[91] world by participating in interactive online workshops dedicated to coding, robotics and digital creativity. At the end of the course, the boys and girls presented their projects in a contest in which they were rewarded with space-themed Lego® constructions.

5.3.3 Open Welfare

The initiatives in favour of employees are conveyed through the **Open Welfare** portal, an exclusive platform that gives everyone the opportunity to access and activate with a simple click an extensive list of services, including Work-life balance and Caring measures.

The activities planned include the possibility for employees to convert their bonus – free of tax and with an increase of up to 15% – into a Welfare credit that can be spent on goods and services: education, health, caregiving for family members, babysitting, supplementary pensions, repayment of mortgage interest, sports, culture, wellness, travel, transport, shopping vouchers.

FUEL BONUS AND HOUSEHOLD UTILITIES

In order to contain the economic impact of the increase in fuel prices, Open Fiber employees were able to request a fuel bonus worth €200 in Welfare Credit through the Open Fuel Plan and the reimbursement of expenses incurred for the use of electricity, gas, water or electricity+gas through their Welfare Credit.

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91 Science, Technology, Engineering and Mathematics.

5.3.4 A people-friendly working environment, in the office as well as at home

Welfare, teamwork, and comfortable working environment: these are the resolutions that Open Fiber is committed to pursuing day after day, year after year. And it is in this spirit that the Company considers it essential to promote a Work-life integration, that is, a balance that allows each employee to reconcile private and working life.

With this in mind, in 2021 Open Fiber signed an agreement on Smart Working, which has become an integral part of our corporate culture, offering the possibility of alternating between working in the office and working remotely for a total of 10 days per month.

The building of a new hybrid working model continues, our **Fiber Working** model, developing a culture of agile working also through training courses dedicated to managers and collaborators, the so-called Fiber Leaders and Fiber Workers of the future.

Moreover, in order to improve and make Fiber Working even more comfortable, in line with the previous year, in 2022 the DTTH 2.0 (Dotazioni To The Home, Equipment To The Home) project was relaunched for the third consecutive year, namely the delivery of equipment (ergonomic chairs and IT equipment) to employees' homes.

5.3.5 Health, Wellness & Wellbeing

Open Fiber considers the **health** of its employees to be of primary importance: for this reason, it has introduced a **supplementary health insurance** policy for the entire company population, which also includes coverage for the cohabiting partner or the civil partner and children.

In order to deal with the emergency linked to the COVID-19 risk, a **supplementary insurance policy** remained in place for 2022 for all employees, which provides for hospitalisation allowance (for each day of hospitalisation exceeding the 3rd day for a maximum of a further 10 days), recovery allowance following hospitalisation in intensive care caused by infection by COVID-19 and a package of post-hospitalisation assistance also aimed at family management (sending a general practitioner, transport by ambulance, sending a family helper: baby-sitter at home, pet-sitter).

Gioca d'anticipo con la prevenzione.
OTTOBRE È IL MESE DELLA PREVENZIONE SECONDARIA NELLA DONNA.

Gioca d'anticipo con la prevenzione.
NOVEMBRE È IL MESE DELLA PREVENZIONE SECONDARIA NELL'UOMO.

Again in 2022 Open Fiber launched two **prevention campaigns**, in October and November (recognised respectively as Women's and Men's Prevention Month). A way to invite the company population to make use of the prevention package provided by the health insurance to book a free check-up in a facility that has a convention agreement with Open Fiber.

In order to promote the **physical well-being** of all employees, the use of the virtual Fitprime platform for physical activity continues. Using the dedicated app, it is possible to access a network of gyms and sports centres at highly discounted prices, to exercise at home by participating in live classes, and to receive a customised diet plan from dedicated professionals.

Moreover, the first edition of the **City & Workout Experience** initiative was launched in September 2022. More than 150 Open Fiber employees participated in outdoor, aerobic and toning training sessions. Followed by a professional trainer and equipped with wireless headphones, participants exercised among the architectural and natural beauty of Rome, Milan and Padua.

5.4 DIVERSITY, EQUITY & INCLUSION

Inclusive and **Open-minded**: this is the working environment that Open Fiber is committed to ensuring, promoting the enhancement of diversity and different individual strengths. A strategic asset for the achievement of the corporate objectives that Open Fiber pursues through compliance with certain guiding principles: gender equality and protection of women, maternity and family care, disadvantaged areas and support for workers, multiculturalism, and attention to disabilities.

At Open Fiber we believe in the value of uniqueness. The diversity that characterises each of us is a valuable resource, a source of complementarity, capable of impacting the environment, people and results. Open Fiber is working on the development of the **Unique Connections** programme, which will embrace all initiatives involving personnel and which focuses on Diversity, Equity & Inclusion, putting the uniqueness of people at the centre and demonstrating Open Fiber's orientation towards emerging sustainability issues. The programme started with a survey to investigate the

UN MONDO DIVERSO È POSSIBILE

level of perception of diversity in the company. The programme includes a plan for initiatives striving towards excellence, consistent with the company's values, to guide Open Fiber's growth and evolution. Based on the results of the survey, initiatives will be launched in the areas where it is most important to take action, such as webinars for the entire population and training for Fiber Leaders. The programme aims to value differences, ensure equal growth opportunities for

every person regardless of gender, age, origin and background, and nurture an inclusive culture that everyone feels they belong to.

The focus on Diversity & Inclusion is one of the 20 topics that were analysed for the Top Employer Italy certification and the Great Place to Work workplace quality certificate.

5.4.1 Gender equality & women safeguard

Open Fiber guarantees all staff equal opportunities in hiring, careers and development, putting in place ad hoc programmes that facilitate inclusion and enhance female talent with the aim of reducing the gender gap in the country.

Quotas for women in technical professions

Open Fiber promotes the importance of Diversity & Inclusion right from the personnel selection phase, ensuring a pipeline equally composed of male/female candidates and fulfilling quotas of female hires for technical positions.

Role Models for tutorship and mentoring projects (2018-2022)

The goal of the project is to identify women in key positions within the company in order to orient female students from middle schools, high schools and universities in disadvantaged areas of Southern Italy with regard to the professions of the future. Employees who can become agents of change and mentors, with a view to inclusion and empowerment of female talent.
- **+ 160** selected Italian schools among middle schools and high schools (technical institutes and lyceums) and more than 5 universities in Southern Italy will participate in the project in the next 2 years.
- **+ 51,000** students involved.
- **+ 40** participating companies.
- **16** Open Fiber Role Models engaged.

YEP – Young Women Empowerment Programme

Open Fiber continues to support YEP, the mentoring programme to combat gender inequality in the South of Italy promoted by Ortygia Business School, a foundation whose mission is to increase cooperation and economic development between Mediterranean countries. The project seeks to offer the latest generations useful tools to guide their personal and professional choices and promote confidence in the future. Thanks to YEP, deserving young women enrolled in a Master's degree course in economics and STEM faculties at leading universities in Southern Italy are accompanied by as many established professionals in a one-to-one mentoring relationship. The objective of the programme is to bring young female students closer to the working world, to provide them with useful tools to make informed academic and career choices and to offer inspiring female role models. The opportunity is totally free for female students and university institutions.

Ingenio al Femminile Thesis Award

Once again in 2022, Open Fiber was the company ambassador of the Ingenio al Femminile Thesis competition promoted by the National Council of Engineers (CNI) with the aim of awarding prizes to recent female graduates in STEM disciplines who have drafted brilliant engineering theses.

Employee Assistance Program

A tailored programme of psychological, legal and fiscal support, free of charge and anonymous, for all employees and their families, 24/7. In 2022 a socio-assistance counselling service was also launched, offering support through remote counselling with qualified personnel and on-the-spot assistance from a care manager who accompanies the employee in solving their problem, coordinating directly with the services in their local area.

5.4.2 Maternity & all kind families care

Open Fiber supports parenthood and families through the integration of leaves and absences, the extension of health insurance to all types of families, the implementation of hourly flexibility and smart working, the organisation of events and initiatives dedicated to parents and children.

5.4.3 Disadvantaged areas & workers support

Believing that it can make a difference, Open Fiber is keen to offer the same opportunities for growth and training: this is why it encourages social inclusion by working with institutions in disadvantaged neighbourhoods and pays particular attention to the inclusion of junior and senior professionals belonging to particular categories of workers.

Integration of parental leaves and absences

The initiative provides for the integration of parental leave into pay, which can be taken up to the child's 6th birthday, also in a non-continuous manner, paternity leave increased to 15 days, leaves for children's illnesses increased to 5 and extended up to 14 years of age and for accompanying children to medical check-ups.

Extension of health insurance to all types of families

This is an insurance policy that also covers cohabitees, civil partners and children.

Projects for families

Reconciling work and personal needs and supporting the parental responsibility of its employees are key elements for Open Fiber, which every year proposes a series of initiatives aimed at involving the families and children of employees: Codemotion, Weschool and Open Kidsmas are just a few examples of this commitment.

Fenix project

The project is addressed to 20 minors and young adults – aged between 14 and 20 – subject to measures restricting their personal freedom. The initiative combines psychological support for young people with technical and professional training in line with the demands of the labour market, providing the beneficiaries with immediately usable skills that make it easier for them to find a job. The main objective of the project is to provide training in the digital field, not only because professions in this sector are increasingly in demand, but also to educate young people in the use of smart devices, which are often a vehicle for cyberbullying and other crimes. Open Fiber supports this project by offering a curricular internship within the company.

Prison Work Programme at Rebibbia Prison

Open Fiber, in partnership with Open Fiber Network Solutions, has joined an initiative promoted by the Ministry of Justice and the Department for Digital Transformation for the professional reintegration of prisoners, launching a social inclusion pilot project with the Rebibbia Prison in Rome in 2022. The aim is to create a qualifying job opportunity for inmates in the telecommunications sector, offering education as part of their rehabilitation while also contributing to the country's digital development. Selected inmates participated in a training course for fiber-optic splicing technicians and some of them will be placed within the Open Fiber Network Solutions sites.

Recruitment of disadvantaged categories

Particular attention is paid to the recruitment of junior and senior professionals belonging to disadvantaged categories of workers (unemployed, long-term unemployed, workers on fixed-term contracts, workers in disadvantaged production sectors, etc.).

5.4.4 Multiculturalism

Open Fiber guarantees an inclusive working environment, aimed at enhancing diversity also due to cultural factors, favouring the creation of a heterogeneous workforce composed of different nationalities: Open Fiber employees come from over 100 companies and 19 different nationalities.

5.4.5 Disability Confidence

Open Fiber cares about disability and shows this not only by removing any environmental and architectural barriers, but also by adopting an approach aimed at valuing diversity, structuring an organisational process that supports each colleague in achieving their professional goals.

Diversity Career Day

The company took part in the circuit of Diversity Digital Career Day events devoted to people with disabilities and protected categories, in order to make it easier for them to find a job and enter the labour market. In 2022 Open Fiber participated in the digital "2022 Inclusion Job Day" promoted by CESOP.

Open Learning

For Open Fiber, innovation is of utmost importance and is one of the pillars of a digital society. For this, access was guaranteed to training pills with subtitles made available on the Open Fiber website so that they can also be watched by deaf people.

5.5 OPEN FIBER'S WORK TO ENSURE HEALTH AND SAFETY

The protection of the Health and Safety at Work is a central issue for Open Fiber, which it focuses on every day in an effort to minimise risks, developing initiatives addressed to employees and all those who in any capacity operate within the company's premises, technology sites and in the areas of Creation, Delivery & Assurance.

Open Fiber has identified and assessed the risks related to business activities and workplaces where they are carried out in full compliance with current legislation on Occupational Health and Safety, identifying the best possible solutions to reduce these risks and take the most appropriate prevention and protection measures. In order to identify the risks, on-site inspections, interviews with company personnel and instrumental surveys are carried out, guaranteeing discussion with the Workers' Safety Representatives (literally Rappresentanti dei Lavoratori per la Sicurezza, RLS) and the participation of company physicians. An important role is played by the occupational health service which, through health surveillance, protects the Health and Safety of workers, taking into account occupational risk factors related to the work environment and the activity they carry out in it.

The management of Occupational Health and Safety involves all levels of the company organisation, from the Managing Director to the employees, also through their representatives, ensuring a joint analysis and discussion among all parties involved. Relations with the RLS are maintained by the Personnel Management function of the Personnel, Organisation and Services Department which, with the support of the Prevention and Protection Service (Servizio di Prevenzione e Protezione, SPP), organises periodic

meetings for the sharing of Health and Safety issues of Open Fiber employees (e.g., meeting pursuant to art. 35 of Legislative Decree 81/08).

In this context, the Management System implemented by Open Fiber, certified for the Occupational Health and Safety component according to the UNI ISO 45001 standard is an important tool for the continuous improvement of company performances, ensuring the highest standards of Health and Safety as well as full compliance of the organisation with current legislation and agreements made with employees and their representatives. This system applies to all employees of Open Fiber in all company locations and applies to all activities carried out by third party companies with whom Open Fiber has signed agreements as part of the implementation and management of the network[92].

5.5.1 Performance monitoring

Among the most significant indicators in the field of Occupational Health and Safety, Open Fiber monitors the trend of accident performance, related not only to its own employees, but also to contractors and subcontractors operating within the Creation, Delivery and Assurance activities. The analysis of accident indexes aims to monitor performance over time to identify any anomalous trends and possible related causes, as well as to identify areas of weakness and areas of concern where corrective and improvement actions should be taken, evaluating their effectiveness.

In 2022 Open Fiber recorded a minor injury among its employees, which led to a slight increase in the frequency index from 0 to

92 For more details, see paragraph 1.6 "The QHSE Management System".

0.41. In contrast, the accident performance of companies involved in Creation, Delivery and Assurance is improving, where the accident frequency is decreasing.

Lost Time Injury Frequency rate

Open Fiber FR   Contractors FR   Overall FR
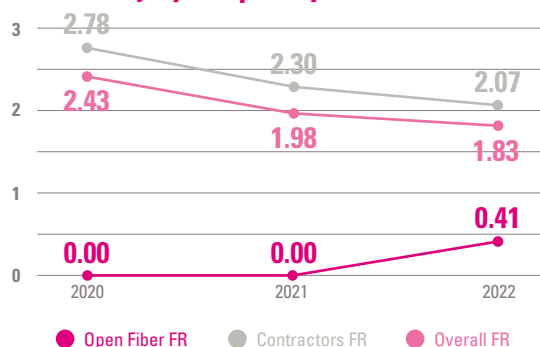
By analysing the works foreseen for the construction and maintenance of the optic fiber infrastructure, Open Fiber has identified the main risks that could cause serious injuries to the workers involved: manual handling of loads (in particular handling of elements of variable weight consisting of network elements and materials such as manholes, cabinets, reels), being run over (the activities are carried out on roads or at the side or very close to roads and roads with ordinary traffic in urban and suburban areas), crushing of limbs, as well as shocks or

impacts (one of the highest risks is the opening and closing of manhole covers, generally made of cast iron and with a "segmented" opening), electrical risk (in particular for certain underground or overhead laying activities that may take place near electrical cables), risk of falling from a height (work frequently involves laying cables on poles and/or on the façade of buildings in both urban and suburban areas).

Open Fiber has defined a specific procedure for the analysis of occupational accidents and injuries, which is implemented whenever an accident occurs, in the context of the activities carried out by the Company's personnel or the activities covered by the contract for works or services between Open Fiber and contractors and subcontractors, including contracts with self-employed workers and consultants. Based on the seriousness of the accident that occurred (classified as green, yellow or red code), a specific process of analysis of the event is implemented, which, for the most serious events, provides for the establishment of a multifunctional Investigation Team, coordinated by the QHSE Contact Person of the Security QHSE, Energy Management & Sustainability Function.

403-9: WORK-RELATED INJURIES

Description		U.M.	2020	2021	2022
Open Fiber	**Lost time injuries**[93]	**no.**	**0**	**0**	**1**
	Commuting injuries	no.	1	2	3
	Lost time injuries Frequency rate	–	0.00	0.00	0.41
	Frequency rate for lost time injuries with high consequences[94]	–	0.00	0.00	0.00
	Frequency rate for work related injuries including commuting injuries	–	0.52	0.92	1.65
Contractors[95]	**Lost time injuries**	**no.**	**36**	**31**	**29**
	Lost time injuries Frequency rate	–	2.78	2.30	2.07
	Frequency rate for lost time injuries with high-consequences	–	0.00	0.07	0.07
Overall performance (Open Fiber + Contractors)	**Lost time injuries**	**no.**	**36**	**31**	**30**
	Lost time injuries Frequency rate	–	2.43	1.98	1.83
	Frequency rate for lost time injuries with high-consequences	–	0.00	0.06	0.06

93 Lost time injuries (including serious injuries) that resulted in at least one day's absence, excluding the day of the occurrence. Commuting injuries are not included in the calculation..

94 Injuries with serious consequences are those with more than 6 months' absence, excluding deaths. In the calculation of the frequency index, injuries with a prognosis of more than 180 days by 31/12/2022 were taken into account.

95 Workers who are not employees, but whose work and/or place of work is under the control of the Company.

The aim of this process is to analyse and identify the **immediate causes** that directly led to the accident (e.g., technical causes) and the **underlying causes** (so-called root or original causes), after which corrective action and improvement measures are defined, the effectiveness of which is verified with a subsequent follow-up. Even during such investigations, the information concerning the workers involved is treated in full compliance with the Privacy Code adopted by Open Fiber.

5.5.2 Mitigation of impacts

The activities carried out by Open Fiber as part of the construction, management and maintenance of the network, if not properly managed and planned, can have a negative impact on the Health and Safety of people, exposing the staff employed (mainly external) to potential accidents.

Should undesired events occur, in addition to damaging the integrity of individuals, they could lead to penal or civil sanctions against those responsible and, in some cases, to violations also pursuant to Legislative Decree no. 231/2001, with consequent additional costs for the Company and damage to its image and reputation.

The construction, management and maintenance of the network – which mainly involves external personnel – is subject to the normal risks associated with work activities (e.g., excavations, use of equipment and means of work, opening of manholes and underground equipment) and to risks associated with external man-made interference (e.g., vehicle and pedestrian traffic, the presence of infrastructures for the provision of public utilities such as gas, water and electricity) or environmental/climatic (e.g., ordinary and extraordinary climatic events, natural disasters). The risks linked to normal work activity can be connected mainly to

incorrect execution of work phases and improper use of equipment and means of work. In order to address such risks, Open Fiber has developed a Management System which, for the Occupational Health and Safety component, is certified according to the UNI ISO 45001 standard. This Management System applies to all activities related to the Company's business, including those on which there are contracts and supply agreements: to this end, within the general terms and special conditions of the contract, explicit reference is made not only to the legal obligations on the subject – mainly deriving from Legislative Decree 81/08 – but also to compliance with the procedures and operating instructions of the Open Fiber Management System aimed at pursuing continuous improvement of the company's performance. In order to firmly guarantee compliance with the regulations in force and with internal procedures, a series of penalties to be applied in the event of non-compliance in the field of Occupational Health and Safety is provided for in the agreement. Attention is paid to contractors and other suppliers who, on a daily basis, work alongside Open Fiber throughout all phases of implementation of the agreement:

- Initial phase: the Company promotes information meetings with the service contractors under contract to share and investigate the main criticalities detected in the work activities with a view to preventing the main risks and sharing the Management System documents.
- Execution of the contract: Open Fiber promotes periodic meetings with the contractors of services and works, during which it shares the results of controls carried out at the worksites and the processing of data in the company systems to monitor and improve performance. These findings are also sent monthly to the contractors through automatic emails generated by the Business Intelligence platform developed by Open Fiber.

Moreover, in order to ensure a capillary presence on the territory and the performance of adequate checks on compliance with the regulations in force in the field of tenders, Open Fiber launches invitations to tender for services, including the safety coordination service. Within the tenders, in order to select the most suitable profiles, in addition to the minimum requirements provided for by law for the roles, more rigorous requirements are specified, which result in qualifying technical scores. In 2022, with the aim of further improving the surveillance and control process, quarterly assessments were introduced to control the performance of service providers through the development and monitoring
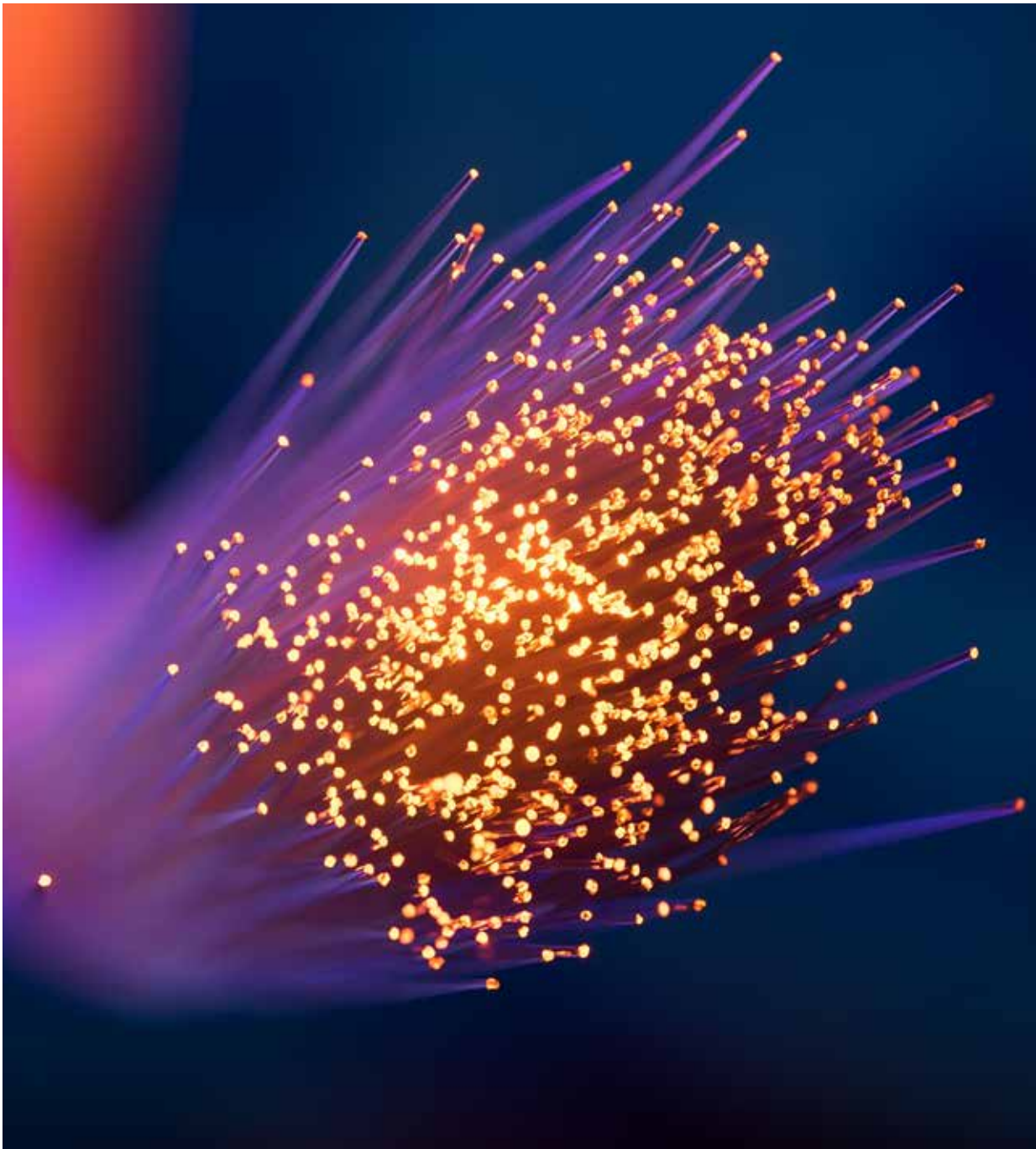
of a series of Key Performance Indicators (KPIs) relating to contractual obligations that contribute to the development of the Vendor Index.

With regard to the risks associated with the Health and Safety of its workers, in addition to continuing to provide specific mandatory training in Occupational Health and Safety aimed at all newly hired staff with a specific focus on the importance of the cultural approach to Health and Safety issues, Open Fiber pursued and implemented a series of specific initiatives during 2022, including:

- Launch of the **C.A.R.E. programme**, an initiative aimed at strengthening the HSE culture at all organisational levels by acting on 4 drivers (Communication, Awareness, Responsibility, Engagement) to increase the sense of responsibility at all levels, increase employee and supplier involvement, enhance the culture and boost communications with employees and suppliers.
- Adoption for all personnel of a training model extended beyond the regulatory obligation, in line with the work activity carried out with contents identified as necessary.[96] Within the framework of this model, which provided for specific training sessions for staff working on the field

and Operational Support staff, targeted initiatives were developed, such as:

- OnBoarding programme[97] and in-depth sessions on the management of Health and Safety at the worksite and on the management of significant environmental aspects related to network construction and maintenance.
- Health and Safety Portal of Open Fiber, an engine for the dissemination of the culture of safety, divided into a series of areas (regulatory area, educational area, multimedia area, reserved area, useful links) and with the aim of providing all Open Fiber personnel with a single reference point for Occupational Health and Safety.
- A notice on general company risks and behaviour to be adopted in case of emergency, on the use of personal protective equipment and for work carried out in Fiber Working mode.
- A notice on risks and behaviour to be adopted by workers during visits to Open Fiber's construction and technology sites.
- Introductory information video on business risks and emergency behaviour shared in the virtual classroom during OnBoarding sessions for all new employees.

C.A.R.E Programme

Open Fiber strongly believes that the focus on Health and Safety at Work and Environmental Protection is a top priority. For this reason, through the **C.A.R.E. programme** (Communication, Awareness, Responsibility, Engagement), we want to promote a culture of Health and Safety and environmental protection, based on the Safety Culture Ladder model. According to this model, it is possible to identify 5 steps of the "safety ladder" (Pathological, Reactive, Calculative, Proactive and Generative), which constitute the watershed between the two main approaches of organisations to the management of HSE issues: Blame Culture (the approach according to which any incident can be traced back to an employee's wrongdoing) and Just Culture (the approach according to which each employee feels he or she is the main actor in reporting hazardous conditions and solving them proactively). C.A.R.E. aims to strengthen the HSE culture in Open Fiber, moving towards the Just Culture area. The programme is developed around four drivers (Communication, Awareness, Responsibility and Engagement) for each of which various initiatives have been organised over the course of 2022.

96 For more details, see section 5.2 "Growth and training of our employees" and 5.3 "The well-being of our people".
97 For more details see paragraph 5.2 "Growth and training of our employees".

Communication

- **HSE Corner:** video to disseminate best practices among companies and discuss an important incident at the start of works on site.
- **Open SPP:** five meetings were held to disseminate occupational health and safety protections to key corporate functions with the ultimate aim of improving performance on HSE issues. This initiative was designed with the dual purpose of illustrating the organisation and activities of Open Fiber's Prevention and Protection Service and finding the widest possible synergies with the participating functions in order to optimise the activities of the Prevention and Protection Service and to facilitate the interface of the various internal customers.
- **MY Safety:** the first Health & Safety portal on MYHR was created in 2022. The portal is structured in three main sections: an area dedicated to laws containing the rules and regulations on Health and Safety at Work, taken from the various sources indicated and updated quarterly by the SPP, but also useful references for finding guidelines and good practices relating to the world of Occupational Health and Safety; an educational and multimedia area where the materials of the training courses have been uploaded, documents with information on the risks present in Open Fiber workplaces and in-depth studies on specific Occupational Health and Safety topics; an area dedicated to near miss reports (unsafe behaviour and dangerous conditions). The creation of this portal is another step that reflects the company's awareness of the importance of Health and Safety communications to employees.
- **Monthly HSE newsletter:** regulatory update newsletter to provide the main updates on Occupational Health and Safety and Environmental Protection. In addition to newsletters, it may be necessary to complete refresher courses or provide additional instruction.

Awareness

- **HSE Pills:** 2 new specific training pills. The "Contract Management & HSE" pill aims to raise awareness of HSE issues related to Creation, Delivery and Assurance and contract management. "The importance of communicating safety" pill uses three practical simulations to improve the communication of near misses and the importance of reporting, the management of conflicts that, for example, might arise on a job site, and the importance of using protective equipment.
- New edition of **Necessary HSE Training** for Regional Managers, Field Managers and HSE Operational Support, to improve knowledge of regulations and recent best practices on Open Fiber activities.
- **HSE Induction Training** for all new employees of Open Fiber.

Responsibility

- **HSE Fiber Leader:** developed as part of the Best Of competence development programme, HSE Fiber Leader provided training sessions for *middle management* to strengthen leadership in HSE.
- **Service performance meetings:** topical meetings between service companies involved in the building of the network (construction management and safety coordinators) and Open Fiber's Operational HSEQ team, aimed at improving performance.
- **Contractor performance meetings:** topical meetings between company managers and Open Fiber's Operational HSEQ team, aimed at improving HSE performance in the context of Network Creation activities.

Engagement

- **Best-in-Class Contractors:** design of a system for the subsequent evaluation and rewarding of companies achieving the best HSE performance. The programme will be launched in 2023.
- **Best HSE Employees:** design of a system for subsequent evaluation and rewarding of virtuous HSE conduct awarded to the most efficient employees. The programme will be launched in 2023.

6.0 | GUIDANCE

The 2022 Open Fiber Sustainability Report is an effective and volunteer tool adopted by the organisation to share with its internal and external stakeholders the commitment and initiatives undertaken on economic, social and environmental issues. This document has been prepared in such a way as to ensure an understanding of Open Fiber's activities, its performance, results and impacts produced with reference to material issues.

The report's structure was defined on the basis of the results of the materiality analysis, focusing it more on the material topics, to which specific in-depth paragraphs were dedicated, addressing the individual topics and reporting the related indicators (also reported in detail within the paragraph).

For further details on customer, community and local initiatives, please visit www.openfiber.it.

6.1 METHODOLOGICAL NOTE

Open Fiber prepared the Sustainability Report in accordance with the 2021 GRI Standards published by the Global Reporting Initiative (GRI) in 2021 for the reporting period 1 January 2022 - 31 December 2022.

In keeping with the standards of reference and in order to ensure the quality and proper presentation of the reported information, the content definition process followed the principles of accuracy, balance, clarity, comparability, completeness, sustainability context, timeliness and verifiability. Consistent with these principles, the period of reference of this document is the 2022 financial year (1 January to 31 December) and where possible the performance indicators refer to the three-year period of 2020-2022. In order to provide a comprehensive view of the company's performance, the most significant events that occurred in the first months of 2023 were reported.

The information and data contained in this Report refer exclusively to Open Fiber

S.p.A. Within the document, there is also a general qualitative information about Open Fiber Network Solutions, a consortium made by Open Fiber together with Amplia Infrastructures and CIEL, established in 2022 with the aim of advancing Italy's digital and technological transformation[98].

Within the report, all disclosures contained in "GRI 2 – General Disclosures 2021" have been accounted for. Where certain disclosures have been omitted for valid reasons, this has been noted in the "GRI Content Index" with explanations for the omission. The material topics for Open Fiber were identified and reported in accordance with the criteria set out in "GRI 3 – 2021 Material Topics" and the applicable disclosures of the "GRI Specific Standards" were reported for each of them. If there were more suitable instruments to represent Open Fiber's performance on a specific topic (e.g. Annual Report and Code of Ethics), reference was made for discussion or further analysis in the relevant sections and in the "Comments" column of the

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98 For more details, see paragraph 4.4 "Open Fiber Network Solutions".

GRI Content Index. There are currently no sectoral GRI standards applicable to Open Fiber's business. The GRI Content Index was published in the report itself and the use of GRI Standards was notified to GRI.

Finally, reference has been made to the main Sustainable Development Goals (SDGs) of the United Nations Agenda 2030, to which Open Fiber contributes through its activities.

6.2 IDENTIFICATION OF MATERIAL TOPICS

In 2022 Open Fiber updated its materiality analysis in accordance with the new 2021 GRI Standards in order to identify material topics, i.e. those issues that represent the most significant impacts the organisation has or could have on the economy, the environment and people, including impacts on human rights.

The process started with an analysis of the context the company operates in with the aim of identifying the positive and negative impacts that affect it (actual) or could affect it (potential) along its value chain. Specifically, the following analyses were performed:
- Analysis of key industry trends, reporting standards and international sustainability ratings;
- Analysis of applicable laws, including policy regulations (e.g. PNRR, Taxonomy).
- Benchmarking of competing and comparable companies through the primary public sustainability and social responsibility documents;
- Press review with the main articles about the company in the reporting year.
- Analysis of company documentation such as policies, internal procedures, relevant documents on the system of internal rules (e.g. Code of Ethics) and documents formalising management systems in accordance with international standards

adopted by the organisation (e.g. ISO 9001, ISO 14001, ISO 45001, ISO 27001).

The analyses performed identified **22** actual and potential positive and negative environmental, social and economic **impacts**, including human rights, that can be linked to Open Fiber's business and its value chain. The significance of the identified impacts was then assessed according to their severity[99] for actual impacts and the combination of severity and likelihood of occurrence for potential impacts.

In order to prioritise the impacts and identify those most relevant for Open Fiber, a dedicated workshop was organised, during which the Sustainability Committee validated the analyses performed and the significance of each of the impacts identified. This process led to the identification of the 13 most significant impacts, which were in turn linked to **12 material topics** below:
- **Fight against corruption:** fighting cases of corruption and misconduct, in full compliance with current legislation and international conventions on the subject, developing incisive, concrete and transparent practices in line with the Code of Ethics and the 231 MOG Model adopted by Open Fiber.

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99 For negative impacts, severity is determined by: 1) Scale, i.e. how severe the impact is. 2) Scope, how widespread the impact is. 3) Irremediable character, how difficult it is to mitigate or compensate the resulting damage. For positive impacts, severity is determined only by the first two criteria already mentioned for negative impacts, namely: severity scale and scope.

- **Transparency and equal access:** preventing anti-competitive behaviour and avoiding unfair competition practices by adopting a wholesale only business model and guaranteeing free access to the network infrastructure tall interested operators on equal terms.
- **Fighting climate change:** promoting initiatives, programmes and investments to reduce energy consumption and greenhouse gas emissions through energy efficiency projects, use of renewable energy sources and initiatives aimed at decarbonisation.
- **Occupational Health and Safety:** guaranteeing working conditions that ensure the health and safety of all those who collaborate in the pursuit of the company's objectives in any capacity through the implementation of procedures and monitoring systems and through the dissemination of a company culture of safety.
- **Network reliability and service quality:** ensuring partners and customers a secure and reliable infrastructure over time and guaranteeing high levels of continuity of the business processes and sub-processes that contribute to the provision of the wholesale services offered. Continuously improving its services, guaranteeing a positive customer experience and meeting the ever-changing needs and expectations of customers also through the use of communication channels.
- **Digital divide:** connecting the country through the fiber optic network, allowing the entire population equal access to digital services, bridging the divide between urban and non-urban areas and contributing to overcoming the digital divide.
- **Human capital development:** creating an attractive workplace that protects the well-being and ensures the professional development of employees, offering a welfare system that promotes work-life balance and continuously investing in training and talent development.
- **Diversity, Equity & Inclusion:** promoting and supporting the principles of diversity, equity and inclusion through the adoption of organisational and management practices characterised by respect for and appreciation of each individual.
- **Privacy and Cybersecurity:** ensuring the protection of privacy and the security of ICT-related data and processes through the adoption of information security policies aimed at preventing attacks that could jeopardise the continuity of the service offered by Open Fiber and the reliability of the network.
- **Responsible supply chain management:** selecting and assessing suppliers and business partners based on specific social and environmental criteria such as occupational health and safety, fair contractual conditions and minimisation of environmental impacts. Taking environmental and social aspects into account when purchasing goods and services.
- **Contribution to economic development:** creating employment and business opportunities for all actors in the value chain, promoting the competitiveness of companies in the development of Industry 4.0 and Public Administration.
- **Relationship with the community:** minimising the impacts of job sites on citizens, preserving the landscape, limiting the inconvenience caused to the community in the construction, operation and maintenance of the network and maintaining strong relationships with local authorities and communities.
- **Circularity and waste management:** preferring procurement policies of materials with lower impact and products with a longer life cycle, which are more sustainable, easily recyclable, with minimal levels of toxicity and low

harmful gas emissions. Reducing the amount of waste for disposal wherever possible, favouring resource recovery and recycling activities.

Compared to the 2021 materiality analysis there was a new material topic: "Circularity and waste management". Some existing topics were merged or have been differently named:
- "Efficient energy management" and "Climate-altering emissions" were merged into one topic: "Fighting climate change".
- "Corporate welfare" was included in the topic "Human Capital Development".
- "Economic performance and value creation" was expanded and renamed "Contribution to economic development".
- "Innovation and technology for the environment" was redistributed between the topics "Circularity and waste management" and "Innovation and digitisation".
- "Cybersecurity" was extended to include privacy topics and renamed "Privacy and Cybersecurity".

The table below shows the correlation between the material topics and the aspects included in the GRI Standard of reference, with indications regarding the scope (the organisation's internal and external context) and any limitations.

IMPACTS	OPEN FIBER MATERIAL TOPIC	GRI STANDARD	PERIMETER AND ANY LIMITATIONS
Contribution to the economic development of value chain actors	Contribution to economic development	**201: Economic Performance 2016** 201-1 Direct economic value generated and distributed 201-2 Financial implications and other risks and opportunities due to climate change 201-3 Defined benefit plan obligations and other retirement plans 201-4 Financial assistance received from government **203: Indirect Economic Impacts 2016** 203-1 Infrastructure investments and services supported 203-2 Significant indirect economic impacts	Open Fiber S.p.A.
Incidents of corruption	Fight against corruption	**205: Anti-corruption 2016** 205-1 Operations assessed for risks related to corruption 205-2 Communication and training about anti-corruption policies and procedures 205-3 Confirmed incidents of corruption and actions taken	Open Fiber S.p.A.
Incidents of unfair competition	Transparency and equal access	**206: Anti-competitive behaviour 2016** 206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Open Fiber S.p.A.
Generation of climate-changing emissions	Fighting climate change	**302: Energy 2016** 302-1 Energy consumption within the organization 302-3 Energy intensity 302-4 Reduction of energy consumption **305: Emissions 2016** 305-1 Direct (Scope 1) GHG emissions 305-2 Energy indirect (Scope 2) GHG emissions 305-4 GHG emissions intensity 305-5 Reduction of GHG emissions	Open Fiber S.p.A.
Waste generation	Circularity and waste management	**306: Waste 2020** 306-1 Waste generation and significant waste-related impacts 306-2 Management of significant wasterelated impacts 306-3 Waste generated 306-4 Waste diverted from disposal 306-5 Waste directed to disposal	Open Fiber S.p.A.

IMPACTS	OPEN FIBER MATERIAL TOPIC	GRI STANDARD	PERIMETER AND ANY LIMITATIONS
Empowering the supply chain	Responsible management of the supply chain	**308: Supplier environmental screening 2016** 308-1 New suppliers that were screened using environmental criteria 308-2 Negative environmental impacts in the supply chain and actions taken **414: Supplier Social Assessment 2016** 414-1 New suppliers that were screened using social criteria 414-2 Negative social impacts in the supply chain and actions taken	Open Fiber S.p.A. Suppliers engaged in the network creation, management and maintenance (Creation, Delivery & Assurance)
Contribution to employee welfare Provision of training and talent attraction and retention programmes	Development of human capital	**401: Employment 2016** 401-1 New employee hires and employee turnover 401-2 Benefits provided to full-time employees that are not provided to temporary or parttime employees 401-3 Parental leave **404: Training and education 2016** 404-1 Average hours of training per year per employee 404-3 Percentage of employees receiving regular performance and career development reviews	Open Fiber S.p.A.
Accidents and injuries	Occupational Health & Safety	**403: Occupational Health and Safety 2018** 403-1 Occupational health and safety management system 403-2 Hazard identification, risk assessment, and incident investigation 403-3 Occupational health services 403-4 Worker participation, consultation, and communication on occupational health and safety 403-5 Worker training on occupational health and safety 403-6 Promotion of worker health 403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships 403-9 Work-related injuries 403-10 Work-related ill health	Open Fiber S.p.A. Suppliers engaged in the network creation, management and maintenance (Creation, Delivery & Assurance)
Promotion of equal opportunities	Diversity, Equity & Inclusion	**405: Diversity and Equal opportunity 2016** 405-1 Diversity of governance bodies and employees	Open Fiber S.p.A.
Contribution to the country's digitisation and economic development	Innovation and digitalisation	**413: Local Communities 2016** 413-1 Operations with local community engagement, impact assessments, and development programs **203: Indirect economic impacts 2016** 203-1 Infrastructure investments and services supported 203-2 Significant indirect economic impacts	Open Fiber S.p.A.
Impact of job sites on the public and communities	Relationship with the territory	**413: Local Communities 2016** 413-1 Operations with local community engagement, impact assessments, and development programs	Open Fiber S.p.A.
Network reliability and service quality	Network reliability and service quality	**416: Customer Health and Safety 2016** 416-1 Assessment of the health and safety impacts of product and service categories 416-2 Incidents of non-compliance concerning the health and safety impacts of products and services **203: Indirect economic impacts 2016** 203-1 Infrastructure investments and services supported 203-2 Significant indirect economic impacts	Open Fiber S.p.A. Suppliers engaged in the network creation, management and maintenance (Creation, Delivery & Assurance)
Privacy and cybersecurity breaches	Privacy and cybersecurity	**418: Customer privacy 2016** 418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	Open Fiber S.p.A.

MATERIAL TOPICS AND 2030 AGENDA SDGs

OPEN FIBER MATERIAL TOPIC	SDG	Specific target
Support for the local economy and relations with the community		**8.2** Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors. **8.3** Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services. **9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
Fight against corruption		**16.5** Substantially reduce corruption and corruption in all their forms.
Transparency and equal access		**9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
Fighting climate change		**13.2** Integrate climate change measures into national policies, strategies and planning. **7.2** Substantially increase the share of renewable energies in total energy consumption by 2030. **7.3** Double the global rate of energy efficiency improvement by 2030.
Circularity and waste management		**12.2** By 2030, achieve the sustainable management and efficient use of natural resources. **12.4** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse effects on human health and the environment. **12.5** By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.
Development of human capital		**4.3** By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university. **4.4** By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship. **8.5** By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.
Diversity, Equity & Inclusion		**10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status. **10.3** Ensure equal opportunities and reduce inequalities by eliminating discriminatory laws, policies and practices and promote relevant laws, policies and actions in this regard.

OPEN FIBER MATERIAL TOPIC	SDG	Specific target
Occupational Health & Safety		**3.d** Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks. **8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.
Network reliability and service quality		**9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
Privacy and cybersecurity		**9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
Responsible management of the supply chain		**8.7** Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms. **8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.
Innovation and digitalisation		**9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all. **9.3** Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets. **9.4** By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities. **11.4** Strengthen efforts to protect and safeguard the world's cultural and natural heritage. **17.6** Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.

6.3 STAKEHOLDER ENGAGEMENT

For Open Fiber, constant and inclusive dialogue with its stakeholders is a fundamental asset of its business strategy, and the key to gathering feedback and comments on its initiatives and, above all, on their compliance with environmental, social and economic requirements.

Events, round tables, regular and targeted listening, digital tools: these are all activities and channels that Open Fiber manages for a two-way communication with its stakeholders and a constant monitoring of their opinions and expectations. A fundamental process since the interest that stakeholders show towards the Company is the same that Open Fiber has towards its multiple interlocutors.

Furthermore, the Corporate Sustainability Report, a public document available on the company website, constitutes another tool for communicating with all stakeholders.

STAKEHOLDERS MAP

Stakeholders	Expectations	Company Engagement, Activities and Responses
Local communities	Honesty, ethics, fairness, integrity. And again safety, health protection, human rights protection and environmental care. Open Fiber and its network, a strategic combination for the improvement of social conditions in various areas, are embedded in the territory in a capillary manner, avoiding environmental impacts, respecting the territory and its landscape, managing incidents, avoiding accidents. Fiber creates jobs, engages young people, reduces the digital divide and boosts the infrastructure for the country's digital network.	• Promotion and information on Open Fiber institutional website • Promotion and information on social networks • Press releases • Specific outreach projects
Media, Press and Opinion Makers	Social commitment and solidarity, transparency and responsible marketing, protection of human rights and the environment and promotion of territories are just a few of the things that the media, press and opinion makers expect from the company. Through specific campaigns, Open Fiber raises public awareness of its social commitment and attention to environmental protection. With a transparent approach, it traces the progress of its activities and presents its assets for the future of the country: foresight, community support, 5G, innovation.	• Promotion and information on Open Fiber institutional website and on social network • Specific projects • Press releases and press conferences • Interviews and publications • One-to-one meetings
Associations	Occupational safety, protection of the environment and human rights, social solidarity, diversity, equity and inclusion, improvement of public service: these are the topics inspiring the cooperation between Open Fiber and the associations. Particular attention is also paid to the reduction of the digital divide, emissions in the TLC sector, the digitalisation of the economy, companies, PA and society and European funds and projects in the digital field.	• Events and conferences • Memberships and agreements
Customers	Focus on listening and service quality are two characteristics of the company that are in the interest of its customers. They also include speed in responding to enquiries, protection of privacy, protection and security of personal data, digitalisation, development of local businesses, optimisation of the supply chain, occupational safety, environmental protection and human rights.	• One-to-one meetings • Corporate events • Contracts and agreements
Universities and Research Institutes	Development of collaborations, participation in career days, education on the future, these and many other issues inspire the relationship between the company and universities and research centres. Open Fiber represents a potential partner for collaborations, a job opportunity for its students, an example of technological and open innovation, a support for sports, social and cultural initiatives and an opportunity for School-work Alternation projects.	• Career Days • Open Days • Collaboration and specific projects
Third-party certifying body	In order to undertake a virtuous path in carrying out its activities, Open Fiber is required to comply with international standards of reference and to preserve the reputation and professionalism of the Entity itself.	• Audits
Supervisory bodies and Institutions	Compliance with regulations on safety and the protection of heritage - landscape and archaeology - during network installation work has led to a reduction in the rate of accidents and injuries at Open Fiber worksites. The construction of digital infrastructures for the country, an opportunity for the development of employment, comply with current regulations, also in terms of compliance of contracts and subcontracts.	• Working tables • Mandatory and on-demand notices • Events and conferences • Framework agreements
Financial Community and Investors	Open Fiber is assessed based on its financial strength, ESG investments, security and value of investments, operational efficiency, sound governance and transparent conduct, innovation, continuous improvement and preventive and structured management of business processes.	• Press releases • Presentations of financial and non-financial results (financial statements) • Funding projects • One-to-one meetings
Insurance companies	They assess Open Fiber for its economic and financial soundness, for the adoption of customised insurance products for health, safety and environmental risks, for prevention practices aimed at reducing incidents, for the methods adopted for crisis/emergency management and related communication and for the adequate compensation of damaged third parties.	• Agreements • One-to-one meetings
Outsourcers and Suppliers of goods/services/works	After examining Open Fiber for the preliminary assessment of the risks that the Company carries out when performing contracted activities, compliance with health, safety and environmental protection regulations at all OF workplaces, choices regarding privacy, protection and security of personal data, ensure a virtuous working relationship and a significantly improved image.	• Agreements • One-to-one meetings • Events and workshops
Consultants and external collaborators	They choose Open Fiber on the basis of its compliance with Health and Safety regulations in all workplaces and for the choices made regarding privacy, protection and security of personal data.	• One-to-one meetings • Events and workshops

Stakeholders	Expectations	Company Engagement, Activities and Responses
Public concessionary authority	Development of digital infrastructures for the country, ensuring network reliability and quality of service, while complying with Health and Safety regulations for workers and environmental protection at working sites: this is what the Concessionary Authority is requesting Open Fiber to do.	• Direct contacts • Mandatory and on-demand notices
Existing infrastructures operators	Open Fiber is responsible for the compliant use of existing infrastructures for IRU contracts, the prevention of damage to sub-service networks and the management of service disruptions or situations that affect security.	• Direct contacts and IRU contracts • Communications relating to the performance of work
Business partners	Development of collaborations, technological innovation and open innovation.	• Direct contacts • One-to-one meetings • Partnership Agreements
Trade-union representatives/ worker safety representatives (RLS, rappresentanti dei lavoratori per la sicurezza)	Development of skills appropriate to the job, Occupational Health and Safety, enforcement of the collective bargaining agreement, increased employment, promotion of diversity, equity and inclusion in the work environment, protection of human rights, sound governance and transparent conduct.	• Regular meetings with representatives • Press releases
Employees	A healthy, wholesome and safe working environment, availability of protective equipment and safe and functional work tools, work life balance, support for parenthood, focus on continuous improvement of corporate Welfare and occupational well-being, protection of human rights, diversity, equity and inclusion, corporate ethics and integrity, active involvement in health, safety and environmental protection issues, skills development and training, protection of privacy, protection and security of personal data, zero occupational diseases and injuries.	• Internal organisational communications • "MyHr" internal portal • Company intranet • Training and refresher courses • Engagement and team-building initiatives • Company meetings • Company events
Outsourcers' and Contractor's workers	Safe and functional work equipment, zero occupational diseases and injuries, development of local business activities, protection of privacy, protection and security of personal data.	• Communications to suppliers
Shareholders	In Open Fiber they look for safety and value of the investment, cost efficiency for management, construction of the network and operational efficiency, care for environmental and social sustainability, prevention of crisis and emergency situations, brand reputation, competent, trained and satisfied staff, compliance with the legislative framework, compliance with the principles of conduct contained in the Code of Ethics, implementation of control protocols contained in the Model pursuant to Legislative Decree 231/2001 for the prevention of crimes covered by the decree, privacy protection, protection and security of personal data, network reliability and quality of service, strong governance and transparent conduct and responsible marketing.	• Assembly • Presentations of financial and non-financial results
Management	From Open Fiber they expect a satisfactory relationship with the Customer, the definition of S.M.A.R.T. objectives, availability of resources for the achievement of objectives, performance of work activities in a safe and environmentally friendly manner, implementation and maintenance of the Integrated Quality, Safety and Environment Management System, responsible management of the supply chain, protection of privacy, protection and security of personal data, network reliability and quality of service, operational efficiency and motivated people.	• Internal organisational communications • Corporate meetings • Corporate events
Supervisory Board (Italian Legislative Decree 231/2001)	Compliance with the principles of conduct contained in the Code of Ethics, effective implementation of the control protocols contained in the Model pursuant to Legislative Decree 231/2001 for the prevention of offences, safety, health protection and quality of production processes while fully respecting the environment.	• Dedicated information channels
Ecosystem	With a view to being totally eco-friendly, Open Fiber undertakes - in the development of its network - not to have negative environmental impacts, to respect the landscape, to reduce CO_2 emissions and to use energy coming from renewable sources.	• Assessment of social and environmental impacts related to its activities • Definition of requirements in terms of environment protection • Framework agreements with municipalities • Dialogue with competent entities and superintendencies

6.4 ASSOCIATIONS AND MEMBERSHIP

Open Fiber has long been a member of various national and international associations to help spread a more responsible digital culture:

- **FTTH Council Europe:** Open Fiber currently sits on the Board of Directors of the association – whose goal is to accelerate the adoption of all-fiber connectivity in every part of Europe – actively participating in all its working groups: Policy and Regulation Expert Group, Market Intelligence Committee, Investors Committee, Deployment & Operations Committee.

- **6GIA (ex 5GIA):** Open Fiber is a member of 6GIA, an association that brings together operators, manufacturers, verticals, academic institutions and SMEs, and whose main objective is to contribute to Europe's leadership in 5G, research beyond 5G and Smart Networks and Services/6G.

- **Confindustria Europa:** Open Fiber participates in activities organised by the European office of Confindustria relating to the company's areas of interest, including meetings with MEPs.

- **The European House Ambrosetti:** Open Fiber participates in activities organised by the European office of Confindustria relating to the company's areas of interest, including meetings with MEPs.

- **Italian Initiative Group (Gruppo Iniziativa Italiana, GII):** founded in 1995, the association represents the Italian community in Brussels in the fields of business, agribusiness, innovation, research and services. GII is committed to promoting the image of Italy in the European capital, by fostering high-profile meetings between the main Italian players and the highest representatives of Italian and European institutions.

- **Business at OECD (BIAC):** Open Fiber is a member of the Innovation and Technology Committee at BIAC, the international business network that develops policy proposals for the OECD.

- **B20 2021:** Open Fiber is a member of the B20 Digital Transformation Task Force, the engagement group made up of companies and industry associations that aims to make policy recommendations in strategic sectors for the G20 Presidency, which is held by Italy this year.

- **Assotelecomunicazioni (ASSTEL):** it is a trade association which, within the Confindustria system, represents the telecommunications industry made up of companies in the various product areas that belong to it, and whose mission is to encourage and promote the development and growth of the industry to the benefit of the overall national economic-productive system. It protects the interests of member companies at institutional, political and economic, public and private fora and the representation in trade union and labour matters of member companies that apply the Telecommunications Collective Bargaining Agreement and/or the Outbound Agreement, supporting them in the management of issues of interest.

- **Assonime:** association of Italian joint-stock companies, its purpose is to study and address problems that directly or indirectly affect the interests and development of the Italian economy. Its member companies have access to tailor-made assistance services such as advice, consultancy and tailored one-to-one meetings.

- **Assolombarda:** the association of companies operating in the Metropolitan City of Milan and in the provinces of Lodi, Monza and Brianza and Pavia and the most important one in the whole Confindustria System; it voices and protects the interests of 6,900 national and international companies of all sizes, producing goods and services in all product

sectors, especially in their relations with institutional interlocutors and local stakeholders operating in various fields such as education, environment, culture, economy, labour and civil society.

- **Association of Manufacturers and enterprises (Unione degli Industriali e delle Imprese) – Unindustria:** operating at a regional level in Lazio region, it is the largest association in the Confindustria system in terms of geographical coverage. The group of entrepreneurs and managers, together with the internal team of professionals, works both to represent the collective interests of the associates, through the development of projects and strategic and operational proposals, and to assist them in solving the problems that affect the life of the company.

- **Italian Association of Corporate Security Professionals (Associazione Italiana Professionisti Security Aziendale, AIPSA):** its purpose is to enhance the professional order of the security manager, to train and update members in the field of corporate security, to spread the culture of security and to further investigate its technical, functional, legal and legislative issues. The objectives are pursued by leveraging on the concepts of innovation, diversity and inclusion and Next Generation.

- **Previass II:** the Intercompany Assistance Fund for client companies, registered in the register of Health Funds to comply with the provisions of the Sacconi Decree[100], is a non-profit association with no legal personality for companies wishing to provide their employees with certain welfare benefits provided for by the National Collective Bargaining Agreement, agreements or company regulations. It offers its members consultancy services for the drafting of company agreements/regulations, for the proper interpretation of tax regulations concerning health care and assistance and innovative services aimed at optimising the management of refunds of healthcare expenses.

- **Italian Association of Internal Auditors (AIIA):** a non-profit association established in 1972 and recognised as the Italian affiliate of the IIA (Institute of Internal Auditors), a world leader in standards, certification and training for the internal auditing profession. With more than 4,900 members, representing about 800 companies, AIIA has always been a reference for the topics of risk management, corporate governance and internal audit.

- **Association of Supervisory Bodies' members pursuant to the Legislative Decree 231/2001 (Associazione dei componenti degli Organismi di Vigilanza ex D. Lgs. 231/2001, AODV 231):** a non-profit association that brings together professionals and company representatives who have first-hand experience of the Supervisory Bodies (SB) envisaged by the Organisational Models adopted on the basis of Legislative Decree 231/2001. Founded in February 2008, it studies the implementation of Decree 231/2001 on the field, assessing what it means, in practical terms, to adopt and implement an Organisational Model and how a Supervisory Board should, and could, concretely operate in order to effectively perform its duties without hindering the conduct of business.

- **FERPI:** Association whose mission is to give value to the profession of public speakers and professional communicators among all target audiences and to support the professional growth of its members through training, constant updating and international exchange. Its vision is to actively participate in the development of the sector by contributing to the analysis of the evolution of market dynamics and the changes taking place in the world of communication. In their professional activities, FERPI members are committed to supporting ethical communication and public relations by embracing numerous values, including listening, trust, innovation, transparency, responsibility, ethics and sustainability.

100 Italian Ministerial Decree 27/10/2009.

- **4.Manager:** business culture, development of managerial skills and active labour policies are the drivers around which Confindustria and Federmanager have decided to intensify their collaboration for the country's growth. On these grounds, the 4.Manager association was set up in October 2017, tasked with designing and implementing high value-added initiatives to meet emerging needs for the overall growth of industrial managers and entrepreneurs.

- **Florence School of Regulation (EUI):** Florence School of Regulation is a centre of excellence for independent discussion and knowledge exchange with the aim of improving the quality of European regulation and policies. It provides academic research, training and political events in the fields of energy and climate, communications and media, transport and water.

- **I-COM – Institute for Competitiveness (Istituto per la Competitività):** the institute is a think tank founded in 2005 by a group of scholars, professionals and managers and is based in Rome and Brussels. The aim of I-Com is to promote topics and analyses concerning competitiveness from an innovative perspective within the Italian, European and international political and economic framework. The main areas of interest are: digital, energy, innovation, health and institutions. In July 2017, the Institute for Competitiveness joined the Global Trade and Innovation Policy Alliance, an international network of think tanks that focus on innovation issues.

- **AGOL – Association of Young Opinion Leaders (Associazione Giovani Opinion Leader):** Open Fiber is a member of the association of young professionals working in the world of communication, institutions and public affairs, which aims to stimulate the turnover of our country's leadership by promoting meritocracy, through inter-generational dialogue.

- **ANFoV:** association committed together with the big players of the market to contribute to innovate and modernise our country. From fostering the development of fiber optic networks for BUL to finding the best solutions for a 5G connection that can be useful to citizens, to the business system and to the Public Administration.

- **Aspen Institute Italia:** private, independent, international, non-partisan and non-profit association characterised by in-depth analysis, discussion, exchange of knowledge, information and values. Aspen Institute Italia's mission is the internationalisation of the country's entrepreneurial, political and cultural leadership through a free exchange of different ideas and backgrounds in order to identify and promote common values, knowledge and interests. The Institute focuses on the most pressing issues and challenges in politics, economics, culture and society, with a particular attention to the Italian and international business community.

- **ANSA Bruxelles:** since 1945, ANSA has been publishing and distributing news and in-depth reports, in all modes and on all media platforms. The key values that make it a leader in customer preferences and in the international information scene are independence, timeliness, completeness and reliability.

- **ANRA National Risk and Insurance Manager Association (Associazione Nazionale Risk Manager e Responsabili Assicurazioni Aziendali):** it is made up of risk officers, risk managers and insurance managers and risk management consultants, more than 800 members who operate on a daily basis in the field and who benefit from the continuous exchange of their experiences and the sharing of projects for the development of the sector. Fully convinced that experience is the best subject to be shared in order to spread the culture of risk management, ANRA organises meetings for professionals and companies on

issues related to business risk, training courses for new roles and exchanges of experience with foreign colleagues.

- **IFMA International Facility Management Association:** a non-profit association founded in 1980 in the United States with the aim of promoting and developing facility management, a discipline defined as the strategy of managing companies' instrumental properties and the services that form the basis of the business, divided into services to buildings, space and people. The association, which has been operating in Italy since 1995, aims to help create a class of professionals capable of driving the sector forward; it pursues this objective through detailed studies of the market, as well as communication and training activities.
- **AIGI Italian Association of Company Lawyers (Associazione Italiana Giuristi d'Impresa):** it was established in 1976 by a group of heads of legal departments of large companies, with the aim of promoting the position and the role of the company lawyer, by acknowledging his/her legal status, as was already the case in other countries. The aim of the association is to promote, train and support the growth of corporate lawyers and their role in Italy.

Moreover, Open Fiber is a member of Italian Electrotechnical Committee (Comitato Elettrotecnico Italiano, CEI), the Italian Association for Trenchless Technology (IATT) and Ente Italiano di Normazione (UNI, Italian Standards Body), associations in which it also takes part in technical committees and working groups:

- **Italian Electrotechnical Committee (Comitato Elettrotecnico Italiano, CEI):** it is a private law association responsible for technical standardisation in the field of electro-technology, electronics and telecommunications at national level. Its mission, as a national super partes body, is to publish in Italy regulatory documents on good practice, to participate in the drafting

of the corresponding European and international standards and to implement them, as well as to disseminate the technical and scientific culture in general and the culture of technical standardisation in particular.

- **Italian Association for Trenchless Technology (IATT):** it is an association that promotes the advancement of scientific and technical knowledge in the field of trenchless (no-dig) technologies; its members include the major Italian companies managing service networks, universities and research institutes, specialised companies, consultants and professionals in the sector. The mission is to research and apply technically advanced solutions to limit road trenching, excavation and soil movement, as well as emissions of harmful gases, accidents at worksites, reduce the time required to carry out works and energy consumption, moderating the negative environmental and social impact that excavation activities inevitably have.
- **Ente Italiano di Normazione (UNI, Italian Standards Body):** an association that develops, publishes and disseminates standards, the adoption of which, on a voluntary basis, guarantees the best solution for producing a product, implementing a process and pursuing a profession. The high efficiency and effectiveness of these standards is due to the values that distinguish them, such as consistency of content, transparency in the drafting process, accessibility regarding participation in the drafting of the standard, consensuality regarding approval, voluntary membership, independence of the association and efficiency of the standards issued.

As regards relations with **institutional stakeholders**, such as the European Commission, the European Parliament and the Council of the European Union, Open Fiber is registered in the Transparency Register and is in contact with the Permanent Representation of Italy to the European Union.

6.5 DATA AND INDICATORS TABLES

The main sustainability data and KPIs (Key Performance Indicators) in accordance with GRI Standards are included in the tables in this paragraph and form an integral part of the 2022 Sustainability Report.

The data and information contained in the report have been processed and consolidated through direct measurement and, where necessary and in any case explicitly indicated, through estimates and calculation models. The main methods used to calculate the indicators are reported and described below or in the document through notes and comments.

6.5.1 General Disclosure

2-7 and 2-8: INFORMATION ON EMPLOYEES AND OTHER WORKERS

Employees by employment contract as of 31 December

Employment contract	Gender	U.M.	2020	2021	2022
Permanent	Women	no.	349	405	511
	Men	no.	799	884	1,060
	Total	**no.**	**1,148**	**1,289**	**1,571**
Fixed term	Women	no.	1	0	0
	Men	no.	1	0	0
	Total	**no.**	**2**	**0**	**0**

Employees by employment contract as of 31 December

Contract type	Gender	U.M.	2020	2021	2022
Full-time	Women	no.	347	402	505
	Men	no.	799	883	1,059
	Total	**no.**	**1,146**	**1,285**	**1,564**
Part-time	Women	no.	3	3	6
	Men	no.	1	1	1
	Total	**no.**	**4**	**4**	**7**

Employees by employment contract as of 31 December

Description	U.M.	2020	2021	2022
Total employees as of 31 December	no.	1,150	1,289	1,571

Other workers as of 31 December

Description	U.M.	2020	2021	2022
Employees of other organization	no.	6	5	2
Interns	no.	11	17	17
Temporary agency workers	no.	9	11	6
Collaborators	no.	-	1	2

6.5.2 Contribution to economic development

201-1: DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED

Direct economic value generated and distributed

Description	U.M.	2020	2021	2022
ECONOMIC VALUE GENERATED	**€/000**	**261,001**	**379,546**	**470,027**
Value of production (Total Revenues)	€/000	261,001	379,546	469,903
Income from investments	€/000	-	-	-
Other types of financial income (financial income)	€/000	0	0	124
Extraordinary income	€/000	-	-	-
ECONOMIC VALUE DISTRIBUTED	**€/000**	**90,020**	**351,838**	**342,811**
Operating costs	**€/000**	**105,749**	**124,035**	**170,357**
Costs for raw materials	€/000	-	-	-
Costs for services (costs for services)	€/000	93,833	120,567	159,783
Costs for using third-party goods (Costs for using third-party goods)	€/000	4,562	3,282	5,357
Changes in inventory of raw materials (Changes in inventory of raw materials)	€/000	-	-	-
Other operating expenses (net of taxes) - (Miscellaneous operating expenses)	€/000	7,354	186	5,216
Extraordinary expenses	€/000	-	-	-
Value distributed to employees	**€/000**	**66,880**	**80,375**	**88,761**
Costs for personnel (costs for personnel)	€/000	66,880	80,375	88,761
Value distributed to capital providers	**€/000**	**94,743**	**130,668**	**119,363**
Interest and other financial charges (financial charges)	€/000	94,743	130,668	119,363
Value distributed to the Public Administration	**€/000**	**(177,997)**	**16,436**	**(36,037)**
Current and prepaid income taxes (income tax)	€/000	(178,370)	13,911	(39,557)
Miscellaneous operating costs (only the value of taxes)	€/000	372	2,525	3,520
Value distributed to shareholders	**€/000**	**-**	**-**	**-**
Dividends distributed	€/000	-	-	-
Value distributed to the community	**€/000**	**646**	**324**	**367**
Gifts	€/000	191	1	40
Sponsorships	€/000	-	-	-
Membership fees	€/000	455	323	328
ECONOMIC VALUE RETAINED	**€/000**	**170,981**	**27,708**	**127,216**
Profit (or loss) for the year (net of dividends)	€/000	3,490	(209,728)	(162,382)
Write-downs and provisions	€/000	8,502	20,751	27,824
Depreciation/amortisation	€/000	158,989	216,685	261,774
Deferred taxes	€/000	-	-	-
ECONOMIC VALUE GENERATED	**€/000**	**261,001**	**379,546**	**470,027**
ECONOMIC VALUE DISTRIBUTED	**€/000**	**90,020**	**351,838**	**342,811**
ECONOMIC VALUE RETAINED	**€/000**	**170,981**	**27,708**	**127,216**

201-4: FINANCIAL ASSISTANCE RECEIVED FROM THE GOVERNMENT

Financial assistance received from the government

Description	U.M.	2020	2021	2022
Monetary value of financial assistance received from the public organisation	€/000	35,866	128,940	99,328

Notes: Here are reported the contributions received from Infratel Italia S.p.A. (an in-house company of the Ministry of Enterprise and Made in Italy) for the development of Ultra Broadband in market failure areas (BUL Strategic Plan). Monetary values shown refer to the amounts collected. More details can be found at https://bandaultralarga.italia.it/aree-bianche/intervento-a-concessione/

6.5.3 Fight against corruption

205-1: OPERATIONS ASSESSED FOR RISKS RELATED TO CORRUPTION

Operations assessed for risks related to corruption

Description	U.M.	2020	2021	2022
Total processes	n.	11	12	12
Processes assessed for risks related to corruption	n.	9	12	12
Processes assessed for risks related to corruption	**%**	**82%**	**100%**	**100%**

Notes: In the last quarter of 2022, work began on the revision of the MOG and the related Risk Assessment 231.

Significant risks related to corruption identified during the risk assessment are those related to public and private corruption as defined in Legislative Decree 231/01. The number of business processes is identified by the directions identified by means of a first-level organisational arrangement.

205-2: COMMUNICATION AND TRAINING ABOUT ANTI-CORRUPTION POLICIES AND PROCEDURES

Employees who have received anti-corruption training

Description	U.M.	2020	2021	2022
Executives trained	no.	7	8	35
Percentage of Executives trained	**%**	**15%**	**17%**	**60%**
Middle Managers trained	no.	33	16	117
Percentage of Middle Managers trained	**%**	**28%**	**12%**	**82%**
Office Workers trained	no.	390	228	1,229
Percentage of Office Workers trained	**%**	**40%**	**21%**	**90%**
Total employees trained	**no.**	**430**	**252**	**1,381**

Notes: In 2022 there was a significant increase compared to previous years, as the courses in question were updated and reassigned to the entire company population.

6.5.4 Fighting climate change

302-1: ENERGY CONSUMPTION WITHIN THE ORGANISATION

Energy consumption within the organisation

Energy consumption	U.M.	2020	2021	2022
Electricity consumption from non-renewable sources	GJ	29,767.4	5,930.7	4,119.0
Electricity consumption from renewable sources	GJ	26,640.1	75,277.7	118,432.4
Energy consumption from natural gas consumption	GJ	2,581.6	2,786.8	2,222.7
Energy consumption from (transport) diesel consumption	GJ	5,025.7	5,379.2	5,129.9
Energy consumption from (transport) petrol consumption	GJ	2,797.8	7,418.6	11,538.5
Total energy consumption	**GJ**	**66,812.6**	**96,792.8**	**141,442.5**

Notes: With regard to energy from renewable sources, the gradual transition to the purchasing of electricity subject to GoO (Guarantee of Origin) went into full effect in 2020 following the implementation of the Energy Management System, reaching 100% in 2022 for all electricity purchased by Open Fiber.

Electricity and gas consumption data were obtained from invoices issued by the respective Energy Suppliers or from readings at metering points where present, except for condominium consumption for locations where Open Fiber is not a POD holder and for which electricity and Natural Gas consumption was estimated based on thousandts or based on the contracted flat fee for ancillary charges.

The consumption of diesel and methane for the virtual transport site was calculated on the basis of the vehicles' fuel cards.

The consumption analysis did not consider the consumption related to the coworking premises, where Open Fiber has no control over energy.

With regard to the previous reporting period (2021), there was an adjustment to the data on electricity consumption subject to Guarantee of Origin.

Standards, methodologies, and conversion factors
In order to calculate the quantity of energy with reference to the consumption of natural gas, diesel and gasoline, the conversion coefficients set out in point 13 of the explanatory note to the Ministry of Economic Development circular of 18 December 2014 have been applied.
The share of electricity from renewable sources is calculated on the basis of the consumption of PODs to which Guarantees of Origin were associated by the electricity supplier in the three-year period 2020-2022.

302-3: ENERGY INTENSITY

Energy intensity

Description	U.M.	2020	2021	2022
Total energy consumed	GJ	66,812.6	96,792.8	141,442.5
Energy intensity	**MJ/REU**	**6.3**	**7.1**	**9.1**

Notes: The energy included in the energy intensity ratio calculation includes the energy consumption within the organization (302-1), related to electricity consumption, natural gas consumption and diesel and gasoline consumption related to the company car fleet.

The number of housing units that are connected as of 31/12 of the reported year is the organization-specific parameter for calculating intensity.

305-1: DIRECT (SCOPE 1) GHG EMISSIONS

Direct (Scope 1) GHG emissions

Description	U.M.	2020	2021	2022
Scope 1 emissions from fossil fuels	t CO_2eq.	720.6	1,093.5	1,343.6
Scope 1 emissions from refrigerant gases	t CO_2eq.	67.8	176.6	300.1
Total Scope 1 emissions	**t CO_2eq.**	**788.4**	**1,270.1**	**1,643.7**

Notes: The gases considered in the calculation are> CO_2, CH_4, N_2O and the HFC-n coming from leaks from air conditioning systems at technology sites.

Standards, methodologies, and conversion factors

For the classification of emissions, Open Fiber refers to "The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)." Scope 1 emissions (direct emissions from sources that are owned or otherwise under the control of the organization) include those resulting primarily from combustion within plants, boilers, and company vehicles, as well as from gas leaks from air conditioning systems. The following emission factors were assumed with respect to Scope 1 emissions for 2022:

- To calculate emissions associated with refrigerant gas leaks from air conditioning systems, the Global Warming Potential (GWP) values associated with each circuit gas published by Intergovernmental Panel on Climate Change - IPCC Fifth Assessment Report, 2021 (AR6) were used.
- For the calculation of emissions related to diesel and petrol consumption, the following respective emission factors were used:
  - ISPRA – Italian Greenhouse Gas Inventory 1990-2020. National Inventory Report 2022 (report 360/2022).
  - Ministry of Environment and Energy Security - Table of national standard parameters for the UNFCCC national inventory of CO_2 emissions (average of the values for the years 2019-2021) - version 2023.
- The calculation of emissions related to natural gas consumption is based on the emission factor given in the Table of National Standard Coefficients for the UNFCCC National CO_2 Inventory (average of the values for the years 2019-2021) - 2023 version, issued by the Ministry of the Environment and Energy Security.

305-2: ENERGY INDIRECT (SCOPE 2) GHG EMISSIONS

ENERGY INDIRECT (SCOPE 2) GHG EMISSIONS – LOCATION-BASED

Description	U.M.	2020	2021	2022
Scope 2 emissions – Location-based	t CO_2eq	4,208.3	5,860.5	8,364.1
Description	**U.M.**	**2020**	**2021**	**2022**
Scope 2 Emissions – Market-based	t CO_2eq	3,852.3	755.5	515.4

Notes: The increase in Scope 2 Location-based emissions – linked to the increase in energy consumption – is due to the progress in the implementation of the Open Fiber network, with an increase in the number of technology sites in operation and the connected real estate units.

With regard to the previous reporting period (2021), there was an adjustment of the data concerning the share of energy subject to Guarantees of Origin.

The significant reduction in Scope 2 Market-based emissions in 2022 compared to the previous two years is due to the portion of electricity supplied through Guarantee of Origin.

Standards, methodologies, and conversion factors

For the classification of emissions, Open Fiber refers to "The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)." Emissions from the generation of the electricity, heat, or steam purchased and used by the organization are included in Scope 2 emissions (indirect greenhouse gas emissions).

The following conversion factors were used to calculate indirect emissions from the consumption of electricity used by the organisation in 2022:

- Location-based approach: application of emission factors for electricity production and consumption in Italy published by ISPRA – Indicators of efficiency and decarbonisation of the national energy system and the electricity sector – Report 363/2022.
- Market-based approach: application of the emission factors published by AIB - Association of Issuing Bodies - European Residual Mixes, Results of the calculation of Residual Mixes for the calendar year 2021, version 1.0 of 31/05/2022, to the portion of energy not subject to Guarantee of Origin.

305-4: GHG EMISSIONS INTENSITY

GHG Emissions (Scope 1 + Scope 2 Location-based)

Description	U.M.	2020	2021	2022
Scope 1 Emissions	t CO$_2$eq.	788.4	1,270.1	1,643.7
Scope 2 emissions – Location-based	t CO$_2$eq.	4,208.3	5,860.4	8,364.1
GHG Emissions (Scope 1 + Scope 2 Location-based)	t CO$_2$eq.	4,996.7	7,130.5	10,007.8
GHG emissions intensity ratio (Scope 1 + Scope 2 Location-based)	**kg CO$_2$eq./REU**	**0.47**	**0.53**	**0.65**

GHG Emissions (Scope 1 + Scope 2 - Market-based)

Description	U.M.	2020	2021	2022
Scope 1 Emissions	t CO$_2$eq	788.4	1,270.1	1,643.7
Scope 2 Emissions – Market-based	t CO$_2$eq	3,852.3	755.5	515.4
GHG Emissions (Scope 1 + Scope 2 - Market-based)	t CO$_2$eq	4,640.7	2,025.6	2,159.1
GHG emissions intensity ratio (Scope 1 + Scope 2 Market-based)	**kg CO$_2$eq./REU**	**0.44**	**0.15**	**0.14**

Notes: The emissions included in the calculation are Scope 1 emissions and Scope 2 emissions. The gases included in the calculation are the same as those included in Scope 1 and Scope 2 emissions in GRI 305-1 and GRI 305-2.

The number of housing units that are connected as of 31/12 of the reported year is the organization-specific parameter for calculating intensity.

With regard to the previous reporting period (2021), there was an adjustment of the data concerning the share of energy subject to Guarantees of Origin, and therefore in the calculation of market-based emissions.

6.5.5 Circularity and waste management

306-3: WASTE GENERATED

Waste generated

Description	U.M.	2022		
		Not intended for disposal	Directed to disposal	Total waste
Total waste	**t**	**111.50**	**0**	**111.50**
Hazardous waste	t	0.00	0.00	0.00
Non-hazardous waste	t	111.50	0.00	111.50

Notes: With regard to the quantities of waste, there was no special waste produced by Open Fiber in 2020-2021.The waste produced is classified as special, non-hazardous waste due to the management of obsolete material in the warehouses (sent for recovery in 2022). This table does not include the quantities of urban waste generated in offices and delivered to the public collection service.

306-4: WASTE DIVERTED FROM DISPOSAL

Waste diverted from disposal

Description	U.M.	2020	2021	2022
Total hazardous waste	**t**	**0.00**	**0.00**	**0.00**
- of which preparation for re-use	t	0.00	0.00	0.00
- of which recycled	t	0.00	0.00	0.00
- of which to other recovery operations	t	0.00	0.00	0.00
Total non-hazardous waste	**t**	**0.00**	**0.00**	**111.50**
- of which preparation for re-use	t	0.00	0.00	0.00
- of which recycled	t	0.00	0.00	0.00
- of which to other recovery operations	t	0.00	0.00	111.50

Notes: The recovery of all waste produced by Open Fiber is entrusted to authorised third parties in accordance with current regulations and is carried out at sites outside the company.

6.5.6 Responsible management of the supply chain

308-1: NEW SUPPLIERS THAT WERE SCREENED USING ENVIRONMENTAL CRITERIA

New suppliers that were screened using environmental criteria

Description	U.M.	2020	2021	2022
Total number of new suppliers	n.	90	230	118
New suppliers that were screened using environmental criteria	n.	20	51	21
New suppliers that were screened using environmental criteria	**%**	**22%**	**22%**	**18%**

Notes: Included in new suppliers assessed according to environmental criteria are all suppliers that were newly accredited during the reporting year and suppliers that renewed their qualification and were thus re-assessed.

With regard to 2022 compared to 2021, the absolute number of suppliers decreased as there were fewer renewals of qualifications.

Included in the environmental assessment criteria are the possession of specific certifications (e.g. ISO 14001 certification) and/or the possession of specific authorisations/qualifications (e.g. National Register of Environmental Operators).

308-2: NEGATIVE ENVIRONMENTAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN

Negative environmental impacts in the supply chain and actions taken

Description	U.M.	2020	2021	2022
Suppliers assessed for environmental impacts*	no.	43	53	57
Suppliers identified as having significant actual and potential negative environmental impacts	no.	43	53	57
Suppliers identified as having significant actual and potential negative environmental impacts, with which improvements were agreed upon as a result of assessment**	no.	0	22	26
Suppliers identified as having significant actual and potential negative environmental impacts, with which improvements were agreed upon as a result of assessment	**%**	**0%**	**42%**	**46%**
Suppliers identified as having significant actual and potential negative environmental impacts, with whom relationships have been terminated as a result of the screening	no.	0	0	0
Suppliers identified as having significant actual and potential negative environmental impacts, with which relationships were terminated as a result of assessment	**%**	**0%**	**0%**	**0%**

Notes: Both actual and potential negative environmental impacts were considered in the significant negative environmental impacts.

As part of its environmental management system, Open Fiber has identified and assessed the aspects and related environmental impacts associated with its activities, including those carried out through the involvement of third-party companies supplying goods/products, services or works. The identification and assessment process is aimed at identifying those aspects that are considered significant with respect to business processes and therefore need to be addressed by the QHSE Management System and within the contracts signed between the parties. Depending on the conditions in which the impact occurs (normal, abnormal, and emergency), the main significant environmental aspects associated with the activities entrusted to third parties are: use of raw materials, waste production, atmospheric emissions, noise emissions and traffic. The environmental impacts that can be monitored are to date limited to those activities that are conducted under the direct control of Open Fiber.

* Suppliers, assigned contracts by Open Fiber, assessed during contract execution in the areas of quality, environment and safety were considered.

** Suppliers considered are those for which non-conformities/incidents are recorded on Open Fiber sites and on which improvement actions have been taken.

414-1: NEW SUPPLIERS THAT WERE SCREENED USING SOCIAL CRITERIA

New suppliers that were screened using social criteria

Description	U.M.	2020	2021	2022
Total number of new suppliers	no.	90	230	118
New suppliers that were screened using social criteria	no.	86	178	104
New suppliers that were screened using social criteria	%	96%	77%	88%

Notes: All suppliers that were newly accredited in the reporting year and suppliers that renewed their qualification and were then re-evaluated are included in the new suppliers that were screened using social criteria.

With regard to 2022 compared to 2021, the absolute number of suppliers decreased as there were fewer renewals of qualifications.

The social evaluation criteria include the possession of specific certifications (for example ISO 45001, SA8000, ISO 9001.), the frequency and severity index of accidents and the number of HSE trained employees.

414-2: NEGATIVE SOCIAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN

Negative social impacts in the supply chain and actions taken

Description	U.M.	2020	2021	2022
Suppliers assessed for social impacts*	no.	43	65	68
Suppliers identified as having significant actual and potential negative social impacts	no.	43	65	68
Suppliers identified as having significant actual and potential negative social impacts, with which improvements were agreed upon as a result of assessment	no.	6	40	45
Suppliers identified as having significant actual and potential negative social impacts, with which improvements were agreed upon as a result of assessment	%	14%	62%	66%
Suppliers identified as having significant actual and potential negative social impacts, with which relationships were terminated as a result of assessment**	no.	1	2	3
Suppliers identified as having significant actual and potential negative social impacts, with which relationships were terminated as a result of assessment	%	2%	3%	4%

Notes: The process of performance assessment on social issues went into effect in 2020.

As part of its risk and opportunity assessment process, Open Fiber has identified actual and potential negative social impacts. These are mainly related to issues linked to Occupational Health and Safety, negative impacts on citizenship (in terms of traffic, interruption of the provision of public utilities due to damage, injuries due to inappropriate management of construction sites) and labour practices (e.g., related to the contribution regularity of companies). The improvement actions, in fact, have been agreed upon mainly as a result of accidents involving citizens, damage to underground utilities, and contribution irregularities.

* Suppliers, assigned contracts by Open Fiber, assessed during contract execution in the areas of quality, environment and safety were considered. In addition, account was taken of suppliers for whom irregular DURCs were detected during 2022 (irregularities with INPS [Italian National Institute for Social Security], INAIL [Italian National Institute for Insurance against Accidents at Work]).

** During 2022, three firms (two single firms and one consortium member) were excluded from the access mechanism/supplier register due to contribution irregularities that have not been remedied.

6.5.7 Development of human capital

401-1: NEW EMPLOYEE HIRES AND EMPLOYEE TURNOVER

New employee hires since 1 January to 31 December

Description	Age group	U.M.	2020	2021	2022
New employee hires by age group	< 30 years old	no.	81	63	121
	Between 30 and 50 years old	no.	196	152	267
	> 50 years old	no.	8	6	19
New employee hires by gender	Women	no.	105	83	142
	Men	no.	180	138	265
Total new employee hires		**no.**	**285**	**221**	**407**
Rate of employee hires by age group	< 30 years old	%	39%	32%	49%
	Between 30 and 50 years old	%	24%	16%	23%
	> 50 years old	%	7%	4%	11%
Rate of employee hires by gender	Women	%	30%	20%	28%
	Men	%	23%	16%	25%
Total rate of employee hires		**%**	**25%**	**17%**	**26%**

Terminations of employment from 1 January to 31 December

Gender	Age group	U.M.	2020	2021	2022
Terminations of employment by age group	< 30 years old	no.	11	19	24
	Between 30 and 50 years old	no.	32	59	90
	> 50 years old	no.	4	4	11
Terminations of employment by gender	Women	no.	14	28	36
	Men	no.	33	54	89
Total terminations		**no.**	**47**	**82**	**125**
Turnover rate by age group	< 30 years old	%	5%	10%	10%
	Between 30 and 50 years old	%	4%	6%	8%
	> 50 years old	%	3%	3%	7%
Turnover rate by gender	Women	%	4%	7%	7%
	Men	%	4%	6%	8%
Total turnover rate		**%**	**4%**	**6%**	**8%**

Notes: The rate of employee hires was calculated as the number of employees hired during the reporting period compared to the total number of employees at the end of the reporting period. The turnover rate was calculated as the number of terminations during the reporting period compared to the total number of employees at the end of the reporting period.

401-3: PARENTAL LEAVE

Employees that were entitled to parental leave in the reporting year

Description	U.M.	2020	2021	2022
Employees that were entitled to maternity leave	no.	350	405	511
Employees that were entitled to paternity leave	no.	800	884	1,060
Total	**no.**	**1,150**	**1,289**	**1,571**

Employees that took parental leave in the reporting year

Description	U.M.	2020	2021	2022
Employees that took maternity leave	no.	18	29	37
Employees that took paternity leave	no.	38	45	43
Total	**no.**	**56**	**74**	**80**

Employees that returned to work after parental leave ended that were still employed 12 months after their return to work

Description	U.M.	2020	2021	2022
Employees that returned to work after the maternity leave ended	no.	10	15	29
Employees that returned to work after the paternity leave ended	no.	38	45	43
Total	**no.**	**48**	**60**	**72**

Employees that returned to work after parental leave ended that were still employed 12 months after their return to work

Description	U.M.	2020	2021	2022
Employees that returned to work after maternity leave ended that were still employed 12 months after their return to work	no.	3	10	15
Employees that returned to work after paternity leave ended that were still employed 12 months after their return to work	no.	29	32	45
Total	**no.**	**32**	**42**	**60**

Employees that were due to return to work after taking parental leave

Description	U.M.	2020	2021	2022
Employees that were due to return to work after taking maternity leave	no.	10	29	37
Employees that were due to return to work after taking paternity leave	no.	38	45	43
Total	**no.**	**48**	**74**	**80**

Return to work rate

Description	U.M.	2020	2021	2022
Women	%	100%	52%	78%
Men	%	100%	100%	100%
Total	**%**	**100%**	**81%**	**90%**

Retention rate

Description	U.M.	2020	2021	2022
Women	%	75%	100%	100%
Men	%	97%	84%	100%
Total	**%**	**94%**	**88%**	**100%**

404-1: AVERAGE HOURS OF TRAINING PER YEAR PER EMPLOYEE

Hours of training

Description		U.M.	2020	2021	2022
Training by employee category (average hours per capita)	Executives	h/employee	14	14	24
	Middle managers	h/employee	34	36	27
	Office workers	h/employee	49	39	35
Training by gender (average hours per capita)	Women	h/employee	40	36	32
	Men	h/employee	49	38	34
Average hours of training per employee		**h/employee**	**46**	**38**	**34**
Total hours of training		**h/employee**	**53,179**	**48,435**	**52,926**

Notes: With regard to the training of executives, there was a significant increase in 2022 compared to previous years as a result of the integration of specific training programmes focusing on the empowerment of managerial leadership.

404-3: PERCENTAGE OF EMPLOYEES RECEIVING REGULAR PERFORMANCE AND CAREER DEVELOPMENT REVIEWS

Employees receiving regular performance and career development reviews by employment category

Employee category	U.M.	2020	2021	2022
Executives	%	100%	100%	100%
Middle managers	%	99%	97%	89%
Office workers	%	96%	71%	56%

Employees receiving regular performance and career development review by gender

Gender	U.M.	2020	2021	2022
Women	%	96%	58%	50%
Men	%	97%	83%	66%

EMPLOYEES RECEIVING REGULAR PERFORMANCE AND CAREER DEVELOPMENT REVIEW

Description	U.M.	2020	2021	2022
Total of employees receiving regular reviews	**%**	**96%**	**75%**	**61%**

Notes: The pandemic crisis has significantly changed the way we work and relate to each other, making smart working an integral part of our corporate culture. The company's "Fiber Working" model has made it possible to work nimbly, even remotely, and to continue to pursue the company project with enthusiasm and determination, but it has also substantially changed everyone's working methods and, consequently, the skills and abilities required for this new way of working. For this reason, in 2021 the company launched a project to review the skills assessment process with the aim of ensuring a measurement and development system that keeps pace with the new hybrid ways of working and the new set of skills required by the Fiber Working model. This process review led to the launch of the Behaviour & Performance Evaluation (BPE) at the end of 2022. For 2022, the number of employees assessed was based on the following:
• Number of employees who were assigned a variable element of remuneration (AB/MBO), the amount of which is based on the assessment of the objectives assigned annually.
• Number of employees who were awarded a meritocratic element during the rewarding process.

The percentage decrease compared to 2021 is due to the increase in the number of hires in 2022. New hires are not subject to periodic performance and personal development appraisals until they have been in the company for a minimum amount of time.

6.5.8 Occupational Health & Safety

403-5: WORKER TRAINING ON OCCUPATIONAL HEALTH AND SAFETY

Hours of training on Occupational Health and Safety and Environmental Protection - Open Fiber employees

Description	U.M.	2020	2021	2022
Total number of hours of training on Health, Safety and Environment (HSE)	h	7,178	5,492	9,498
Average hours of training on HSE per employee	h/employee	6	4	6

Hours of training on Occupational Health and Safety and Environmental Protection - Open Fiber Employees + Other personnel

Description	U.M.	2020	2021	2022
Total number of hours of training on Health, Safety and Environment (HSE)	h	7,266	5,570	9,776

Notes: Health, Safety and Environment training includes: mandatory HSE training and necessary HSE training, HSE management system pills and pills promoted by the HSE function. From 2020 onwards, HSE topics have been incorporated within the OnBoarding programmes and are therefore included in the total of courses classified as "OnBoarding" (which provide approximately 4-6 h of training on HSE topics).

The increase in training in 2022 was due to an increase in courses falling under the category "required training" (beyond legal obligations) dedicated to HSE topics at all company levels.

Training to other personnel does not include training provided to contractors and subcontractors involved in the network creation and management activities (Creation, Delivery & Assurance).

403-9: WORK-RELATED INJURIES

Open Fiber Employees

Description		U.M.	2020	2021	2022
Hours worked		h	1,908,089	2,175,973	2,417,521
Lost Time Injuries (including fatalities)	Total number	no.	0	0	1
	With high consequences*	no.	0	0	0
	fatalities	no.	0	0	0
Commuting injuries**		no.	1	2	3
Lost time injuries Frequency rate		-	0.00	0.00	0.41
Lost Time Injuries Frequency Rate (including commuting injuries)		-	0.52	0.92	1.65
Frequency rate for lost time injuries with high-consequences		-	0.00	0.00	0.00
Frequency rate of work-related fatalities		-	0.00	0.00	0.00
Main types of injuries		The accident that occurred during the three-year period was due to a road accident that happened during working hours.			

Notes:

* > 6 months of absence excluding deaths. Injuries with a prognosis of more than 180 days as of 31/12 are taken into account.

** Only if the transport was organised by the company and the journeys took place within working hours.

Workers who are not employees, but whose work and/or place of work is under the control of the company

Description		U.M.	2020	2021	2022
Hours worked		h	12,934,989	13,467,097	14,006,513
Lost Time Injuries (including fatalities)	Total number	no.	36	31	29
	With high consequences*	no.	0	1	1
	fatalities	no.	0	0	0
Commuting injuries**		no.	0	0	0
Lost time injuries Frequency rate		-	2.78	2.30	2.07
Frequency rate for lost time injuries with high-consequences		-	0.00	0.07	0.07
Frequency rate of work-related fatalities		-	0.00	0.00	0.00
Main types of injuries		Investment: the activities are carried out on roads or on the side or very close to roads and ordinary road traffic in urban and extra-urban contexts. The small size of the worksite areas entails risks for workers who can be run over by work vehicles or by vehicles outside the worksite area (cars). Crushed limbs/shocks/impacts: among the most frequent activities is the opening and closing of manhole covers, generally made of cast iron and with a "segmented" opening. This activity exposes the worker to the risk of shocks, impacts and crushing of limbs if performed incorrectly.		

Notes:

* > 6 months of absence excluding deaths. Injuries with a prognosis of more than 180 days as of 31/12 are taken into account.

** commuting injuries of third-party personnel are not reported as the commute is not organised by Open Fiber and do not reflect the activities carried out under the existing contracts.

With regard to 2020, there was 1 fatal traffic accident that occurred during a work break and was not related to the area or to site operations.

With reference to companies operating in Creation, Delivery & Assurance activities, the estimated number of FTEs for the year 2022 is 6,956.

Overall performance (Open Fiber employees and workers who are not employees, but whose work and/or place of work is under the control of the company)

Description	U.M.	2020	2021	2022
Lost time injuries Frequency rate	-	2.43	1.98	1.83
Frequency rate for lost time injuries with high-consequences	-	0.00	0.06	0.06
Frequency rate of work-related fatalities	-	0.00	0.00	0.00

Notes: In 2020, the frequency index for work-related injuries with high consequences was updated following the reclassification of an injury involving an external employee (for more details see the notes for "Workers who are not employees but whose work and/or workplace is under the control of the company").

Standards, methodologies, and conversion factors
The frequency indexes were calculated on the basis of 1,000,000 hours worked.

With reference to the injury performance of Workers who are not employees, but whose work and/or place of work is under the control of the company, in order to ensure representativeness of Open Fiber's business, the employees of companies operating within the Creation and Delivery & Assurance activities were considered.

Hours worked by Open Fiber employees are measured through the attendance tracking system. Hours worked by employees of companies involved in Creation, Delivery and Assurance are calculated starting from the FTE data communicated by the companies in the reporting period.

6.5.9 Diversity, Equity & Inclusion

405-1: DIVERSITY OF GOVERNANCE BODIES AND EMPLOYEES

Diversity of governance bodies

Board of Directors by gender and age group			U.M.	2020	2021	2022
BoD Members as of December 31st	Women	< 30 years old	%	0.0%	0.0%	0.0%
		Between 30 and 50 years old	%	17.0%	17.0%	29.0%
		> 50 years old	%	33.0%	17.0%	14.0%
	Total Women		**%**	**50.0%**	**34.0%**	**43.0%**
	Men	< 30 years old	%	0.0%	0.0%	0.0%
		Between 30 and 50 years old	%	17.0%	33.0%	29.0%
		> 50 years old	%	33.0%	33.0%	29.0%
	Total Men		**%**	**50.0%**	**66.0%**	**57.0%**
Members of the Board of Directors belonging to vulnerable groups by gender			**U.M.**	**2020**	**2021**	**2022**
Members of the Board of Directors belonging to protected categories	Women		%	0.0%	0.0%	0.0%
	Men		%	0.0%	0.0%	0.0%
	Total		**%**	**0.0%**	**0.0%**	**0.0%**

Diversity of employees

Employees by gender and age group			U.M.	2020	2021	2022
Employees with an employment contract as of 31 December	Executives	Women	%	12.5%	10.6%	19.0%
		Men	%	87.5%	89.4%	81.0%
	Middle managers	Women	%	17.1%	20.0%	19.7%
		Men	%	82.9%	80.0%	80.3%
	Office workers	Women	%	32.9%	33.6%	34.4%
		Men	%	67.1%	66.4%	65.6%
	Total Women		**%**	**30.4%**	**31.4%**	**32.5%**
	Total Men		**%**	**69.6%**	**68.6%**	**67.5%**
Employees by employee category and age group			**U.M.**	**2020**	**2021**	**2022**
Employees with an employment contract as of 31 December	Executives	< 30 years old	%	0.0%	0.0%	0.0%
		Between 30 and 50 years old	%	39.6%	36.2%	39.7%
		> 50 years old	%	60.4%	63.8%	60.3%
	Middle managers	< 30 years old	%	0.0%	0.0%	0.0%
		Between 30 and 50 years old	%	71.8%	70.0%	65.5%
		> 50 years old	%	28.2%	30.0%	34.3%
	Office workers	< 30 years old	%	21.0%	17.5%	18.3%
		Between 30 and 50 years old	%	73.5%	76.4%	75.8%
		> 50 years old	%	5.5%	6.1%	5.9%
	Total < 30 years old		**%**	**18.0%**	**15.1%**	**16.0%**
	Total Between 30 and 50 years old		**%**	**71.9%**	**74.3%**	**73.5%**
	Total > 50 years old		**%**	**10.1%**	**10.6%**	**10.5%**
Employees belonging to vulnerable groups			**U.M.**	**2020**	**2021**	**2022**
Executives			%	0.0%	0.0%	0.0%
Middle managers			%	0.0%	0.8%	1.4%
Office workers			%	3.4%	3.2%	2.9%
Total employees belonging to vulnerable groups			**%**	**3.4%**	**4.0%**	**4.3%**

Notes: For "Diversity of governance bodies", the percentages are calculated as the number of governance body members falling into this specific category compared to the total number of governance body members in the reporting year.

For "Diversity of employees", the percentages are calculated as the number of employees falling into this specific category compared to the total number of employees by employment contract in the reporting year.

With regard to the governing body, the increase in the number of women on the board is due to the change in its members in 2022.

6.5.10 Innovation and digitisation and Relations with the community

413-1: OPERATIONS WITH LOCAL COMMUNITY ENGAGEMENT, IMPACT ASSESSMENTS, AND DEVELOPMENT PROGRAMMES

Operations with local community engagement, impact assessments, and development programmes

Description	U.M.	2020	2021	2022
Operations with local community engagement, impact assessments, and/or development programmes	%	100%	100%	100%

Notes: 100% of infrastructure implementation activities involve local community engagement on at least one of the following: social impact screenings, environmental impact screenings and ongoing monitoring, public dissemination of the results of environmental and social impact screenings; local community development programs based on local community needs; stakeholder engagement plans based on stakeholder mapping; consultation committees open to the local community and processes that include vulnerable groups; enterprise committees, Occupational Safety and Health committees, and other worker representative bodies to address impacts; and formal processes for handling complaints from the local community.

6.5.11 Privacy and Cybersecurity

418-1: FOUNDED COMPLAINTS CONCERNING BREACHES OF CUSTOMER PRIVACY AND LOSSES OF THEIR DATA

Founded complaints concerning breaches of customer privacy and losses of their data

Description	U.M.	2020	2021	2022
Total founded complaints received regarding breaches of customer privacy	**no.**	**0**	**0**	**0**
of which complaints about breaches of customer privacy received from third parties and substantiated by the organisation	no.	0	0	0
of which complaints about breaches of customer privacy received from regulatory bodies	no.	0	0	0
Total identified incidents of leaks, thefts or loss of customer data	**no.**	**0**	**1**	**0**

Notes: The data breach in 2021 concerned the disclosure of personal data of some users of the Open Fiber website (the impact concerned only common, not special data of about 250 users) to third parties. The event was immediately disclosed to users and repaired. A disclosure was submitted to the Privacy Authority without any response.

6.6 GRI CONTENT INDEX

The GRI Content Index contains timely references to the Sustainability Report 2022 and to other Open Fiber documents and sources (e.g., website) containing more details or any insights related to a specific topic and to standards can be found. For each disclosure has been listed:

- The number and description of the reference disclosure.
- The page number or links where the information can be found, either within the report or on other documents published by Open Fiber.
- Any comments and omissions.

Statement of use	Open Fiber S.p.A. has reported in accordance with the GRIStandards for the period 01/01/2022 – 31/12/2022
Utilizzato GRI 1	GRI: Foundation 2021
GRI 1 used	No applicable GRI Sector Standard among those currently available

GENERAL DISCLOSURE

GRI 2: General Disclosure 2021

The organization and its reporting practices

Disclosure		2-1 Organizational details
Location		14-19, 22-27, 50-51
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		Open Fiber S.p.A. Registered office Viale Certosa, 2 - 20155 Milan, Italy Headquarters Via Laurentina, 449 - 00142 Rome For further details www.openfiber.it
Disclosure		2-2 Entities included in the organization's sustainability reporting
Location		155-156
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		The data and information reported within Open Fiber's report refer to Open Fiber S.p.A. A qualitative disclosure was also made on the Open Fiber Network Solutions, a consortium formed in 2022 by Open Fiber together with Amplia Infrastructures and CIEL.
Disclosure		2-3 Reporting period, frequency and contact point
Location		155-156
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		The reporting period for the report is from 01/01/2021 to 12/31/2022. The reporting frequency is annual. The Sustainability Report 2022 is published in April 2023. Contact: csv.of@openfiber.it

GENERAL DISCLOSURE

Disclosure	**2-4 Restatements of information**
Location	155-156

	Requirement(s) Omitted	–
Omission	Reason	–
	Explanation	–

Comments	The previous version of the Open Fiber Sustainability Report (covering the year 2021) is available on the company website: https://openfiber.it/corporate/sostenibilita/obiettivi-sostenibilita/ For restatements in data from previous years and the reasons for them, please refer to the comments provided for the relevant disclosures within Section 6.5 Data and indicators tables.

Disclosure	**2-5 External assurance**
Location	206-209

	Requirement(s) Omitted	–
Omission	Reason	–
	Explanation	–

Comments	Report of the auditing firm Deloitte.

Activities and workers

Disclosure	**2-6 Activities, value chain and other business relationships**
Location	14-19, 33-36, 51-54, 99-102, 124-125

	Requirement(s) Omitted	–
Omission	Reason	–
	Explanation	–

Comments	For more details www.openfiber.it Open Fiber Network Solutions, a consortium formed by Open Fiber together with Amplia Infrastructures and CIEL, was established in 2022, the goal of advancing Italy's digital and technological transformation. There are 360 qualified suppliers as of Dec. 31, 2023, divided among the following macro-categories: works and construction sites (no.121), supplies (no. 105), logistics (no. 4) and services (no. 130).

Disclosure	**2-7 Employees**
Location	127, 169

	Requirement(s) Omitted	–
Omission	Reason	–
	Explanation	–

Comments	–

Disclosure	**2-8 Workers who are not employees**
Location	169

	Requirement(s) Omitted	–
Omission	Reason	–
	Explanation	–

Comments	With reference to contractors performing in Creation, Delivery & Assurance activities, the estimated number of FTEs for the year 2022 is 6,956.

Governance

Disclosure		**2-9 Governance structure and composition**
Location		22-26
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		The Chief Executive Officer and the Chairman of the Board of Directors are executive directors. Legal representation is vested in the Chairman, Chief Executive Officer, and Vice Chairman. The remaining directors are nonexecutive members. The Board of Directors holds office for three fiscal years (current expiration upon approval of the Financial statement 2023) and its members are eligible for reelection. The Chairman of the Board of Directors, as well as a member of the Related Parties Committee, is an independent Director of Webuild S.p.A. One Director, as well as a member of all four endoconsiliar Committees, is a member of the Board of Directors of Autostrade per l'Italia S.p.A. In general, within the Board of Directors there are individuals of different ages and seniority in office, with diversified and mutually complementary professional skills in order to facilitate the dialectic and efficient functioning of the Board. In particular, there is expertise in the infrastructure sector, financial expertise on infrastructure projects and investment financing and management, and legal expertise. For information regarding the gender composition of the Board of Directors, please refer to disclosure 405-1. None of the board members are independent.
Disclosure		**2-10 Nomination and selection of the highest governance body**
Location		–
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		The Company is administered by a seven-member Board of Directors, as resolved by the Shareholders' Meeting, directors are appointed on the basis of a single list submitted by the Shareholders, the Board of Directors consists of 4 directors, including the Chairman of the Board of Directors and Chief Executive Officer, and 3 directors, including the Vice Chairman. For the procedures for the appointment and selection of the endoconsiliar committees, please refer to 1.3.1 "Governance system and company organisation". Since the Company is neither listed nor subject to compliance with special criteria specified in special regulations, lists are submitted by shareholders. In addition, the Articles of Association stipulate that careful criteria for diversity and gender balance should be considered in the selection of members of corporate bodies. The expertise present within the Board of Directors reflects the diverse knowledge needed in business management in the telecommunications sector.
Disclosure		**2-11 Chair of the highest governance body**
Location		–
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		The Chairman of the Board of Directors is not a senior executive of the organization.
Disclosure		**2-12 Role of the highest governance body in overseeing the management of impacts**
Location		22-26
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		The Board of Directors is responsible for approving the Sustainability Report prepared annually by the organization on a voluntary basis. Within the Sustainability Report Open Fiber declares its mission, vision, values and strategies also in the area of economic, environmental and social issues, as well as the policies and objectives from the Company related to sustainable development. With reference to the management of risks and related impacts related to ESG issues, please refer to what is reported about the Audit and Risk Committee within Section 1.3.1 "Governance system and company organisation".

GENERAL DISCLOSURE

Disclosure	2-13 Delegation of responsibility for managing impacts
Location	–

Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–

Comments	Open Fiber has defined a system of proxies and powers of attorney designed to ensure the management of impacts on the economy, the environment and people. With specific reference to the management of occupational health and safety and environmental protection in accordance with Legislative Decree 81/2008 and Legislative Decree 152/2006), these proxies provide for a distribution of responsibilities in this area and are designed to ensure the oversight of these issues at all levels of the company. With reference to delegated powers in HSE matters, the Board of Directors has identified the CEO as the Employer, giving him powers in environmental matters as well. The CEO has delegated functions to a number of corporate executives with reference to HSE issues on the basis of the Department to which they belong. In turn, the delegates identified by the CEO have given sub-delegations to their respective reports with reference to the HSE issues under their responsibility. The manner and frequency with which the delegates report to the Board of Directors is defined within the specific delegated powers.

Disclosure	2-14 Role of the highest governance body in sustainability reporting
Location	–

Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–

Comments	The Board of Directors is responsible for approving the Sustainability Report, which is prepared annually on a voluntary basis.

Disclosure	2-15 Conflicts of interest
Location	–

Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–

Comments	The Company's Code of Ethics and MOG 231 stipulate that in the conduct of any activity, situations must be avoided where the individuals involved in the transactions are, or may even just appear to be, in conflict of interest. In addition, in order to ensure that each director can fulfill the duty (also in compliance with the Civil Code) to declare any interest in the transaction of which he/she takes note or whose approval is required, the documentation relating to the items on the agenda of the Board of Directors' meeting is sent 5 working days in advance of the date of that meeting (given the holidays in Rome, Milan, Luxembourg and London). The expression of interest at the meeting is recorded in the minutes of the relevant Board meeting. In general: - The Articles of Association provide that "the Persons who will hold the position of Chairman of the Board of Directors, Vice Chairman, Chief Executive Officer and Chief Financial Officer of the Company shall not be in a situation of conflict of interest with the Shareholders, as well as with the Company and/or Open Fiber Holdings." - Open Fiber is a wholly owned subsidiary of Open Fiber Holding whose members of the Board of Directors coincide with those of Open Fiber. - The Company, on December 3, 2021, established a Related Parties Committee. In addition, Open Fiber has adopted a Procedure for the Management of Related Party Transactions and is in the process of implementing the Register of Entities and Individuals, which will also include tracking of any offices held in other companies and/or ownership of shares in other companies. The Code of Ethics is available on the company website https://openfiber.it/corporate/societa/codice-etico.

Disclosure	2-16 Communication of critical concerns		
Location	22-26, 28-30, 36-38		
Omission	Requirement(s) Omitted	–	
	Reason	–	
	Explanation	–	
Comments	Open Fiber has defined a number of channels to ensure the management and tracking of any critical issues. For more details, see sections 1.3, 1.4 e 1.5 and, in particular, the Crisis Committee, the "EQS Integrity Line" reporting channels and the Antitrust Oversight. With regard to ESG issues, there are no critical issues reported to the Board of Directors during the reporting period.		
Disclosure	2-17 Collective knowledge of the highest governance body		
Location	22-26		
Omission	Requirement(s) Omitted	–	
	Reason	–	
	Explanation	–	
Comments	Open Fiber has established the Sustainability Committee with the mission of assisting, in a proactive and advisory capacity, the Board of Directors in ESG risk and opportunity assessments and decisions on sustainability issues related to the business with the aim of generating shared value in the long term. The Board of Directors is responsible for approving the Sustainability Report, within which the organization's strategy in relation to sustainable development is argued.		
Disclosure	2-18 Evaluation of the performance of the highest governance body		
Location	–		
Omission	Requirement(s) Omitted	a, b, c	
	Reason	Confidentiality constraints	
	Explanation	Open Fiber, a single-member joint-stock company subject to the management and coordination of Open Fiber Holdings S.p.A., as it is not listed on the stock exchange, is not subject to the obligation to publish the Remuneration Report (pursuant to Article 123-ter of the Consolidated Law on Finance Legislative Decree No. 58/1998) and thus the information on the performance evaluation procedures of the Board of Directors.	
Comments	–		
Disclosure	2-19 Remuneration policies		
Location	–		
Omission	Requirement(s) Omitted	a, b	
	Reason	Confidentiality constraints	
	Explanation	Open Fiber, a single-member joint-stock company subject to the management and coordination of Open Fiber Holdings S.p.A., as it is not listed on the stock exchange, is not subject to the obligation to publish the Remuneration Report (pursuant to Article 123-ter of the Consolidated Law on Finance Legislative Decree No. 58/1998) and thus information regarding the remuneration of members of the Board of Directors.	
Comments	–		
Disclosure	2-20 Process to determine remuneration		
Location	–		
Omission	Requirement(s) Omitted	a, b	
	Reason	Confidentiality constraints	
	Explanation	Open Fiber, a single-member joint-stock company subject to the management and coordination of Open Fiber Holdings S.p.A., as it is not listed on the stock exchange, is not subject to the obligation to publish the Remuneration Report (pursuant to Article 123-ter of the Consolidated Law on Finance Legislative Decree No. 58/1998) and thus the information on the procedure for determining remuneration.	
Comments	–		

GENERAL DISCLOSURE

Disclosure		**2-21 Annual total compensation ratio**
Location		–
Omission	Requirement(s) Omitted	a, b, c
	Reason	Confidentiality constraints
	Explanation	Open Fiber, a single-member joint-stock company subject to the direction and coordination of Open Fiber Holdings S.p.A., as it is not listed on the stock exchange, is not subject to the obligation to publish the Remuneration Report (pursuant to Article 123-ter of the Consolidated Law on Finance Legislative Decree No. 58/1998) and therefore information on compensation paid, including that of the highest-paid individual within the organization, is not made public. The ratio required by GRI disclosure 2-21 would allow for an almost immediate identification of the value of the remuneration of the highest paid individual being the median values of all employees (excluding the highest paid individual) that can be found by looking at market data in Open Fiber's reference sector. The data, once disclosed would make public information that to date is classified as confidential.
Comments		–

Strategy, policies and practices

Disclosure		**2-22 Statement on sustainable development strategy**
Location		4-7, 8-13
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**2-23 Policy commitments**
Location		8-13, 15-18, 28-36, 40-43, 44-45, 71-76, 84-85
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		Open Fiber's Sustainability Policy is available on the company website at the following link: https://openfiber.it/corporate/sostenibilita/obiettivi-sostenibilita/.
Disclosure		**2-24 Embedding policy commitments**
Location		8-13, 15-18, 22-26, 28-36, 40-43, 44-45, 150-153
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**2-25 Processes to remediate negative impacts**
Location		28-32, 40-43, 54-56, 139, 156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

Disclosure	2-26 Mechanisms for seeking advice and raising concerns		
Location	28-30, 139		
Omission	Requirement(s) Omitted	–	
	Reason	–	
	Explanation	–	
Comments	–		
Disclosure	2-27 Compliance with laws and regulations		
Location	–		
Omission	Requirement(s) Omitted	–	
	Reason	–	
	Explanation	–	
Comments	With reference to significant cases of non-compliance with laws and regulations, the following penalties are noted in the 2020-2022 period: - payment injunction in the amount of approximately Euro 720 thousand for non-payment of the 2018 COSAP (fee for the occupation of public spaces and areas) notified to OF by the City of Florence in January 2022. The injunction in question was appealed by OF before the Court of Florence and the case is still pending; - as a result of enforcement proceedings initiated in January 2022 by ICA S.r.l. - the concessionaire company of the collection service of the municipality of Pavia - by virtue of the non-payment of the temporary TOSAP (public land occupation tax), with respect to the 2019 and 2020 annuities, OF paid an amount of approximately Euro 200,000 in February 2022. The significance criteria applied concerned penalties in the criminal sphere and penalties in the administrative or civil sphere for amounts greater than 10,000 euros.		
Disclosure	2-28 Membership associations		
Location	165-168		
Omission	Requirement(s) Omitted	–	
	Reason	–	
	Explanation	–	
Comments	–		

Stakeholder engagement

Disclosure	2-29 Approach to stakeholder engagement		
Location	162-164		
Omission	Requirement(s) Omitted	–	
	Reason	–	
	Explanation	–	
Comments	–		

GENERAL DISCLOSURE

Disclosure		2-30 Collective bargaining agreements
Location		–
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		All employees (100%) are covered by a national collective bargaining agreement.

MATERIAL TOPICS

GRI 3: Material Topics 2021

Disclosure		3-1 Process to determine material topics
Location		156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		3-2 List of material topics
Location		156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

CONTRIBUTION TO ECONOMIC DEVELOPMENT

GRI 3: Material Topics 2021

Disclosure		3-3 Management of material topics
Location		20-22, 30-33, 156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

CONTRIBUTION TO ECONOMIC DEVELOPMENT

GRI 201: Economic Performance 2016

Disclosure		**201-1 Direct economic value generated and distributed**
Location		20-22, 170
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**201-2 Financial implications and other risks and opportunities due to climate change**
Location		30-33
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**201-3 Defined benefit plan obligations and other retirement plans**
Location		–
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		Open Fiber employees can access the Telemaco supplementary pension fund (National Supplementary Pension Fund for Workers of Telecommunication Companies). Participation is on a voluntary basis and occurs automatically after 6 months of employment in case the employee does not express a contrary will (as provided by the CCNL). In 2022, the Company contributed 1.4% of each employee's fixed salary to the fund, totaling €260,000 (in 2020, Open Fiber's contribution was 1.2%, totaling €165,000, and in 2021 it was 1.3%, totaling €213,000). Open Fiber has not provided a separate fund for the payment of obligations under the pension plan.
Disclosure		**201-4 Financial assistance received from government**
Location		171
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 203: Indirect Economic Impacts 2016

Disclosure		**203-1 Infrastructure investments and services supported**
Location		20-21
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

CONTRIBUTION TO ECONOMIC DEVELOPMENT

Disclosure		**203-2 Significant indirect economic impacts**
Location		20-21, 87-107, 115-124
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

FIGHT AGAINST CORRUPTION

GRI 3: Material Topics 2021

Disclosure		**3-3 Management of material topics**
Location		28-32, 156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 205: Anti-corruption 2016

Disclosure		**205-1 Operations assessed for risks related to corruption**
Location		28-32, 171
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**205-2 Communication and training about anti-corruption policies**
Location		28-32, 171
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		Open Fiber provides training modules aimed at raising the awareness of the entire corporate population on behaviors or circumstances that may occur in the types of offenses provided for in Legislative Decree No. 231/2001, including those related to corruption. With reference to disclosure 205-2a and 205-2d it is reported that all members (100%) of the governing body are aware of and trained on anti-corruption issues as it is the responsibility of the BoD to approve Code of Ethics and MOG 231. With reference to disclosure 205-2c, it is reported that all partners (100%) of Open Fiber (whether suppliers or other collaborators) are obliged to sign and comply with the Code of Ethics and MOG 231.

FIGHT AGAINST CORRUPTION

GRI 3: Material Topics 2021

Disclosure		**205-3 Confirmed incidents of corruption and actions taken**
Location		–
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		There are no reported incidents of corruption in the 2020-2022 period.

TRANSPARENCY AND EQUAL ACCESS

GRI 3: Material Topics 2021

Disclosure		**3-3 Management of material topics**
Location		33-36, 36-38, 156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 206: Anti-competitive Behavior 2016

Disclosure		**206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices**
Location		36-38
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		In 2022, there are no pending or concluded legal actions against Open Fiber regarding anticompetitive behavior, anti-competitive behavior, and violation of antitrust regulations.

FIGHTING CLIMATE CHANGE

GRI 3: Material Topics 2021

Disclosure		**3-3 Management of material topics**
Location		33-36, 40-43, 71-76, 156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 302: Energy 2016

Disclosure		**302-1 Energy consumption within the organization**
Location		71-74, 172
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

FIGHTING CLIMATE CHANGE

Disclosure		**302-3 Energy intensity**
Location		71-76, 172
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**302-4 Reduction of energy consumption**
Location		71-76
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 305: Emissions 2016

Disclosure		**305-1 Direct (Scope 1) GHG Emissions**
Location		71-76, 173
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**305-2 Energy indirect (Scope 2) GHG emissions**
Location		71-76, 173
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**305-4 GHG emissions intensity**
Location		71-76, 174
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**305-5 Reduction of GHG emissions**
Location		71-76
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

CIRCULARITY AND WASTE MANAGEMENT

GRI 3: Material Topics 2021

Disclosure		3-3 Management of material topics
Location		84-85, 156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 306: Waste 2020

Disclosure		306-1 Waste generation and significant waste-related impacts
Location		84-85
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

Disclosure		306-2 Management of significant wasterelated impacts
Location		84-85
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

Disclosure		306-3 Waste generated
Location		84-85, 174
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

Disclosure		306-4 Waste diverted from disposal
Location		84-85, 174
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

CIRCULARITY AND WASTE MANAGEMENT

Disclosure		**306-5 Waste directed to disposal**
Location		84-85
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		In the three-year period 2020-2022, no waste was generated for disposal facilities.

RESPONSIBLE MANAGEMENT OF THE SUPPLY CHAIN

GRI 3: Material Topics 2021

Disclosure		**3-3 Management of material topics**
Location		33-36, 156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 308: Supplier Environmental Assessment 2016

Disclosure		**308-1 New suppliers that were screened using environmental criteria**
Location		33-36, 175
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**308-2 Negative environmental impacts in the supply chain and actions taken**
Location		33-36, 175
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 414: Supplier Social Assessment 2016

Disclosure		**414-1 New suppliers that were screened using social criteria**
Location		33-36, 176
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

RESPONSIBLE MANAGEMENT OF THE SUPPLY CHAIN

Disclosure		**414-2 Negative social impacts in the supply chain and actions taken**
Location		33-36, 176
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

DEVELOPMENT OF HUMAN CAPITAL

GRI 3: Material Topics 2021

Disclosure		**3-3 Management of material topics**
Location		127-147, 156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 401: Employment 2016

Disclosure		**401-1 New employee hires and employee turnover**
Location		127-128, 177
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**401-2 Benefits provided to full-time employees that are not provided to temporary or parttime employees**
Location		139-143
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		Benefits such as supplementary health insurance, supplementary health insurance COVID-19 risk; prevention package are not provided for employees with fixed-term contracts. Insurance for occupational and non-occupational accidents; supplementary parental leave; supplementary allowance during months of leave; extra leave for bereavement, children's illness, medical examinations; meal vouchers; supplementary supplementary pension; possibility of converting the Results Bonus into welfare goods and services and benefits related to Wellness are provided for all employees (full-time and part-time, permanent and fixed-term). In reference to Smart Working, it has been applied to all employees who have signed Level II Agreement.

DEVELOPMENT OF HUMAN CAPITAL

Disclosure		**401-3 Parental leave**
Location		139-141, 178
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 404: Training and Education 2016

Disclosure		**404-1 Average hours of training per year per employee**
Location		130-137, 179
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**404-3 Percentage of employees receiving regular performance and career development reviews**
Location		139-141, 179
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

OCCUPATIONAL HEALTH & SAFETY

GRI 3: Material Topics 2021

Disclosure		**3-3 Management of material topics**
Location		33-36, 40-43, 148-153, 156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 403: Occupational Health and Safety 2018

Disclosure		**403-1 Occupational health and safety management system**
Location		40-43, 148-153
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

	Disclosure	**403-2 Hazard identification, risk assessment, and incident investigation**		
	Location	40-43, 148-153		
Omission	Requirement(s) Omitted	–		
	Reason	–		
	Explanation	–		
	Comments	–		
	Disclosure	**403-3 Occupational health services**		
	Location	40-43, 148-153		
Omission	Requirement(s) Omitted	–		
	Reason	–		
	Explanation	–		
	Comments	–		
	Disclosure	**403-4 Worker participation, consultation, and communication on occupational health and safety**		
	Location	40-43, 148-153		
Omission	Requirement(s) Omitted	–		
	Reason	–		
	Explanation	–		
	Comments	–		
	Disclosure	**403-5 Worker training on occupational health and safety**		
	Location	40-43, 130-138, 148, 180		
Omission	Requirement(s) Omitted	–		
	Reason	–		
	Explanation	–		
	Comments	–		
	Disclosure	**403-6 Promotion of worker health**		
	Location	142-143		
Omission	Requirement(s) Omitted	–		
	Reason	–		
	Explanation	–		
	Comments	Open Fiber provides health insurance for all employees. Two plans are available: A (Full Company Contribution) and B (Joint Contribution). The main benefits offered are: hospitalizations (with or without surgery), high-definition diagnostic and therapeutic services, home and outpatient visits and physiotherapy treatment, prevention package, cancer care, dental care, and lenses/contact lenses. All information handled is in line with the company's privacy policies.		

OCCUPATIONAL HEALTH & SAFETY

Disclosure		**403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships**
Location		33-36, 40-43, 148
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**403-9 Work-related injuries**
Location		148-150, 180
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**403-10 Work-related ill health**
Location		–
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		There were no cases of occupational disease recognized by INAIL during 2022.

DIVERSITY EQUITY AND INCLUSION

GRI 3: Material Topics 2021

Disclosure		**3-3 Management of material topics**
Location		23, 144-147, 156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 405: Diversity and Equal Opportunity 2016

Disclosure		**405-1 Diversity of governance bodies and employees**
Location		23, 182
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

INNOVATION AND DIGITALISATION

GRI 3: Material Topics 2021

Disclosure	**3-3 Management of material topics**		
Location	108-114, 156-161		
Omission	Requirement(s) Omitted	–	
	Reason	–	
	Explanation	–	
Comments	–		

GRI 413: Local Communities 2016

Disclosure	**413-1 Operations with local community engagement, impact assessments, and development programs**		
Location	80-83, 87-114, 183		
Omission	Requirement(s) Omitted	–	
	Reason	–	
	Explanation	–	
Comments	–		

GRI 203: Indirect Economic Impacts 2016

Disclosure	**203-1 Infrastructure investments and services supported**		
Location	20-21		
Omission	Requirement(s) Omitted	–	
	Reason	–	
	Explanation	–	
Comments	–		
Disclosure	**203-2 Significant indirect economic impacts**		
Location	20-21, 115-124		
Omission	Requirement(s) Omitted	–	
	Reason	–	
	Explanation	–	
Comments	–		

RELATIONSHIP WITH THE TERRITORY

GRI 3: Material Topics 2021

Disclosure	**3-3 Management of material topics**		
Location	87-107, 156-161		
Omission	Requirement(s) Omitted	–	
	Reason	–	
	Explanation	–	
Comments	–		

RELATIONSHIP WITH THE TERRITORY

GRI 413: Local Communities 2016

Disclosure	**413-1 Operations with local community engagement, impact assessments, and development programs**	
Location	77-83, 87-114, 183	
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments	–	

NETWORK RELIABILITY AND SERVICE QUALITY

GRI 3: Material Topics 2021

Disclosure	**3-3 Management of material topics**	
Location	42-43, 156-161	
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments	–	

GRI 416: Customer Health and Safety 2016

Disclosure	**416-1 Assessment of the health and safety impacts of product and service categories**	
Location	42-43, 77-79	
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments	100 % of the services provided by Open Fiber to operators are compliant with current regulations on customer health and safety and therefore include an assessment of health and safety impacts during their delivery. In addition, once work has been completed, Open Fiber's infrastructure is subject to testing, which, in the C&D Cluster is carried out by the Grantor Infratel Italia before it is put up for sale.	
Disclosure	**416-2 Incidents of non-compliance concerning the health and safety impacts of products and services**	
Location	–	
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments	100% of the services provided by Open Fiber to operators are compliant with current regulations on customer health and safety and therefore include an assessment of health and safety impacts during their delivery. In addition, once work has been completed, Open Fiber's infrastructure is subject to testing, which, in the C&D Cluster is carried out by the Grantor Infratel Italia before it is put up for sale. Therefore, there are no reported incidents of non-compliance with regulations and/or voluntary codes regarding health and safety impacts of products and services during 2022.	

NETWORK RELIABILITY AND SERVICE QUALITY

GRI 203: Indirect Economic Impacts 2016

Disclosure		**203-1 Infrastructure investments and services supported**
Location		20-21
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–
Disclosure		**203-2 Significant indirect economic impacts**
Location		20-21, 115-124
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

PRIVACY AND CYBERSECURITY

GRI 3: Material Topics 2021

Disclosure		**3-3 Management of material topics**
Location		32-33, 156-161
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

GRI 418: Customer Privacy 2016

Disclosure		**418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data**
Location		183
Omission	Requirement(s) Omitted	–
	Reason	–
	Explanation	–
Comments		–

REPORT OF THE AUDITING FIRM

**INDEPENDENT AUDITOR'S REPORT
ON THE SUSTAINABILITY REPORT**

To the Board of Directors of
Open Fiber S.p.A

We have carried out a limited assurance engagement on the Sustainability Report of Open Fiber S.p.A (hereinafter "the Company") as of December 31, 2022.

Responsibility of the Board of Directors for the Sustainability Report

The Directors of Open Fiber S.p.A are responsible for the preparation of the Sustainability Report in accordance with the "*Global Reporting Initiative Sustainability Reporting Standards*" established by GRI – *Global Reporting Initiative* ("GRI Standards"), which they have identified as reporting framework as specified in the "Methodological Note" paragraph in the Sustainability Report.

The Directors are also responsible for such internal control as they determine is necessary to enable the preparation of Sustainability Report that is free from material misstatement, whether due to fraud or error.

The Directors are moreover responsible for setting the Company's goals, with respect to sustainability performance, as well as for the identification of the Company' stakeholders and significant aspects to be reported.

Auditor's Independence and quality control

We have complied with the independence and other ethical requirements of the *Code of Ethics for Professional Accountants* issued by the *International Ethics Standards Board for Accountants*, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our auditing firm applies *International Standard on Quality Control 1* (*ISQC Italia 1*) and, accordingly, maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Deloitte.

Auditor's responsibility

Our responsibility is to express our conclusion based on the procedures performed about the compliance of the Sustainability Report with the GRI Standards. We conducted our work in accordance with the criteria established in the "*International Standard on Assurance Engagements ISAE 3000 (Revised) – Assurance Engagements Other than Audits or Reviews of Historical Financial Information*" (hereinafter "*ISAE 3000 Revised*"), issued by the *International Auditing and Assurance Standards Board* (IAASB) for limited assurance engagements. The standard requires that we plan and perform the engagement to obtain limited assurance whether the Sustainability Report is free from material misstatement.

Therefore, the procedures performed in a limited assurance engagement are less than those performed in a reasonable assurance engagement in accordance with ISAE 3000 Revised, and, therefore, do not enable us to obtain assurance that we would become aware of all significant matters and events that might be identified in a reasonable assurance engagement.

The procedures performed on Sustainability Report are based on our professional judgement and included inquiries, primarily with Company personnel responsible for the preparation of information included in the Sustainability Report, analysis of documents, recalculations and other procedures aimed to obtain evidence as appropriate.

Specifically, we carried out the following procedures:

1. analysis of definition process of relevant topics disclosed in the Sustainability Report, in order to assess the reasonableness of the selection process in place, of the definition of priorities with respect to the different stakeholders' categories, as well as of the internal results validation process;

2. comparison between the financial data and information included in the paragraph titled "Economic performance"in the Sustainability Report with those included in the consolidated financial statements of Open Fiber S.p.A;

3. understanding of the processes underlying the generation, collection and management of significant qualitative and quantitative information included in the Sustainability Report.

In particular, we have conducted interviews and discussions with Open Fiber S.p.A.'s personnel and management and we have carried out limited documentary verifications, in order to gather information about the processes and procedures which support the collection, aggregation, the elaboration and of non-financial data and information to the function responsible for the preparation of the Sustainability Report.

In addition, for material information, taking into consideration the Company's activities and characteristics:

a) with regards to qualitative information included in the Sustainability Report we carried out interviews and gathered supporting documentation in order to verify its consistency with the available evidence;
b) with regards to quantitative information, we carried out both analytical procedures and limited verifications in order to ensure, on a sample basis, the correct aggregation of data.

Deloitte.

Conclusion

Based on the work performed, nothing has come to our attention that causes us to believe that the Sustainability Report of Open Fiber S.p.A. for the fiscal year ended on December 31, 2022 is not prepared, in all material aspects, in accordance with the GRI Standards as describes in the paragraph "Methodological Note" in the Sustainability Report.

Other aspects

The Sustainability Report as of December 31, 2020, whose data are presented for comparative purposes, was submitted for a limited assurance engagement by another auditor who, on June 29, 2021 expressed a conclusion on this Report without any remarks.

DELOITTE & TOUCHE S.p.A.

Signed by
Francesco Legrottaglie
Partner

Rome, Italy
April 6, 2023

This report has been translated into the English language solely for the convenience of international readers.

open fiber