open fiber

SUSTAINABILITY REPORT 2021

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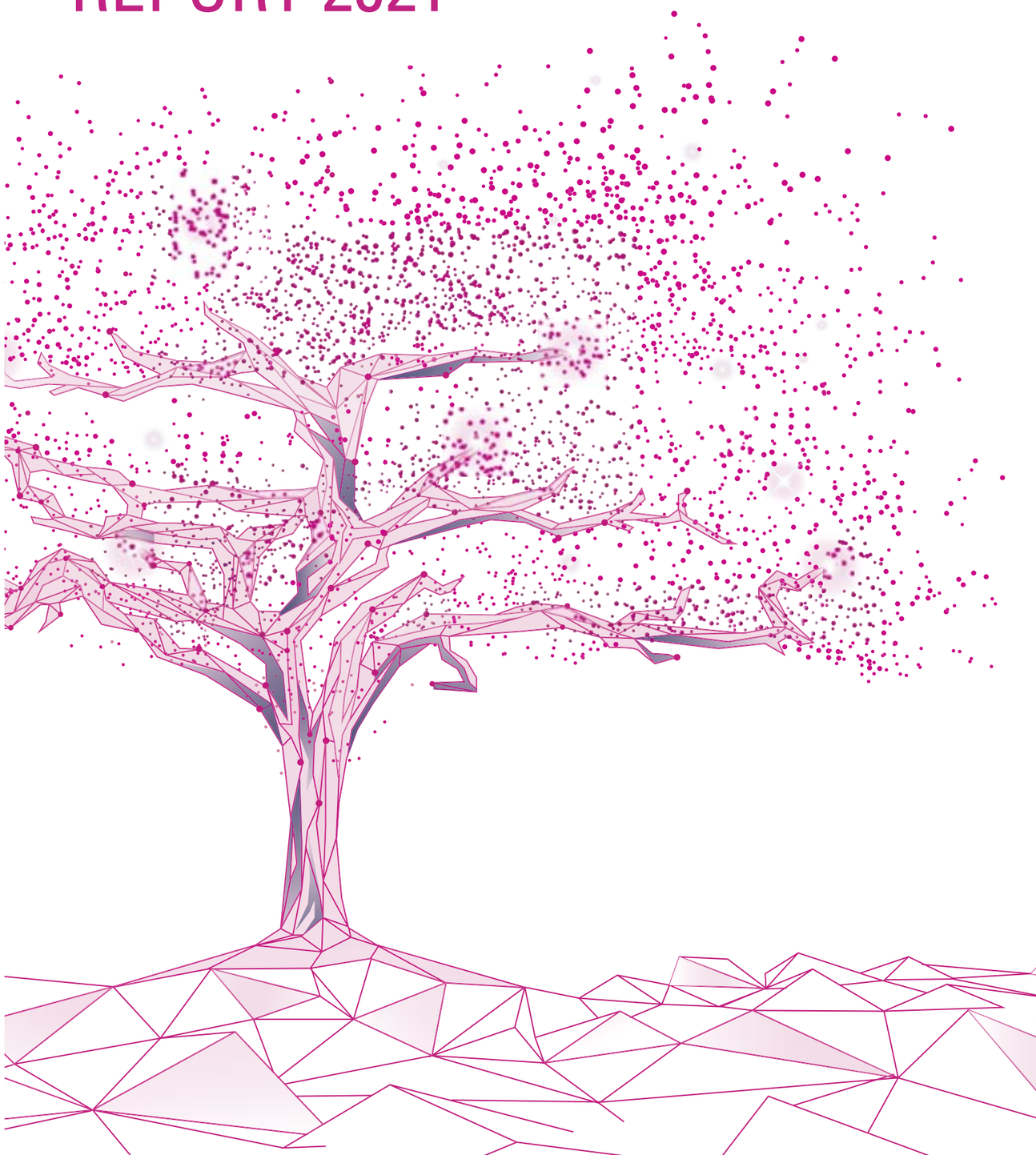

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LETTER TO THE STAKEHOLDERS

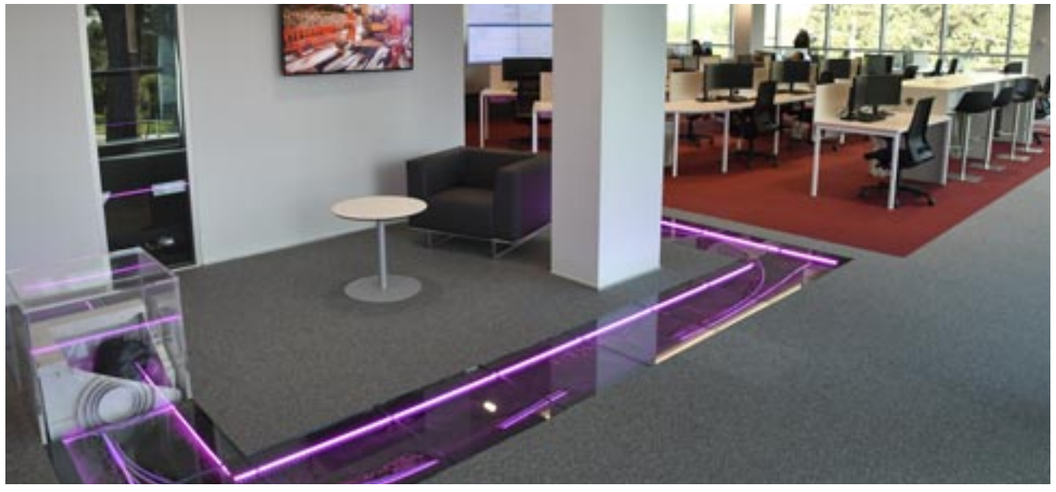
A future-oriented company with a sustainable DNA

Open Fiber was created with the aim of bridging the Italian digital divide and providing all citizens with an infrastructure capable of supporting the evolution of technology. Sustainability is therefore part of its nature and is deeply integrated into its industrial strategy and business model. The Company is linked to the territories and its stakeholders by a project strongly oriented towards the creation of shared value.

In this Sustainability Report we describe our commitment to change the country, our peculiarities, our aspiration to contribute to technological innovation both through our core business and through our strategic relationships with suppliers and business partners, communities, universities, research centres and institutions. The journey started in 2020 and continued in 2021 is increasingly oriented towards measuring the ESG (Environmental Social & Governance) impacts of our project.

Those who work in Open Fiber share the company's mission and values and contribute to creating an inclusive and diversity-friendly environment. People are the founding value of the organisation, an essential resource to ensure the effectiveness of the operating model and the ability to provide concrete answers and tangible results in relation to the challenges outlined in the Strategic Plan. They are an asset that we also protect by paying the utmost attention to occupational safety.

The contribution of Open Fiber's 1,300 people and the chain of partner companies has made it possible to open up 219 large and medium-sized



cities (black areas) and 3,230 small municipalities (white areas) to the marketing of services by the end of 2021.

The 2022-2031 Business Plan envisages a national coverage plan of 24 million real estate units, based on the achievement of industrial objectives in the black, white and grey areas of the country, focusing closely on customers through the expansion of services and the protection of land and territories. In this context, catching up on the delays accumulated in the concession areas (the white areas) is the priority of Open Fiber's new course, which began last December 3 with the new Governance in which Cassa Depositi e Prestiti holds 60% and the Macquarie Fund holds 40% of the share capital.

Our commitment continues with our participation in the Italian government's 'Italia 1 Giga' plan calls for tenders, through which our country aims to become a leader in Europe. We want to be a key player in this process, serving communities by building a widespread infrastructure throughout the country, enabling services such as digital public administration, teleworking, telemedicine, distance learning, HD streaming, home automation and smart cities for all citizens, from metropolitan cities to small towns.

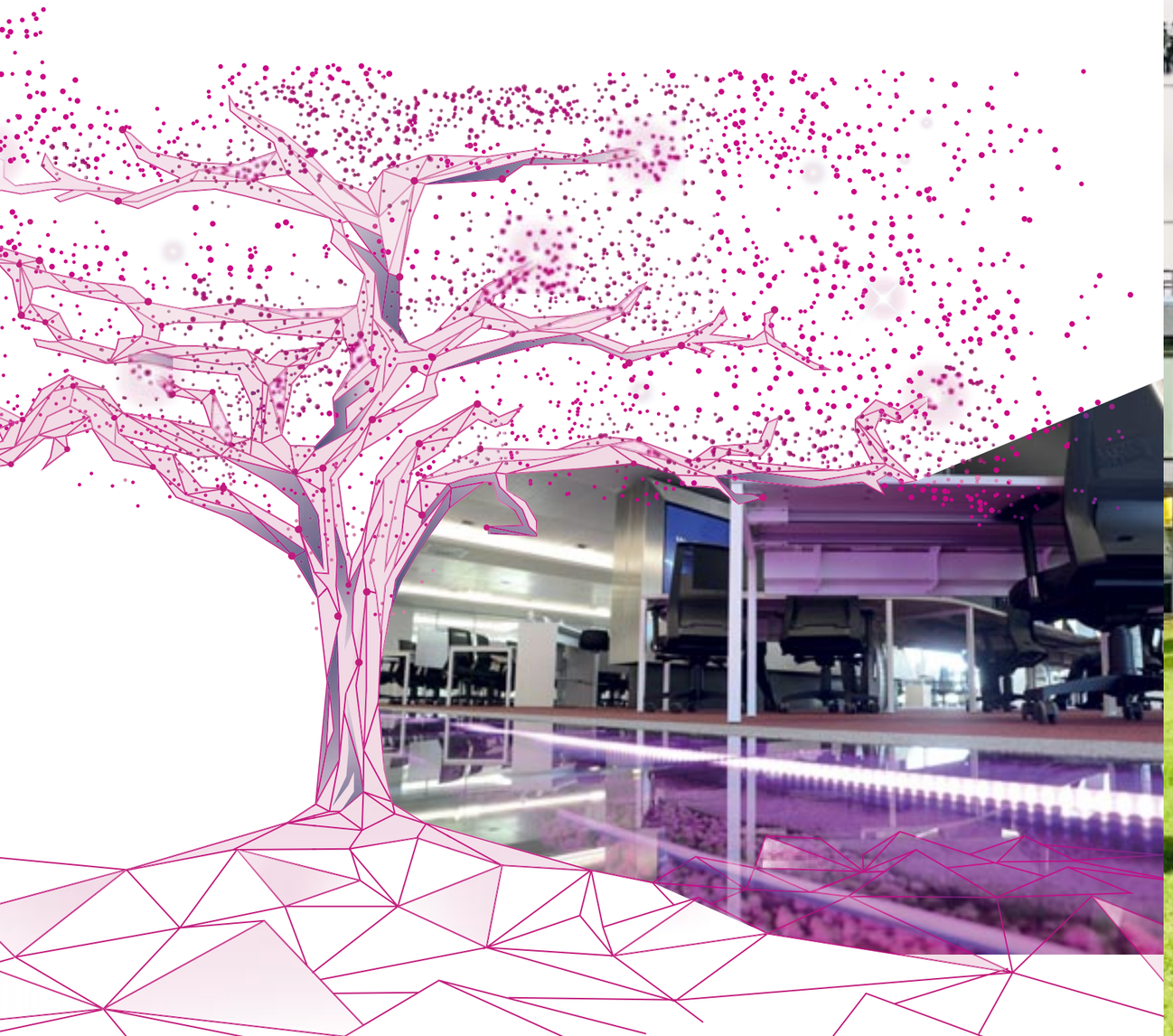
In order to achieve these objectives, it is necessary to focus on the needs of those who use the network, reasoning from a perspective that goes beyond that of a pure infrastructure operator, working as a single system with the partners and stakeholders with whom we interact on a daily basis. Our project offers us the unique opportunity to look every day into the eyes of a country which - amidst the difficulties linked to the pandemic and those generated by the international crisis with its humanitarian and economic consequences - is learning to build the change in which Open Fiber wants to play a leading role.

Barbara Marinali
Presidente

Mario Rossetti
Amministratore Delegato

01

Company's overview



1.1 PROFILE

1.1.1 Objectives and Business Model

Open Fiber is building an Ultra Broadband TLC all-fiber network, throughout the country, developing coverage not only in large urban contexts but also in small towns and rural areas.

As a wholesale-only operator, Open Fiber has brought the fiber-optic network to many Italian cities, with a transmission capacity of up to 10 Gigabits per second and is working on wiring many other urban and suburban areas, with the aim of allowing everyone to access services on the Fiber To The Home (FTTH) network, the fiber that reaches homes directly without copper lines.

The organisational machine manages various projects, with the aim of developing the most adavanced network 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 Economic Development (MISE) - for the construction of a fiber optic infrastructure in over 7,000 small municipalities in all Italian regions. In these areas, the network will remain publicly owned and will be managed under a 20-year concession agreement with Open Fiber.

There are four strengths in Open Fiber's business model:

- **protection of competition:** as a wholesale-only FTTH infrastructure provider, it offers access to the wholly fiber-optic network on fair and non-discriminatory terms to all interested operators;
- **high-quality and highly efficient infrastructure:** the network, entirely in optical fiber, 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 its innovative and inclusive relations favouring a global economic growth, Open Fiber establishes a policy of constant dialogue with institutions and local communities;
- **sustainability and environmental awareness:** oriented by nature to environmental sustainability, Open Fiber favours the development of a fiber optic network, reusing, where possible, existing structures. In designing its infrastructure, which combines sustainability and advanced technology, the integrity of placesis pursued, 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 complies with the objectives set by both the European Union's 2030 Digital Compass and the Italia a 1 Giga" plan. It is an ambitious project that aims to quickly tackle Italy's lack of infrastructure, guaranteeing affordable costs and short implementation 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

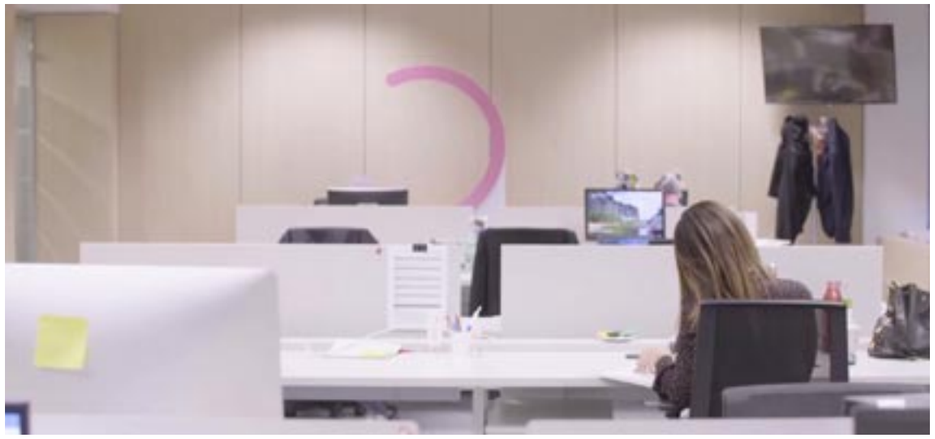
Open Fiber aims to create an infrastructure based on the best fiber optic technology for transmission, in order to contribute to the socio-economic change of the Country. An ambition that envisages overcoming the digital divide and improving the lifestyle of people, families, businesses and workers,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

1.1.2 Company's history

At a time when a global pandemic has made digitalisation even more indispensable as a key element for the normal flow of daily life, Open Fiber is working every day to build an **Ultra Broadband (UBB) fiber optic** network using **Fiber To The Home (FTTH)** technology, covering all regions of Italy and guaranteeing the highest levels of efficiency and reliability. A mission focused on innovation, progress and economic growth, pursuing the European objectives of the EU 2030 Digital Compass al 2030 and the 2026 "Italia a 1 Giga" Plan.

Established at the end of 2016 from the integration of Enel Open Fiber and Metroweb, with the aim of guaranteeing the coverage of Italy's major cities and the connection of industrial areas, Open Fiber has always worked with the intention of creating a capillary network capable of both providing increasingly advanced services and functions to citizens, businesses and Public Administration, and of promoting the



recovery of competitiveness of the national economic system.

Since its establishment, Open Fiber has chosen the **wholesale-only** business model, so as to guarantee free access on equal terms to interested operators, and clear benefits to users in terms of both diversity and quantity of services available.

Wiring Italy, from large cities to small municipalities, thus reducing the digital divide and ensuring free access to technologies, is an opportunity both in economic and employment terms for the country. To date, Open Fiber employs more than 8,000 people, including external and internal resources. In addition - together with a pool of leading national and international banks - it has set up the largest structured finance operation currently underway for the development of a fiber-optic network in the EMEA area, subscribing a loan of EUR 7.2 billion, extendable with a further EUR 2.8 billion. From private investments, with which it covers the wiring of the main urban centres, to public investments - thanks to the assignment of the three Infratel Italia (a Ministry of Economic Development company) tenders for the construction and twenty-year management of the network - with which it operates in rural and less populated areas - Open Fiber's overall plan is worth **over €15 billion, of which €4 billion have already been committed from 2017 to date**. This is an investment that aims to connect over 24 million property units in Italy, including cities (black areas), small and isolated municipalities (white areas) and industrial districts (grey areas).

In 2021, Open Fiber covered around **13.5 million of property units** confirming its position as the third largest FTTH operator in Europe and the first among wholesale-only operators. Its ultra-broadband network is used by about 300 national and international partner operators.

1.1.3 Open Fiber and the market context

The healthcare emergency, resulting from the global COVID-19 pandemic, has made it even more urgent for the country to have an adequate ultra-wideband telecommunications infrastructure, emphasising the importance of fixed connectivity, especially FTTH network architecture, a technology that has enabled citizens, families, companies and the public administration to operate safely and seamlessly in their working, training and leisure environments.

THE MAIN STEPS IN THE HISTORY OF OPEN FIBER

2015

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

2016

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).

2017

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**.

2018

In February, 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 Fiber To The Home network in Europe.
In November, Open Fiber is awarded, at the TMT M&A Awards event, the **2018 TMT Infrastructure Loan of the year – EMEA** award, for the most significant financing of infrastructure in the telecommunications sector (3.5 billion financing for the development of the fiber optic network in Italy).
In December, Open Fiber sets a new record: tests on the ZION network for a **400 Gbps** long-distance optical connection are successfully completed.

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 (Europe, Middle East and Africa) 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.

2020

In January, Open Fiber is certified as **2020 Top Employer** by the Top Employers Institute, a body focusing globally on excellence in HR management practices.
In August, the Company finalises the extension of the project financing, which now amounts to EUR 4,145 billion. This is the largest structured finance transaction currently underway for the development of a fiber-optic network in Europe.
In December, Open Fiber is officially **certified as Great Place to Work** by the international company bearing the same name.
The IDATE report published by FTTH Council puts Italy in third place (out of 28 countries) in the European FTTH/B coverage ranking. With 3.8 million property units wired in 2020 in FTTH/B, our country ranks second in terms of annual growth rate. Around **80%** of the contribution to growth in 2019-2020 is attributable to **Open Fiber**.
Having wired 10.5 million property units, Open Fiber is the **third FTTH operator in Europe and the first among the continent's wholesale-only operators**.
Open Fiber's fiber-optic backbone, ZION, reaches 800 Gigabits per second (Gbps) per optical channel: a new record.

2021

Open Fiber is once again awarded **2021 Top Employer** and **Great Place to Work** prices and publishes the **first Sustainability Report**.
In 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 EUR 11 billion in investments to cover around 24 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

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.

2021 was the fifth 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 the year, connectivity services on the Open Fiber network were available in **219** cities. In white areas, where the company operates as an Infratel licensee, 2021 was marked by a strong acceleration in coverage: ultrafast connectivity on the public network built by Open Fiber was available at the end of 2021 in over **3,200 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[1] 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[2], as well as the reports produced by IDATE on behalf of the FTTH Council, bear witness to this result. Moreover, the last five **DESI**[3] index reports certify the Italian advancement in VHCN (Very High Capacity Networks) coverage from 22% in 2017 to 59% in 2021.

As far as FTTH/B coverage is concerned, the FTTH Council reports that in Italy FTTH/B coverage has increased by 46% in the last year alone and, in rural areas, it identifies a 33% coverage of areas with a population density of less than 150 inhabitants per km2. Although it does not perfectly correspond to the white area classification established by the Italian Ministry of Economic Development (MISE), 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[4] no. 4/2021 - AGCOM reported that FTTH accesses have increased from 440 thousand in December 2016 to 2.44 million in September 2021. With more than 1.6 million lines activated on its network in June, Open Fiber's FTTH network accounted for around 68% of the total market.

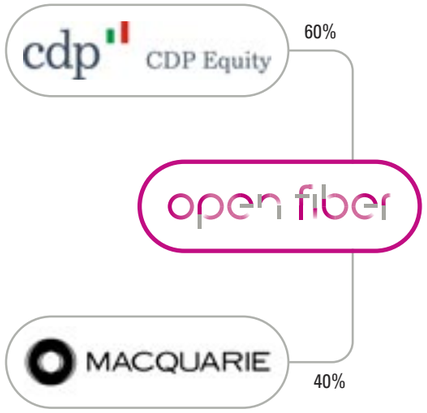
1.2 GOVERNANCE SYSTEM AND COMPANY ORGANISATION

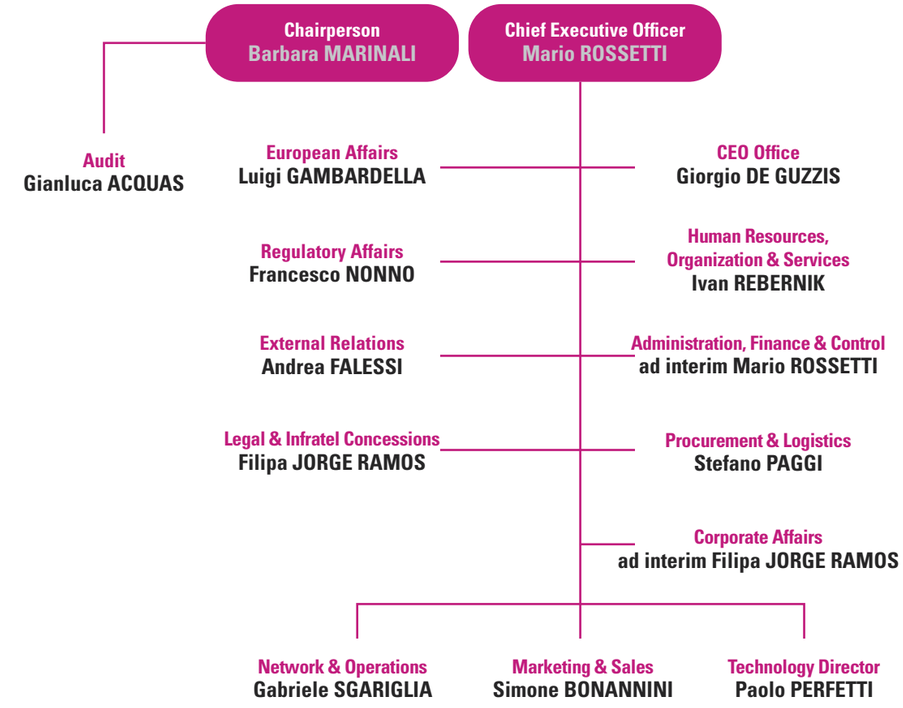
Open Fiber's governance system is structured according to the traditional model and includes an administration body (Board of Directors) and a control body (Board of Auditors).

Following the purchase of the shareholding held by Enel S.p.A. by **CDP Equity** and the **Macquarie Group**, finalised in December 2021, Open Fiber is now directly controlled by **Open Fiber Holdings S.p.A.**, **60% of which is held by CDP Equity**, a company belonging to the Cassa Depositi e Prestiti Group, and **40% of which is held by Fibre Networks Holdings** S.a.r.l., a company belonging to the Macquarie Group.[5]

With this new shareholding structure, **Barbara Marinali** was appointed President of the company and **Mario Rossetti** CEO and General Manager. Subsequently, with an organisational arrangement dated 9 December 2021, the new company organisation was determined.[6]

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





[1] Gigabit-capable Passive Optical Network.
[2] Communications Regulatory Authority.
[3] Digital Economy and Society Index.
[4] Quarterly publication prepared by the Authority's Research and Statistics Department.
[5] The company's shareholding structure consisted - as of December 2016 until the purchase of the shareholding in December 2021 - of an equal stake held by Enel S.p.A. and CDP Equity S.p.A.
[6] By Organisational Notice of 03/02/2022, the Corporate Affairs Department was assigned to Stefano Cusmai.

Steering Committee for risk management:

This Project Committee has been set up to ensure governance, supervision and monitoring of the risk management process. It is made up of the CEO and General Manager, who acts as Chairman, together with the heads of the Administration, Finance and Control, Legal and Infratel Concessions, Personnel, Organisation and Services and Audit Departments. On the basis of the risk appetite, the Steering Committee defines the company's tolerance level (so-called "Risk Tolerance"), i.e. the threshold above which risks must be considered serious and critical. It also assesses the company's objectives in order to validate their adequacy and consistency with what the Board of Directors has defined in terms of company strategy. Finally, it supports the process of monitoring the action plans, periodically checking the implementation of the actions defined in the Action Plan.

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[7]. 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 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.

[7] 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.

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 usually 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:

- the 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.

Within its own corporate organisation, the Personnel, Organisation and Services Department has been given responsibility for promoting corporate initiatives on sustainability and CSV (Creating Shared Value). Within this organisational framework, the Personnel, Organisation and Services Department, in collaboration with the External Relations Department, implements every year the process of defining the contents and collecting data and information aimed at drawing up the Open Fiber's **annual Sustainability Report**, supporting the company's Top Management in the presentation of the document and subsequent approval by the Board of Directors.

1.3 ECONOMIC AND FINANCIAL RESULTS AND NETWORK PROGRESS

1.3.1 Scenario

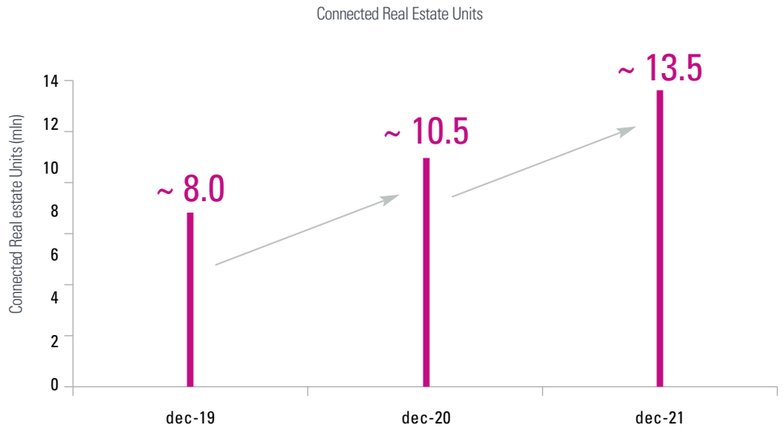
Open Fiber is working to bring innovation to the whole country and drive the long-term growth of businesses, organisations and the Public Administration. The multi-year plan provides for the coverage of around **24 million real estate units**, through the development and laying of an optical fiber infrastructure for a nationwide coverage of about 150,000 km.
The healthcare emergency linked to COVID-19 led the Government, the Regions and the Public Administration in general to take numerous measures restricting production activities and freedom of movement.

In spite of the objective obstacles to the performance of its activities, which characterised the two-year period 2020-2021, 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, also in the management of the healthcare emergency.

1.3.2 Business development and network progress

About 3 million real estate units were connected in 2021, reaching a total coverage of about **13.5 million real estate units**[8], an **increase by 29%** compared to the previous year.

Once the work has been completed, Infratel Italia (C&D Cluster) 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.



[8] With reference to the 2021 results, 2.3 million real estate units were connected using FWA technology.

MUNICIPALITIES BEING MARKETED

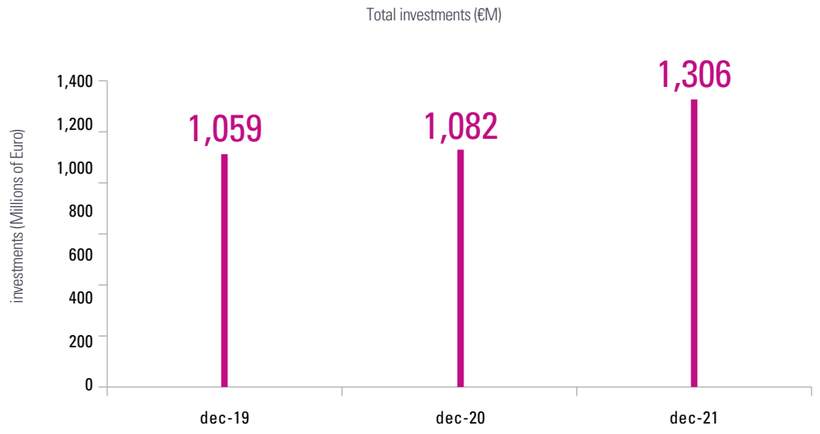
Description	UOM	2019	2020	2021
Municipalities in the A&B Cluster	n.	139	183	219
Municipalities in the C&D Cluster	n.	168	1,774	3,230
Total marketed municipalities	**n.**	**307**	**1,957**	**3,449**

The total number of **municipalities being marketed as of 31/12/2021 is 3,449**, of which 3,230 are in the C&D Cluster (under Infratel Italia S.p.A. concession).

With reference to network development performance in the market failure areas covered by the first and second tenders, Open Fiber was only able to start activities in January 2018, after 13 appeals against the award of Infratel concessions that significantly delayed the signing and the complex definition of the operating manual for the tenders awarding the works. Activities for the Regions covered by the third tender were started in the second half of 2019 following the signing of the Concession in April 2019.

1.3.3 Investments

The Company's overall investments[9], in 2021, amounted to **EUR 1,306 million**. Investments mainly concern the creation of the network and network infrastructures, the acquisition of rights to use third-party infrastructures, the development of software and 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.



[9] 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.

PROJECT FINANCING EXTENSION TO SUPPORT THE NEW BUSINESS PLAN

On 3 December, Open Fiber's Board of Directors approved the **new business plan** for the company, 60% owned by CDP Equity and 40% by Macquarie Asset Management.

The new plan, which covers the **period 2022-2031**, is characterised by the extension of VHCN (Very High Capacity Network) coverage to the so-called **grey areas** - the areas in which there is only one network operator and where no other operator plans to develop an NGA (Next Generation Access) network - starting with those that will be affected in the coming months by the calls for tenders launched by the Ministry for Technology and Digital Transition (MITD) as part of the Italia 1 Giga Plan.

In its new business plan, Open Fiber confirms its coverage objectives in **black and white areas** (over 7,000 municipalities in the C&D clusters, where it operates as a public licensee), with a focus - in terms of additional financial and organisational means - on the completion by 2023 of all interventions in municipalities in white areas and, in particular, those on which ERDF and EAFRD European funds are focused.

The main feature of the new plan is its flexibility. The extent of the financial resources available on the basis of the agreement with the banks makes it possible to accelerate and achieve all the objectives of the previous plan, therefore to participate in the tenders envisaged under the PNRR for the grey areas.

The 2022-2031 plan provides for approximately **EUR 11 billion in investments to cover around 24 million real estate units** (REUs) from the current more than 13 million REUs and to support the growth of the customer base, in line with the plan's target of 50% take-up. These investments will be covered by the **extension of the financing to EUR 7.2 billion**, by equity and by cash generation.

At the end of tenders issued by the MITD on grey areas, expected in June 2022, Open Fiber will detail the plan for covering the additional portion of grey areas in which it will operate on a competitive basis and, therefore, the corresponding incremental number of real estate units. To this end, OF will be able to draw on an additional EUR 2.8 billion credit line.

The Company has reached a financing agreement with leading Italian and international financial institutions: Banco BPM, Banco Santander, BNP Paribas, Crédit Agricole, ING Bank, Intesa, Société Générale, Unicredit, who will act as Global Coordinators Bookrunners, Mandate Lead Arrangers. The purpose of the transaction is to support further investments under the Industrial Plan and to refinance the previous Project Financing of EUR 4.1 billion, improving the conditions applied and extending its duration to 2028. The financing is the largest ever in the EMEA region in terms of investments in telecommunications networks.

1.3.4 Economic Value Generated 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 2021, the **economic value directly generated** amounted to EUR 379.5 million, broken down as follows[10]:

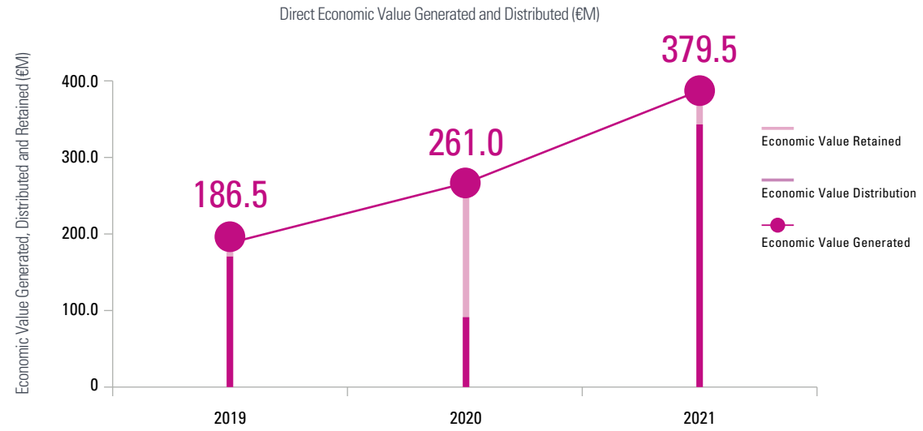
- operating costs, i.e., the value distributed to **suppliers**, amounting to approximately EUR 124 million (+17% compared to 2020), including costs for services, costs for leases and rentals and operating expenses;
- value distributed to **employees** - remuneration and benefits - amounting to more than EUR 80 million (+20% compared to 2020);
- value distributed to **capital providers**, which includes financial charges, amounting to approximately EUR 130,7 million (+38%% compared to 2020);
- value distributed to the **Public Administration**, amounting to approximately €16,3 million (for years prior to the reporting period 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 EUR 324,000 (-50% compared to 2020), 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.

201-1 DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED

Description	UOM	2019	2020	2021
ECONOMIC VALUE GENERATED	**€/000**	**186,455**	**261,001**	**379,546**
Value of production (Total Revenues)	€/000	186,078	261,001	379,546
Other types of financial income (financial income)	€/000	377	0	0
ECONOMIC VALUE DISTRIBUTED	**€/000**	**171,882**	**90,020**	**351,838**
Operating costs	€/000	85,506	105,749	124,035
Value distributed to employees	€/000	60,219	66,880	80,375
Value distributed to capital providers	€/000	65,560	94,743	130,668
Value distributed to the Public Administration	€/000	(39,687)	(177,997)	16,436
Value distributed to shareholders	€/000	-	-	-
Value distributed to the community	€/000	283	646	324
ECONOMIC VALUE RETAINED	**€/000**	**14,573**	**170,981**	**27,708**

[10] With reference to the reporting period 2021, a change has been carried out in the reclassification of the economic value distributed to suppliers (i.e. operating costs), to the Public Administration and to the Community for the economic items related to Other operating costs. This change also affects the comparison of 2021 with the previous reporting period.



1.4 SUSTAINABILITY STRATEGY: CHALLENGES, RESULTS AND OBJECTIVES

Protection of competition, high quality and efficient infrastructure, development of innovation, creation of shared value, sustainability and attention to the environment are Open Fiber's strengths, elements that have proven to be even more crucial in the face of the consequences and changes imposed by the pandemic. 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.

Open Fiber strongly believes in the potential of optical fiber as a tool for levelling out 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) set out in the United Nations (UN) 2030 Agenda for Sustainable Development in 2015.

In particular, the Development Plan of its FTTH ultra-wideband optical fiber network infrastructure, aims to:

- develop innovative and eco-friendly technological solutions;
- promote and implement energy efficiency and renewable energy supply measures to fight climate change;
- seek enabling solutions for new community services;
- invest in human capital and the growth of people as the driving force behind the sustainability strategy;
- promote projects and initiatives aimed at ensuring equal opportunities, inclusion and equal access conditions for the whole community.

DISTINCTIVE FACTORS FOR THE SUSTAINABILITY OF OPEN FIBER	ENVIRONMENTAL CHALLENGES AND THE SOCIAL NEEDS THEY ADDRESS	RESULTS	OBJECTIVES
INNOVATION AND TECHNOLOGY FOR THE ENVIRONMENT By taking measures to minimise the overall impact on the environment and the territory in the business value chain, Open Fiber seeks innovative solutions and technologies that guarantee a high-performance and environmentally sustainable network infrastructure, such as: solutions for digital transformation; use of products with an extended life cycle; use of more sustainable materials, easily recyclable, with minimum levels of toxicity and low emissions of harmful gases; construction techniques with reduced environmental impact.	**CONSUMPTION OF NATURAL RESOURCES** Reducing 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.	**The sustainability of optical fiber:** producing the equivalent length of optical fiber cabling produces less than 0.01% of the CO_2 emissions associated with copper.	The use of pipes for the protection of optical fiber cables produced with innovative materials, completely recyclable and with a low environmental impact, thanks to the structure of the conduit based on polyethylene, at least 70% of which is derived from recovered or recycled materials.
	SOIL AND SUBSOIL, LANDSCAPE AND CULTURAL PROTECTION Promoting the use of existing infrastructure and implementing minimally invasive excavation techniques with a low environmental impact.	**Re-use of existing infrastructure:** 50% of optical fiber cable laying activities involved the re-use of existing infrastructure in the A&B Cluster and 80% in the C&D Cluster. **Digging techniques with low environmental impact:** • mini-trench and micro-trench constitute 40% of the work for the A&B Cluster and 45% for the C&D Cluster; • "no dig" is used by 20% for the A&B Cluster and 15% for the C&D Cluster. **Commitment to the protection of the historical and artistic heritage:** • Gela: support for the creation of an open-air museum showcasing the discovery of various archaeological artefacts during excavations for the laying of the optical fiber network; • Olgiate Molgora: the discovery of the remains of a number of bodies, dating back more than 3,000 years, which Open Fiber sent to the Superintendency for further analysis;. • Piacenza: discoveries of urban archaeology during excavation activities; • Pioraco, Sepino, Palmanova and Abbadia Lariana: project for the creation of digitisation paths for local museum networks.	**Maximising** the percentage of use of low environmental impact excavation techniques. Maintaining its commitment to **protecting the historical and artistic heritage** through initiatives aimed at enhancing it.

DISTINCTIVE FACTORS FOR THE SUSTAINABILITY OF OPEN FIBER	ENVIRONMENTAL CHALLENGES AND THE SOCIAL NEEDS THEY ADDRESS	RESULTS	OBJECTIVES
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 **CLIMATE CHANGE** Reducing its carbon footprint related to the creation and functioning of the optical fiber network and other types of energy consumption related to its activities.	**Energy Management System:** Open Fiber has adopted an Energy Management System, inspired by the UNI CEI EN ISO 50001 standard, aimed at a structured management of significant consumption generated by office buildings, technological sites and the company car fleet, under the guidance of the company Energy Manager. The actions planned and started in 2021 as part of the energy plan are outlined below: • replacement of traditional technology light fittings with LED technology for the Rome office; • application of solar control films on the glass surfaces of the Milan office, which will lead to a reduction in energy needs; • installation of a photovoltaic renewable energy production system for the Settimo Milanese technological site.	Continued commitment to energy efficiency and fighting climate change with further initiatives in the Energy Management System and Carbon Footprint Reduction Plan Actions planned for 2022 as part of the energy plan are described below: • installation of a Power Quality system capable of minimising the difference in voltage supplied to and absorbed by the users; • installation of a photovoltaic power plant at the Rome office; • replacement of traditional technology light fittings with LED technology and the installation of a photovoltaic power generation system for the Milan office.

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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 by virtue of a transmission capacity of up to 40 Gbps ("future-proof"), the only one capable of supporting the evolution of the service offering.	 **SMART GRID** Developing the grid, by providing new functions to those accessing the grid and those involved in managing the electricity system, and accelerating technological and industrial evolution in the energy transition process.	**DSO 4.0 Project:** implementation of a communication system of maximum reliability and resilience for E-Distribuzione's network, allowing for the implementation of new functions that can significantly improve network performance. The plan is based on the connection of secondary and primary cabins to an optical fiber network, in order to achieve a series of objectives and benefits that are fundamental for the development of the distribution network in the future. **Smart grid** pilot project in the Sicily Region to connect all the cabins in the C&D Cluster. Connected 3,300 secondary and primary cabins, all concentrated in 18 municipalities of the A&B Cluster.	**DSO 4.0:** the goal is to connect more than 56,000 secondary and primary cabins. **Smart grid:** making Sicily a region of excellence in the field of smart grids in Italy (the model will then be extended to other regions), through the connection of about 200 municipalities in the Sicily region of the C&D Cluster (equal to 50% of the total municipalities in Sicily), with about 1,490 secondary and primary cabins.

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INDUSTRY 4.0 Designing programmes and partnerships to encourage the spread of ultra-wideband in companies and promoting the connection between physical and digital systems, enabling complex analysis through Big Data and real-time adaptation.		Supporting the **country's industrial system** by promoting and strengthening the resilience of SMEs: thanks to a high-performance infrastructure, they can launch and develop innovative services and speed up their digitalisation processes. **Partnerships with businesses:** guaranteeing a reliable and ultra-fast connection to millions of consumer and business customers. Open Fiber has entered into partnerships with numerous operators.	Providing new innovative service models and supporting the fiber penetration in competitive sectors such as Finance/Fintech and **Industry 4.0**.
SMART CITIES Making cities digital by harnessing the efficiency of ultra-wideband.		**New partnerships established with Municipalities:** • **Bari** towards the first Smart City in the South: 175,000 homes reached and an advanced monitoring system for the local police; • **Alessandria** and public safety: video analytics pilot project to detect misbehaviour and rule violations; • **Gemona** as a digital city: 2 million euros allocated for a widespread network throughout the territory.	Continuing to invest in fiber networks while extending the 5G network in order to **improve services for citizens.**
FIBER SENSING Creating a sensor system, using optical fiber as a transducer and means of information transport (e.g., for earthquake detection).		**"MEGLIO" Project:** The experimental Project (at the technological sites of Ascoli Piceno and Teramo) for the detection of earthquakes on the national territory using optical fiber was concluded and earthquakes with magnitude from 2.6 to 4.1, both in the national area and in the Mediterranean and global area, were validated. **Fiber as a Sensing (FaaS):** a study was launched to use the telemetry parameters already available in the telecommunications nodes for network management.	Providing reliable embedded optical systems for **geotechnical and environmental monitoring** and **surveillance of man-made structures** in different urban and regional areas. Improving and maximising the use of Open Fiber's existing infrastructure to develop fiber sensing.

DISTINCTIVE FACTORS FOR THE SUSTAINABILITY OF OPEN FIBER	ENVIRONMENTAL CHALLENGES AND THE SOCIAL NEEDS THEY ADDRESS	RESULTS	OBJECTIVES
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DISTANCE LEARNING AND DIGITISATION OF EDUCATIONAL ESTABLISHMENTS Safeguarding the right to study by bridging the gap due to existing infrastructural differences.		**Connected schools:** over 14,100 schools have been reached: they can now connect to the FTTH fiber-optic network and enjoy an ultra-fast connection. About 8,700 connected establishments are part of the "Piano Scuole", a tender launched by the Ministry of Economic Development to provide ultra-broadband internet connectivity services to schools throughout Italy. **Co-designing training courses:** collaborations with 6 different specialisation courses; funding of a scholarship for the 1st National Industrial Doctorate in Artificial Intelligence. **"Dual-training alliance":** training project for the development of technical skills. It involves five cities and five schools, 125 students, 10 master craftsmen from different professional backgrounds, and 20 hours of meetings, also held remotely. **Open Learning platform:** free, specialised online training support.	«**Piano Scuole» target:** guaranteeing, by 2023, the provision of **connectivity** with a download speed of **up to 1 Gbps** and a minimum guaranteed symmetrical bandwidth of 100 Mbps for **around 35 thousand public schools from 'white areas'**. **Open Fiber targets:** continuing the wiring process of educational establishments to ensure distance learning. Continuing the commitment to developing technical and digital competences while strengthening those newly acquired.

DISTINCTIVE FACTORS FOR THE SUSTAINABILITY OF OPEN FIBER	ENVIRONMENTAL CHALLENGES AND THE SOCIAL NEEDS THEY ADDRESS	RESULTS	OBJECTIVES
INVESTING IN PEOPLE'S GROWTH AS THE DRIVER OF THE SUSTAINABILITY STRATEGY Open Fiber offers its employees training and development programmes, a welfare system that responds to their needs and guarantees 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.	 **AN INCLUSIVE, SAFE AND WELL-BEING-ORIENTED WORKING ENVIRONMENT** Promoting diversity, the work-life balance, well-being and health & safety of all employees to nurture the next generation of leaders. Enhancing the talent of human capital and individual skills. Ensuring equal opportunities in all human resources processes	Providing **training courses:** 48,548 hours of training provided, of which 5,570 in Health, Safety and Environment (HSE). An **On-Boarding Programme** for newly-hired Field Managers and Regional Operational Support (5 editions were carried out in 2021 with 84 participants). **"Open Fiber Digital Mindset Switch":** a cross-functional training course involving people with different roles and backgrounds in order to activate a mindset evolution based on a People Digital Strategy. The course aims at enhancing the digital talents and innovation skills of the participants. **Green&Black Belt Lean Six Sigma:** 8,212 training hours delivered; 52 people involved in obtaining certification. **BestOf:** a project that led to drawing up the Fiber Working Maps, i.e., guidelines that enhance the ideal behaviours and skills of corporate fiber leaders and fiber workers. **Coaching and Team Empowerment pathways:** 780 participants were involved in the Team Empowerment path in 2021; 30 employees took part in the Individual Coaching path. **Employee Assistance Programme:** free and anonymous psychological, legal and fiscal support for all employees and their families, 24/7. **Promoting and supporting teleworking:** signing a teleworking agreement offering the possibility of alternating office and remote work for a total of 10 days per month. Distributing a vade mecum with useful advice and good practices for carrying out work remotely; DTTH 2.0 **'Delivered-To-The-Home Equipment':** home delivery of equipment to enhance agile working tools, such as PC monitors, ergonomic chairs, ergonomic PC supports, headphones, keyboards and mouses; **'Safety Kit'**: home delivery of a care kit (masks, gloves and sanitising gel). **Gender Equality & Safeguarding Women:** the Quotas for women initiative for technical professions; the Role model initiative for tutorship and mentoring projects; participating in the *'Ingegno al Femminile'* (Female Ingenuity) thesis award. **Maternity & All Kinds of Family Care:** integrating different types of leaves; organising family events; health insurance extended to all types of families.	Promoting **employees' professional development and their competences** through the continuous provision of dedicated training and development pathways. Facilitating **inclusion** and enhancing female talent with the aim of reducing the gender gap nationally. Continuing to participate in and develop initiatives aimed at ensuring **employee well-being and work-life balance.** Ensuring constant efforts to safeguard the **mental and physical health** of its employees and their families. Continuing its commitment to promoting and supporting **"Fiber Working".** Continuing its commitment to the promotion of **diversity** and **inclusion**.

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The Company has become aware of its role on these issues and has begun a strategic analysis process to identify the aspects of its business that have the greatest impact on the socio-economic and environmental system on the basis of which the Company objectives will be selected. In 2021 the areas of impact identified[11] as a result of this analysis reflect the challenges that Open Fiber has chosen to focus on to generate value on the territory, the environment, Italian businesses and people's lives.

Against this backdrop, the Company will continue its development journey, breaking down and deepening its priority impacts dynamically as to complete and strengthen its strategy and to further integrate sustainability within its core business.

TERRITORY

- Connecting and digitizing the country to counter the Digital Divide
- Enabling innovative services for the territory (fiber sensing, smart cities, etc.)
- Promoting the repopulation and greater attractiveness of small municipalities

ENVIRONMENT

- Reducing enviromental impact though the adoption of innovative excavation techniques
- Reducing energy consumption, including per user thanks to the adoption of fiber
- Contribute to the fight against climate change

PEOPLE

- Promoting equal conditions of access to resources and information for all citizens
- Contributing to overcoming the cultural digital divide
- Promoting the digitization of schools and services

COMPANIES

- Favoring the strenghtening of the entire system of local SMEs though their involvement along the Open Fiber value chain
- Contributing to the growth of employment induced by the project

[11] For more details, see chapter 3: "Contribution to the country system".

Commitments

The Sustainability Policy adopted by Open Fiber translates its Mission into seven commitments that embrace the company's values, the ethical and social principles declared in the Code of Ethics, the fundamental principles of the Global Compact and the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda[12].

1. Connecting the country to bridge the digital divide
In order to guarantee coverage, not only in large cities, but also in small towns and rural areas, Open Fiber is connecting the country by working on wiring numerous urban and suburban areas without compromising the territory and its resources to allow everyone access to services via a fiber that reaches homes directly, without copper lines (FTTH - Fiber To The Home).

2. Valuing our human capital and supporting fair and inclusive working practices
Resource development, well-being, work-life balance, diversity and inclusion: these are all fundamentals that Open Fiber includes in its working environment, as it recognises and believes in the value of its employees and is committed to creating a space in which everyone can express and develop their skills.

3. Protecting the environment and the territory where we operate
Open Fiber invests in environmentally friendly technologies with the aim of creating and deploying an infrastructure that is, by its very nature, high-performing and environmentally sustainable.

4. Promoting health and safety
Open Fiber works to ensure high standards for the protection of Occupational Health and Safety, promoting responsible behaviour among all of those who, in any capacity, collaborate in the pursuit of corporate objectives.

5. Offering secure and reliable infrastructure while respecting free competition
Open Fiber guarantees to its partners and customers long-lasting secure and reliable infrastructure, offering access to the fiber optic network on fair and non-discriminatory conditions.

6. Believing in ethics and integrity
With the aim of preventing corruption in all its forms, Open Fiber develops incisive, concrete and transparent practices in line with its Code of Ethics and its Organisation and Management Model pursuant to the Italian Legislative Decree 231/0.

7. Respecting human rights
Open Fiber adopts socially responsible conduct, condemns any violation of human rights and supports best practices throughout the value chain, as it is aware that this helps to improve its performance.

[12] The 2030 Agenda for Sustainable Development is an action programme for the people, planet and prosperity signed in September 2015 by the governments of the 193 UN member states. It comprises 17 Sustainable Development Goals (SDGs).

02

Our business

2.1 THE ITALIAN AND EUROPEAN DIGITAL SCENARIO

Reducing the infrastructure gap that exists in some areas of the country compared to others. Bridging social and geographical inequalities in favour of greater human and territorial cohesion. Position Italy among the most technologically advanced countries in Europe. These are the objectives pursued by the Open Fiber strategy; intentions in line with the digital transformation objectives indicated by the European Union and promoted by the Italian government.

The strategy put in place by the Company, among other things, fits perfectly into the framework of the Communication on the Digital Decade presented by the European Commission, also known as "**Digital Compass"**. The strategy put in place by the Company, among other things, fits perfectly into the framework of the Communication on the Digital Decade presented by the European Commission, also known as the "Digital Compass". The document sets out the vision, objectives and methods that will lead Europe to digital transformation by 2030, an ambitious plan that paves the way for the implementation of programmes relevant to a multi-country vision, like **NextGenerationEU**.

NextGenerationEU is a €800bn-plus instrument designed to promote economic recovery and mitigate the immediate economic and social damage caused by the Coronavirus pandemic, with a particular focus on the environment. The European Council and the Commission have committed to structure the support to recovery according to the dual transition towards a resilient but also climate neutral digital transformation.

In the light of this programme, Italy presented the **National Recovery and Resilience Plan (*Piano Nazionale di Ripresa e Resilienza,* PNRR)**, aimed at modernising the public administration, strengthening the productive system and intensifying efforts to fight poverty, social exclusion and inequalities. It is the European Union's largest document, with a total value of approximately **EUR 191.5 billion**, to be spent over the period 2021-2026, of which EUR 68.9 billion are non-repayable grants.

21% of PNRR funds (around EUR 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 plan also tackles the development of digital literacy (according to the 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 pandemic highlighted the importance of developing e-skills to support the economy and society, especially in the areas of work and education that could not function normally.

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 twentieth place in 2021, up from the previous year (when it ranked twenty-fifth). The report points out that this advancement is due to the progress made by Italy in terms of coverage and spread of connection services up to at least 1 Gbps. Italians still lag behind the European average in terms of digital skills (both specialist and basic) and in terms of their use of advanced technologies (such as cloud technologies), for which the country ranks 25th. This is probably also due to the country's poor digital culture which, although it has increased (from 30% to 36%) 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 64%). On the other hand, a lack of knowledge of digital technologies also characterises those working in the public sector. Before the outbreak of the pandemic, 98.9% of public administration employees in Italy had never used agile working. Even during the pandemic, compared to a potential of this working mode in public services of about 53%, the actual use amounted to 30%, with lower levels of about 10 percentage points in the South.

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 (UWB) that the Company is installing throughout Italy.

2.1.1 The digital market at the time of COVID-19

The digital strategy promoted by the European Union and the Italian government, and shared by Open Fiber, has become important again with the COVID-19 pandemic. Digital tools, networks, and connectivity have proved to be fundamental to allow people to continue working, to monitor the spread of the Coronavirus, to carry out research and development of diagnostic tools, treatments, vaccines, and to keep people in contact even if they are far away from each other. It is no coincidence that, as a result of the social distancing measures imposed to fight the pandemic, the demand for digital infrastructures and services - for smart working, distance learning or leisure - has increased dramatically.

In order to avoid network congestion and allow everyone to use digital services, EU Member States have put in place specific measures where ultra-connectivity has played and will play a major role also in the economic recovery. To this end, the European Council and the Commission have committed to structure recovery support according to the dual transition towards a resilient and climate-neutral digital transformation. In this context, the implementation of 5G and Very High Capacity Networks (VHCN), e-skills, the digitalisation of businesses and public administrations are crucial for a robust recovery.

Italy has also launched several digital initiatives to address the COVID-19 crisis, aimed at responding to the increased consumption of electronic communication services and network traffic. In particular, the government has turned its attention to hospitals, providing free Wi-Fi connections, and to schools, promoting the spread of digital tools and platforms, the provision of devices to less fortunate students and access to ultra-fast connections and related services. Among other initiatives, simplified procedures were also introduced in order to facilitate the purchase of IT goods and services by public administrations.

2.2 BUSINESS MODEL

2.2.1 Open Fiber "wholesale" model

By choosing the so-called **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 approach 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, can be found in the main elements that characterise and distinguish it:

- **neutrality** and **openness**, which contribute to the development of an inclusive and competitive market in which operators selling FTTH services to the end customer have an equal right of access to the network;
- **long-term vision**, deriving from the fact that the infrastructure operator can focus solely on the infrastructure;
- **innovation**, because the absence of a legacy network makes it possible to use the best technology available on the market and maximise the operational performance of the network.

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, and 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 13,5 milion of real estate units in December 2021. Open Fiber's business plan has been further extended and enhanced, and now envisages connecting more than 24 million real estate units divided into the so-called black, white and grey area clusters.

In 2021, Open Fiber's market has further widened and now around 300 operators are Open Fiber customers, operating in the consumer and business segments, with around 2 billion active lines on the national territory. 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.

Innovative approaches in the Wholesale model

Open Fiber, during 2021, launched 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 their client 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 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.

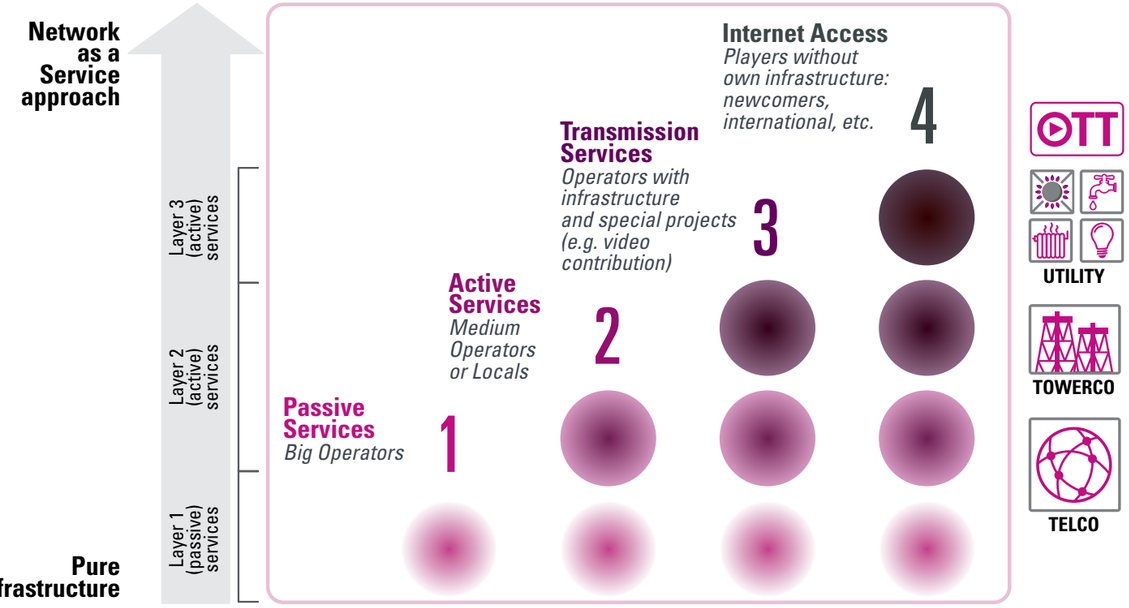
2.2.2 Open Fiber Services

The Open Fiber product portfolio consists of connectivity services that favour the digitization of families, businesses, schools, and the Public Administration. The offer is characterized in terms of quality, reliability but also product flexibility: the portfolio is simple and modular and allows access to the network by varying the offer from "pure infrastructure" to "Network as a Service". This approach allows access to the network not only for large operators, but also for all players and newcomers without their own infrastructure and equipment.

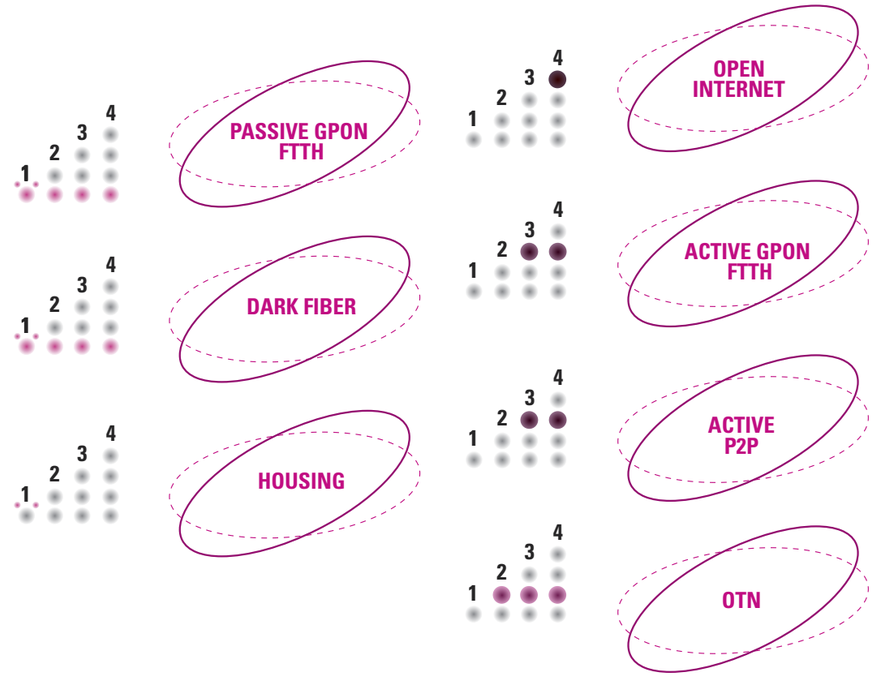
The services offered by Open Fiber are divided into two categories: passive services and active services. **Passive services** allow operators with their own equipment to access the FTTH infrastructure that connects the technological site (i.e., the node of the infrastructure that hosts the elements of the fixed access network and those of transport/backhauling) to the premises of the End customers. This option is generally used by large operators who manage the active part "at home" by installing their equipment within Open Fiber sites. This type of service also includes Housing, a service in which operators are granted a space on which to install their

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)[13] and P2P (Point-to-Point) access technology with traffic collection 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 to the Internet. This type of service is aimed above all at small operators, 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 also 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).



[13] 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.



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 on which the transmission equipment of the Operator is installed within the Open Fiber technology site. 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 GPON FTTH access technology, with speeds up to 1 Gbps in download and 300 Mbps in upload.

Active GPON FTTH – Open Stream: point-to-multipoint FTTH connectivity service in GPON access technology 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. The purpose concerns 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: namely, 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.

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 2021, around 300 operators in telecommunications (Fastweb, Tiscali, Vodafone, WindTre, EOLO and Vetrya), 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 digitalization process with the aim of reducing the speed divide that characterizes an increasingly smaller number of areas.

Attention to customers: Customer Satisfaction Survey Model

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 its customers** (Operators) to then measure and examine the data collected both at the customer cluster level and at the individual customer level. The model 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 standardized 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 standardized 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.

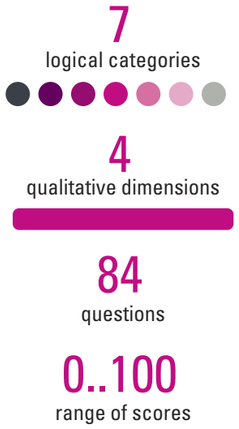
The survey administered focused on four areas of investigation:

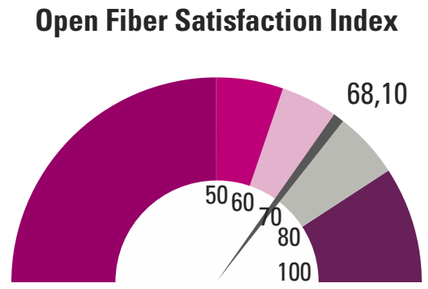
- **services and offer:** the clarity of contractual documents, satisfaction with the portfolio of services offered and the value of connectivity in terms of customer loyalty;
- **commercial:** support and clarity in the commercial contract phase, ease of use of the ARO portal and the saleability database;
- **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.

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

195 representatives of 128 customers responded to the first **Customer Satisfaction Survey** carried out in 2021. Compared to the sample identified, 78% of the operators to whom the survey was administered completed the questionnaire (of these, 85% belonging to the consumer segment, 6% to the business segment and 9% to the consumer & business segment).

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.





From the analysis of the answers, it emerges that, both for the **survey areas** and for the **qualitative aspects,** the scores obtained were on average high. Through the analysis of the so-called **Open Fiber Satisfaction Index** which represents a summary of all the answers given by all the operators, 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** and **sustainability** are among those highlighted as positive factors.

2.2.3 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 our 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.

2.3 OPEN FIBER INFRASTRUCTURE

Open Fiber's infrastructure consists of an ultra-wideband network (UWB) based on the 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.

Another advantage of optical fiber is that it is **'future-proof'**, i.e., it is designed not to become obsolete as technology advances, ensuring efficient performance even as bandwidth demand increases. Thanks to all these requirements, 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.

2.3.1 The intervention model

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[14]. 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[15] 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. **creation phase:** creation of the FTTH connection system, through which the Points of Presence (PoP) are built and connected to the real estate units via the optical fiber. The PoPs can be built in-door (inside existing buildings), out-door (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 only on the environment, but also on the community in terms of inconveniences caused by the presence of the worksite[16]. 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 will be 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 with whom 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;

Optic Fiber : an environmentally sustainable solution

One of the most interesting features of optical fiber, especially at a time when so much is being said about sustainability, is its low environmental impact. 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.

[14] For more details see paragraph "3.3.2 Relations with local authorities and bodies in permitting activities".

[15] 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.

[16] For more details see paragraph "3.4 Value for the environment".

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 Center)[17].

2.3.2 Open Fiber network peculiarities

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** activities)[18] and ends with the management of **Delivery** services (connection between real estate unity and optical fiber network or FWA[19]) 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[20], 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 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

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.

[17] For further details please see paragraph "2.3.2 Open Fiber network reliability".
[18] For details regarding the Network Creation activities, see paragraph "2.3.1 Intervention model".
[19] Fixed Wireless Access.
[20] For details on the qualification activities, see paragraph "2.7 Shared responsibility throughout the supply chain" and the company website, in the dedicated section https://openfiber.it/fornitori/diventa-fornitore/

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 Subsuppliers;
- 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.

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 Center (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 5 sectors:

- **Delivery**, which is responsible for activating the end customer on the Ultra Broadband network according to the requests of the partner operators. Since Open Fiber follows a wholesale only business model, it is the telecommunication operators who are in charge of managing and acting as intermediaries for the activation of the Customers' subscriptions;
- **Assurance**, which provides technical assistance, again through telecommunications operators, in the event of service failures;
- **Network Monitoring**, 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.

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.

- **Specialised Support** and the **Steering Committee**, which ensure that Network Delivery, Assurance and Monitoring are always equipped with all the tools, training and organisation to do their job.

2.4 ETHICS IN CONDUCTING BUSINESS

2.4.1 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 that 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 Model** pursuant to the Legislative Decree **no. 231** of 8 June 2001 (hereinafter referred to as the MOG), 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 also on a preventive basis, aimed at avoiding that crimes and offences of any kind are committed.

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.[21]

The ways in which the Company concretely implements MOG 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 and updating it when necessary;
- segregation of roles in the structuring of business processes and in the management of financial resources;

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

[21] Open Fiber's Board of Directors - on 2 February 2021 - approved the latest MOG review. The main changes introduced were:
- general review of the MOG, with particular reference to the regulatory updates made to the predicate offences set out in Legislative Decree 231/01 and to simplifying the structure and presentation of the contents of the document;
- new risk areas and sensitive activities also envisaging the introduction of the special section dedicated to tax crimes; elimination/modification of risk area sections and sensitive activities not deemed directly applicable to Open Fiber and updating of information flows to the Supervisory Body.

- 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 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 to all employees.

The Company has scheduled a number of training modules aimed at raising awareness among employees about behaviour or circumstances that may constitute offences covered by Decree 231/2001, including those related to corruption, regarding which no episodes have been reported in the last three years. In this context, confirming Open Fiber's constant commitment to combating 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 231 training contents are updated in relation to the evolution of legislation and of the MOG 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 informs the 231 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[22].

[22] In particular, with regard to training activities, following the updating of the MOG 231, the Company, through the Personnel, Organisation and Services Department, updated the teaching contents of the 231 training plan and in detail the training was administered as follows:
- for Open Fiber employees hired up to 31 December 2020 and for all newly hired employees from October 2021, e-learning courses have been scheduled on: i) the Ethical Code, ii) the General Section of the MOG and iii) the Special Sections of the MOG (courses updated according to the changes made to the MOG approved on 2 February 2021);
- for personnel who have attended previous versions of these courses between 1 January 2021 and 31 October 2021: implementation of only the Special Sections course (in the updated version).

In order to make respect for human rights an essential requirement in the performance of Open Fiber's operational activities, the Code and the MOG 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.

2.4.2 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 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.

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;
- to make informed decisions consistent with risk appetite, disseminating a correct knowledge of risks, legality and corporate values.

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 (the so-called 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.

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 Steering Committee (made up of the CEO, the Heads of Administration, Finance and Control, Corporate Affairs, Personnel Organisation and Services, and Audit Departments) ensures the governance, supervision and monitoring of the Risk Management process.

2.4.3 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 directive 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, as interpreted by the European Data Protection Board and the Italian Data Protection Authority:

1. ***Gap analysis:*** identification of critical areas to be addressed, appointment of the Data Protection Officer (DPO), drafting of processing registers for each Department;
2. ***Impact assessment:*** identification and implementation of activities aimed at mitigating the criticalities identified for 'high' and 'very high' residual risk treatments;
3. ***Internal and external Privacy Audit:*** verification of the compliance of Departments and persons appointed as Data Processing Supervisors.

All employees have been recognised as "Authorised Data Processors" and, in addition, System Administrators have been appointed. Data processing in Open Fiber is carried out following the principle of Accountability, i.e. 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.

In 2021, all privacy-relevant corporate procedures were updated to comply with new legal and regulatory guidelines and the new measures issued by the Italian Data Protection Authority.

Data Privacy Governance

The model was structured by Open Fiber in order 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".

2.4.4 Quality, Occupational Health & Safety and Environmental Management System

Open Fiber has adopted a Quality, Occupational Health & Safety and Environmental Management System (hereinafter referred to as **QHSE Management System**) in accordance with UNI EN ISO 9001, UNI ISO 45001 and UNI EN ISO 14001 international standards and certified by an independent third party in 2020, aimed at ensuring compliance with the

commitments and achievement of the objectives stated in the Quality, Occupational Health & Safety and Environmental Protection Policy. The adoption of this System - whose certifications were confirmed during the surveillance audit in 2021 - ensures the implementation of the process of continuous improvement of the Company's performance.

The QHSE Management System was developed by adopting the ***risk-based thinking***[23] 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*[24].

Open Fiber considers it important that all personnel and those interested in the Company's activities can 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 in order 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 ascertain the effectiveness and efficiency of the company's processes, consistency with current legislation on Occupational Health and Safety and Environmental Protection, technical standards and the requirements and processes defined by the Management System itself.

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

[23] 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).

[24] 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.

Ensuring Customer Satisfaction, Occupational Health & Safety and Environmental Protection: a continuous 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:

- ensuring safe and healthy working conditions in order to prevent and minimise the causes of possible accidents, injuries and occupational illnesses;
- taking action to identify hazards, assessing the associated risks and taking steps to eliminate and, if not possible, reduce them;
- taking preventive and protective measures and verifying their effectiveness, with a view to the process of continuous improvement;
- ensuring the maximum Health and Safety of employees and any other person inside its working facilities and throughout the production cycle;
- ensuring compliance with applicable laws, regulations and internal procedures, which are periodically checked and updated;
- taking into account the environment and protecting the territory where it operates in carrying out its business activities, identifying and planning actions to prevent or mitigate negative environmental impacts;
- promoting and pursuing the implementation of best practices in order to achieve continuous improvement in its quality, Occupational Health and Safety and environmental protection performance;
- disseminating and consolidating the culture of quality, safety and environmental protection through the involvement and consultation of workers and their representatives;
- 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.

This 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.

Control activities

In addition to the Vendor Rating system[25], with which performance related to the services received from its contractors is periodically monitored, 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.

These checks, which aim to verify the conformity of the installations to the Technical Standards and the compliance with Open Fiber processes, are carried out on three levels:

- **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 2021, more than 1,200 assessments were carried out by Open Fiber Field Managers, of which more than 700 inspections were carried out at the sites and more than 500 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 2021, more than 1,200 inspections were carried out, including 600 visits to sites and more than 600 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 & HSE 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 2021, 60 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 2021 the Prevention and Protection Service carried out 23 inspections at the Company's premises and technological sites located throughout the country.

2.4.5 Cybersecurity and Business Continuity

Information Security and Business Continuity Management System

In full compliance with the corporate values represented by a high-quality and efficient infrastructure and the development of innovation and creation of shared value, Open Fiber, through the implementation of an Integrated Management System for Information Security and Business Continuity, is committed to maintaining a position of mature and high security for the benefit of its Customers, its employees and its collaborators, and all its stakeholders.

The Management System, inspired by the ISO 27001 (Information Security Management Systems) and ISO 22301 (Business Continuity Management Systems) standards, is aimed at ensuring continuous improvement and the achievement of the objectives stated in the Information Security Policy and the Business Continuity Policy. This choice is voluntary and corresponds to the Company's strategy to manage these risks in a structured manner, pursuing the following objectives:

- ensuring the levels of service availability set out in the agreements with Customers;
- ensuring the availability of resources to support the infrastructure;
- ensuring the availability and safety of the personnel needed to perform mission critical business processes;

X-IRT

In 2021, Open Fiber implemented its Cybersecurity practice, also in accordance with current and foreseeable industry standards and regulations.

In order to monitor and respond ever more promptly to incidents, safeguarding above all the continuity of the core services provided, Open Fiber has set up an **X-IRT Security Operation Center** equipped with security operations platforms and specialised personnel.

Such X-IRT together with other Cyber and Information Security activities allows to:
- monitor security events;
- manage Security incidents;
- perform threat Intelligence activities;
- continuously monitor vulnerabilities.

Cyber Security Awareness

During 2021, the Company kept up its commitment in awareness-raising activities and, in general, in the dissemination of the "culture of cyber security", involving personnel in various initiatives aimed at recognising and managing Cyber Security threats and risks and aimed at training/verifying awareness of the procedures implemented, including:

- 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 in relation to 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 among the staff involved.

[25] For a description of the Vendor Rating process, please refer to the paragraph "A shared responsibility along the entire value chain".

- ensuring compliance with the mandatory legal and regulatory requirements applicable both to the context in which Open Fiber operates and, in particular, to the services provided;
- ensuring compliance with the contractual requirements and obligations regulating the services;
- meeting the needs and expectations of internal and external stakeholders.

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

Business Continuity Plan

Being aware of the core processes for the provision of services to its customers, Open Fiber - through the development of the Business Continuity Plan - has defined the business continuity strategies and recovery actions to be implemented in the event of a critical event leading to an interruption of core processes.

In addition to defining roles and responsibilities in the implementation of recovery activities, the plan sets out strategies in specific action sheets, divided into five areas according to the type of unavailability, namely:

- internal staff;
- suppliers;
- basic infrastructure;
- information technology;
- building.

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

2.5 TRANSPARENCY AND EQUAL ACCESS

2.5.1 Antitrust Oversight Committee

In pursuing the ambitious project of wiring Italy, Open Fiber relies on the support and collaboration of various players in the digital transformation with whom it operates in full transparency and synergy, such as institutions for the administrative management of authorisations, suppliers for the creation of the infrastructure and partner operators for the sale of optical 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 the European Community, Open Fiber provides free access to the progress of work through its website, making available documents and interactive maps, through which it is possible to read in detail the progress of the sites for each Municipality, both for FTTH (Fiber To The Home) and FWA (Fixed Wireless Access) technology.

Furthermore, in order to ensure full compliance with the rules protecting 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** - which provides all members of corporate bodies and employees with a systematic framework of reference on the protection of competition - and has appointed an Antitrust Oversight Committee, consisting of members of the Legal and Regulatory Departments, to which alleged wrongdoing and/or abuses are reported and which has the exclusive competence to analyse unlawfulness.

Specifically, the Antitrust Code identifies:

- the practices, conduct or behaviour that may breach competition regulations;
- the areas where there is a risk of wrongdoing occurring and the persons who, given their responsibilities and functions, may be most exposed to such risks, in order to prevent them;
- topics on which it may be appropriate for staff to discuss with the Company's internal Antitrust Oversight Committee, which is entrusted with providing the necessary support and assistance on the implementation of the Code.

Failure to comply with the Code can put the reputation, image and success of Open Fiber at risk and can result in very significant sanctions for the latter. For this reason, the Company has decided to:

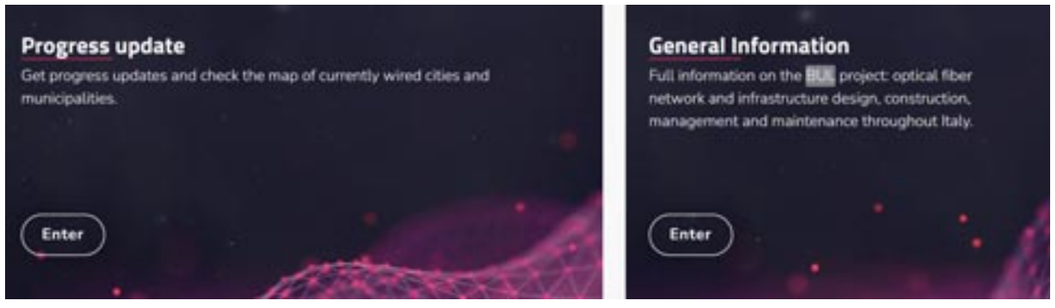
- disseminate the Code widely, making it accessible to all personnel, by providing appropriate and regular antitrust training programmes;
- ensure the periodic review and updating of the Code in order to adapt it to the evolution of competition law; and
- provide for a system of disciplinary sanctions to punish any violations;
- adopt internal procedures regulating the process of collecting, analysing and processing any violations;
- ensure the confidentiality of the identity and professional protection of those who report possible violations, in accordance with the law.

In 2021, there are no pending or concluded legal actions against Open Fiber regarding anti-competitive behaviour and antitrust violations.

2.5.2 Transparency and communication to citizens, companies and Public Administration

As a wholesale operator, Open Fiber Fiber has always pursued its Mission to wire Italy. This ambition requires the support and collaboration of various players involved in the digital transformation: the Company operates in full transparency and in synergy with institutions for the bureaucratic management of authorisations, with suppliers for the creation of infrastructure and with partner operators for the sale of optical fiber to the end customer.

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



citizens to associations, from entities to authorities, not only about the compliance with the infrastructure development plan and the digital services that will be made available, but also about the social and environmental impact that these activities may have.

Indeed, Open Fiber provides free access to the state of progress of the work carried out, in accordance with the information and transparency obligations it has signed up to as the contractor of the Infratel calls for tender. With this in mind, it has made available various information points on its website, with documentation and interactive maps where it is possible to read in detail the progress of the worksites, both for FTTH and FWA technology and for each Municipality.

In addition to the digital channels of the institutional website, Open Fiber discloses to interested parties the results of monitoring and impact assessments that it continuously carries out, both through dedicated meetings with institutions (e.g. during conferences on innovation or digitalisation) and during public communication events (e.g. press conferences and meetings with associations). Such opportunities for dissemination are always formalised on the company's website, where you can also find a special section for press releases[26].

In 2021 alone, Open Fiber organised and took part in more than 30 public events aimed at disseminating the corporate 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, varied in form and purpose: from those dedicated to the opening and sale in one or more municipalities to press conferences, from sustainability events to the organisation of institutional discussions on specific projects.

Open Fiber also devotes channels to handle requests for information and stakeholder complaints, committing to always provide a timely response in a very short time, also through the activation of social channels. Out of the requests received in 2021, the majority relate to requests for information, demonstrating that the benefit brought by the network infrastructure is considerable and well perceived by the communities; the majority of complaints, on the other hand, are due to inconveniences and incidents caused by construction work.

2.6 SHARED RESPONSIBILITY THROUGHOUT THE SUPPLY CHAIN

2.6.1 Description of the supply chain

Open Fiber aims to build a fiber optic infrastructure capable of covering the whole country with an Ultra-Broadband (BUL) 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[27]. 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[28] 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.

Quality, transparency and sustainability of procurement are the principles by which Open Fiber is inspired 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[29] Basic Requirements for Qualification (*Requisiti di Base per la Qualificazione*, RBQ) have been defined, i.e., basic technical-qualitative requirements that companies must meet in order to be included in the list of qualified suppliers of Open Fiber.

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

[26] See the website: https://openfiber.it/mondo-open-fiber/comunicati-stampa/
[27] In agreement with the relevant managing bodies.
[28] 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.
[29] For example: Network elements, Construction and maintenance work for fiber optic telecommunications installations, Professional services for the design of FWA and fiber optic networks.

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[30]. Adherence to the 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, a 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.

2.6.2 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.

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 impacts are mainly related to:

- **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.

[30] 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/.

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[31].

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., number 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.

2.7 INNOVATION

2.7.1 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 '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.

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

[31] The scouting product types - scouting supplies, scouting works, scouting services - are excluded from the Vendor Rating system. The Vendor Rating system became fully operational in 2020.

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.

During 2021, several innovative activities were developed in Open Factory. Here follow some of the main ones:

- **8k VIDEO:** thanks to the collaboration with partners operating in the broadcasting and multimedia sector in the ultra-wibe 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 (4K) and UHDTV (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.

2.7.2 Virtual Server Farm

The **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 **Server Farm**, taking advantage of its start-up status.

In the Open Fiber 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 virtualised.

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 Center;
- acceleration of applications and resources provisioning.

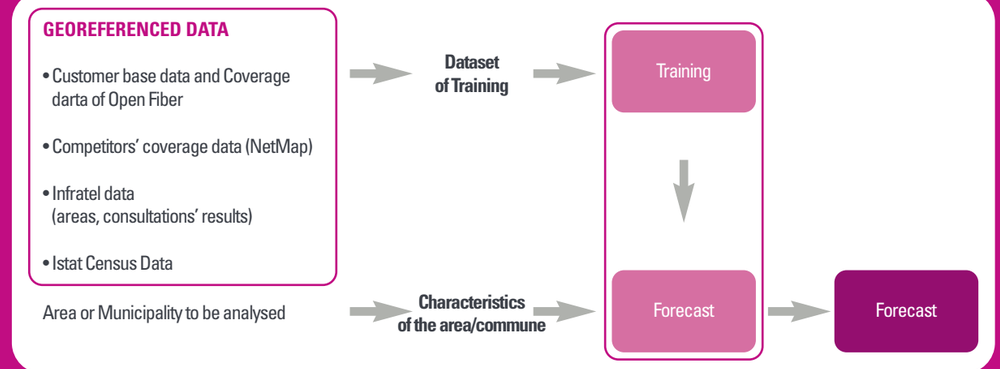
2.7.3 Innovation Lab

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.

Over the course of 2021, **OFIL** entered a more operational phase and launched a number of projects.

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.



Tiresia's forecasting models are already being used in Open Fiber, for example to reply to consultations or tenders, or to support investment decisions. Available models include:
- **Orders Forecast:** It 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 Wire:** It applies to areas where Open Fiber is not yet operational and allows to predict the penetration rate up to 24/27 months.
- **Municipalities Ranking:** It combines the previous models according to the characteristics of the analysed context to calculate a ranking of the municipalities.

Implementation of Artificial Intelligence technologies

Open Fiber has launched the **Tiresia Project**, a first example of Open Fiber's transformation into a data-driven company. Tiresia uses 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.

Collaborations with the world of research

Within the Open Fiber Innovation Lab, **in partnership with Errequadro**, a programme has been launched 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 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 "AI 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.

B2B market expansion

Within the Open Fiber Innovation Lab, in partnership with the Naima braintrust, Open Fiber has launched an intervention based on the Point-To-Market (PtM) approach aimed at expanding the b2b segment and in particular 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 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.

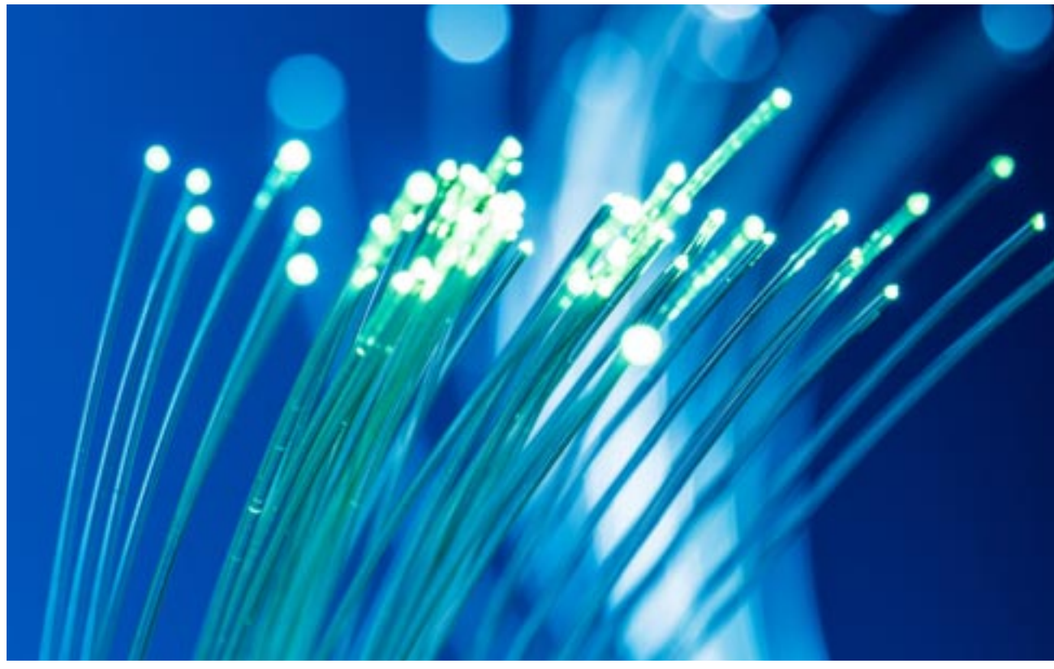
The project consists in the identification of some interesting PILOTs in which Open Fiber makes its technical resources and capabilities available in a neutral way and the Operators can offer their customers the possibility of testing the **bundle that creates super-performing applications**. If this 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 pilot project is being developed 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.

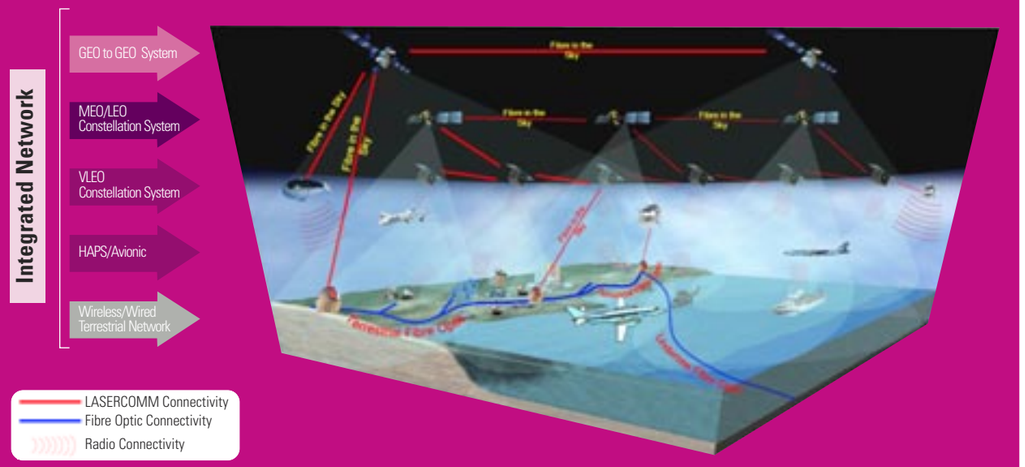
In the field of **Industry 4.0**, a project proposal aimed at the market of local telecommunications operators has been launched to allow them to provide their business customers with a bundled offer, i.e., a package of IT application solutions that includes fast connectivity and housing, hosting and 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 SpA, a company owned by five Tuscan municipalities between the Etruscan Coast and the Colline Metallifere. The company, which manages a complex of two Archaeological Parks, an Archaeo-Mineral Park, three Museums and three Nature Parks, attracting around 100,000 visitors a year, wants 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



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**"). Systems such as HydRON are instrumental in reducing the global digital divide by providing an important complement to terrestrial 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, completed in the summer of 2021, 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.

Leonardo's walls both in the Parks and in the museum and urban context, allowing visitors to virtually go back in time.

Space Economy

Within the Open Fiber Innovation Lab, 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 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.

03

Contribution to the National Economic System

3.1 IMPACTS OF THE OPEN FIBER NETWORK

Thanks to its business model, Open Fiber has already enabled the creation of a new, stable and fast digital infrastructure characterised by a low environmental and architectural-landscape impact. It is an infrastructure that will reach even the smallest centres and is already crossing the country's major cities, thanks to the network being built following the winning of Infratel tenders - for the construction and twenty-year management of the network - with which it will operate in rural and less populated areas. The 2022-2031 plan envisages around EUR 11 Billion. This investment will allow to connect over **24 million real estate units** in Italy, including cities (black areas), small and isolated municipalities (white areas) and industrial districts (grey areas).

The FTTH network, which is the most advanced technology, allowing a faster, more efficient and more reliable data transmission, was created to offer people access to services and to provide new opportunities for the Italian System: from schools to institutions, from businesses to homes, from offices to hospitals. In addition, the new, increasingly digital working models with extensive use of smart working have already led to the birth of new private-work schemes, reclassifying the needs and requirements of each of us. It will no longer be necessary to be physically present in large urban centres to work, but it will also be possible to work in small towns or in co-working spaces. This is a real revolution that will lead to a new conception of spaces and cities, reversing the trend of impoverishment of small towns and cities and promoting the evolution of environmental sustainability (for example, thanks to lower pollution as a result of reduced commuting).

The impact generated by Open Fiber technological and offer choices therefore has a double dimension: the first is linked to the **direct impacts** that the organization generates through the activities and decisions taken to pursue its business objectives (for example, the use of excavation techniques with low environmental impact, the use and research of recycled materials, the use of new generation equipment with low consumption); the second, on the other hand, is linked to the indirect and induced impacts that the Company generates as an enabler of services for other operators (for example, the possibility for all operators to use a highly performing infrastructure without the need for their own investments, with considerable savings in time, costs and overall impacts on the environment and society).

Private users

Open Fiber brings optical fiber directly into homes and offices, ensuring access to the most advanced Internet services via FTTH technology. Open Fiber's new plan for FTTH cabling foresees reaching approximately 24 milion of real estate units, namely houses, shops and offices.

The FTTH network has numerous advantages for private individuals, from teleworking to video surveillance and online streaming, making it possible to work, study, access high quality audio and video content and enjoy public and E-health services. The ultra-wideband connection by Open Fiber makes it possible to carry out activities on several devices connected to the home network at the same time. It also makes it possible to implement home automation systems by centralising all the signals in a single system, thus enabling high performances and considerable cost savings.

Business users

Open Fiber's network provides a real advantage to companies because it allows them to digitalise, optimise their production processes, expand their range of products and services and reach new markets, use cloud services and better manage the exchange of information between the company, its suppliers and end customers.

Industry 4.0. needs high-speed, symmetrical (download and upload), low-latency and highly reliable connections to support the evolution of production and organisational processes.

Open Fiber has introduced commercial offers with dedicated services for companies in order to allow partner operators to stimulate and support the growth and technological development of companies.

In addition to urban centres, Open Fiber has also decided to invest in optical fiber coverage of Italian industrial areas. Italy's industrial fabric is characterised by its strong territorial roots, mainly consisting of small and medium-sized enterprises, concentrated in specific geographical areas, outside of urban centres, specialising in certain production chains, but which too often over the years have remained on the margins of telecommunications investments.

With private investments, Open Fiber has already connected important industrial areas in the hinterland of Italy's major urban centres, from north to south, such as the last ones opened during the year in Forlì, Ancona and Salerno. Thousands of businesses can now benefit from the best technology available on the market, the FTTH service, fiber laid right into individual real estate units, with connection speeds of up to 10 Gigabits per second.

As the licensor of the network financed by Infratel, Open Fiber is also connecting industrial areas previously excluded from ultra-broadband connectivity services, which is essential for businesses to return to the forefront of innovation and attract new investment and employment. An example of this is the industrial area of Presicce in the Puglia region, now served by the optical fiber network, where the Martinucci confectionery factory has been connected, as well as other important local businesses that can benefit from the new Ultra Broadband public telecommunications network.

Thanks to Open Fiber's commitment, companies can count on a technologically advanced infrastructure able to manage the constant and progressive increase in data traffic and allow them to benefit from all the digital services of the new Industry 4.0.

Public Administration

Open Fiber's superfast optical fiber enables a series of value-added services not only for private individuals but also for the public sector, contributing to the transformation of the Public Administration into an increasingly digital sector. The ultra-wideband makes Public Administration more efficient and closer to citizens as it is able to make services more efficient by redesigning them to meet individual needs. Open Fiber has introduced offers with pricing models dedicated to Operators for direct connections to public administrations and schools, thus boosting the ability of operators to offer connectivity services to the public administration.

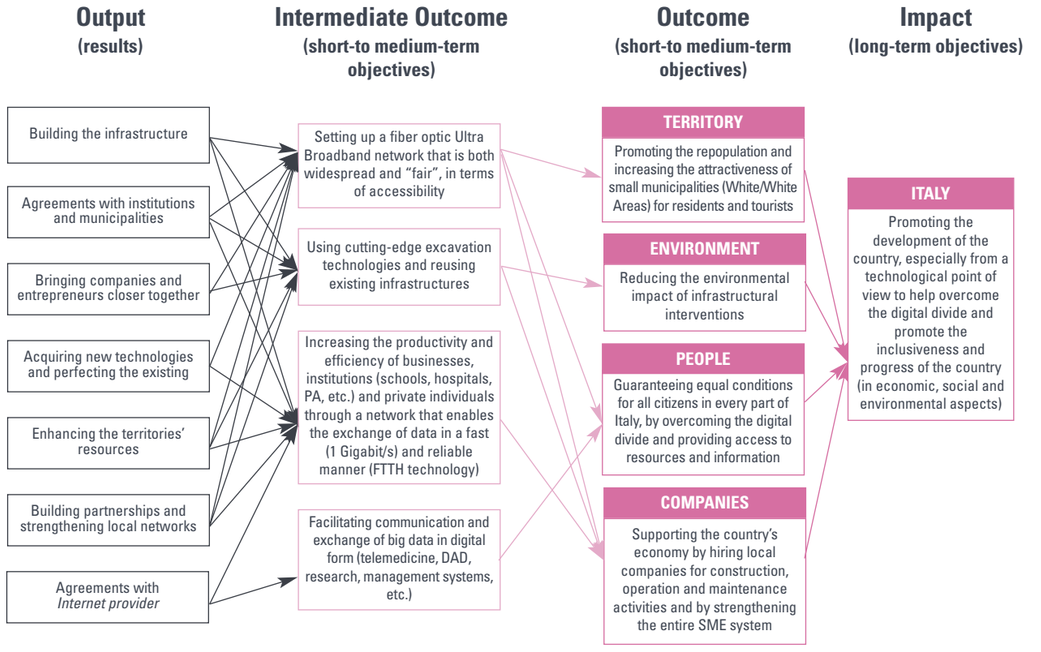
Open Fiber aims to support Institutions in the development of the Gigabit Society, i.e., an interconnected society with digitised e-government and e-health services, stable connections for teleworking and e-learning,

and high-speed public Wi-Fi. Thanks to the optical fiber network, it is possible to make our cities "Smarter" because they are able to manage large flows of data exchanged between citizens, hospitals, schools and public administration. In particular, the use of Internet of Things (IoT) technology will be used to achieve these objectives, which will have a positive impact on public services such as mobility to improve citizens' quality of life.

3.2 MEASURING THE VALUE GENERATED: THE THEORY OF CHANGE IN THE OPEN FIBER MODEL

The challenge of digitalisation, innovation and development of the country is one of the objectives that Open Fiber pursues following the principles of inclusiveness and respect for the environment and people. For the year 2021, the Company has launched a process aimed at measuring and enhancing the value generated for the environment and for the social and productive fabric of the country.

As a champion of novelty and change, Open Fiber has decided to adopt the **Theory of Change** approach, a planning method that involves internal and external stakeholders, aimed at rebuilding the Company's interventions and highlighting the impacts generated along the service delivery process. The theory identifies the final goal that the Company intends to pursue and, going backwards, identifies the long-, medium- and short-term objectives. Using this method, in 2021 Open Fiber started a first measurement of the value generated and shared with its stakeholders: the results, in an extended version and combined with the



progress achieved in the year 2021, were reported within the Sustainability Report according to impact areas.

The impact areas identified represent the challenges that Open Fiber sets for itself to generate value for the territory, the environment, Italian businesses and people. In this chapter, which is the core of the Sustainability report 2021, the objectives that fall within the four areas in which the Company creates value will be explored:

- **value for the territory:** enabling the country's connectivity to overcome the digital divide, to encourage the repopulation and greater attractiveness of small municipalities for residents and tourists, the digitalisation of the Public Administration and the development of an increasingly efficient and technological optical fiber infrastructure, in order to provide innovative services that support the territory;
- **value for the environment:** contributing to the fight against climate change and reducing environmental impact through the increasingly efficient and sustainable use of energy, the adoption of innovative and least invasive construction and excavation techniques, and the large-scale spread of fiber that also contributes to reducing users' energy consumption;
- **value for the people:** promoting equal conditions for all citizens in accessing resources and information, with the aim of bridging the cultural digital divide; enabling innovative healthcare services and digitalising schools;
- **value for the companies:** boosting the whole system of small and medium-sized enterprises thanks to their involvement along the Open Fiber value chain and contributing to the increase in jobs generated.

3.3 VALUE FOR THE TERRITORY

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 centuries-old culture. This peculiarity is a strong point and, for this reason, Open Fiber is committed 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-Wide Band optical fiber network that is widespread throughout the Country appears to be an effective tool to accompany every local reality towards digitization. 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[32]. For this reason, Open Fiber always carries out an assessment of the environmental and social impacts, real and potential, and constantly monitors its activities in order to minimize the negative effects on the territory at all stages of development, starting from a design oriented towards maximum reuse of existing infrastructures (thus minimizing 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 (such as excavation

[32] Primary services, such as electricity, gas, telecommunications and sewerage networks, channeled into special pipes built underground.

techniques in micro-trench and mini-trench or reduced mini-trench and cable laying in "no-dig" technology)[33].

3.3.1 Optical fiber as an opportunity for the territory

Smart Working, distance learning, but also streaming, home automation and gaming: with the Coronavirus emergency, Internet demand has boomed. It is in this context that Open Fiber's actions become an opportunity for the territory, as it provides the population, municipalities and provinces with access to an infrastructure of primary interest for the economic and social development of the country. This makes it possible to work from home and transfer large quantities of data, follow distance learning programmes, quickly access the digital services of Public Administration and make high-quality video calls, without interruptions; all thanks to a high navigation speed, a stable connection and a very low latency that avoids delays in data transmission.

Following the COVID-19 emergency that began in 2020, the positive perception of the impact that Open Fiber's activity has had and the benefits derived from connecting to an ultra-fast network has inevitably increased. In fact, an increasing number of municipalities have requested to accelerate and/or increase connectivity in their territory at a time when this has proven to be fundamental (e.g., extension of coverage to reach more areas of the city, greater connectivity in areas where there are school buildings in order to guarantee the continuation of their activities). In this context, requests from individuals have also increased exponentially, both in terms of requests for connection and information on Open Fiber's development plans and in terms of urging them to provide fiber as soon as possible within their territory.

3.3.2 Relations with local bodies and authorities in permitting activities

In Italian territories with low population density, the so-called 'market failure areas' (C&D Cluster), the National Ultra-Broadband 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 with the local authorities, organises cycles of

The Italian Digitalisation Strategy

In May 2021, the Inter-ministerial Committee for Digital Transition (*Comitato Interministeriale per la Transizione Digitale, CITD*) approved the new **Italian Ultra-Broadband Strategy - "Towards the Gigabit Society"**, which sets out the actions needed to achieve the digital transformation objectives laid down by the European Commission in 2016 and 2021, respectively with the Communication on Connectivity for a Single European Digital Market (the so-called "Gigabit Society") and the Communication on the Digital Decade (the so-called "Digital Compass"), through which Europe's digital transformation is to be achieved by 2030. These European objectives are developed around four key points:

- digital skills;
- digitalisation of public services;
- digital transformation of companies;
- implementation of safe and sustainable digital infrastructures.

The Strategy consists of seven actions, two of which are already underway and provided for in the 2015 Strategy (White Areas Plan and Voucher Plan) and five approved by the Council of Ministers in April 2021 in the National Recovery and Resilience Plan (NRRP): "1 Giga Italy " Plan; " 5G Italy" Plan; "Connected Schools" Plan; "Connected Health" Plan; "Smaller Islands" Plan.

The "White Areas Plan" has been revised: as of today, it envisages 7,416 municipalities, for a total of about 8.4 million property units, 74% of which in FTTH (about 6.2 million) and 26% in FWA (about 2.2 million). The concession also envisages that, on completion of the work, all Public Administration offices and all industrial areas in white areas will be connected to networks enabling over 100 Mbit/s services.

[33] For more information on the environmental benefits of FWA technology, see paragraph 3.4 "Value for the environment".

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 four years more than **180 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.

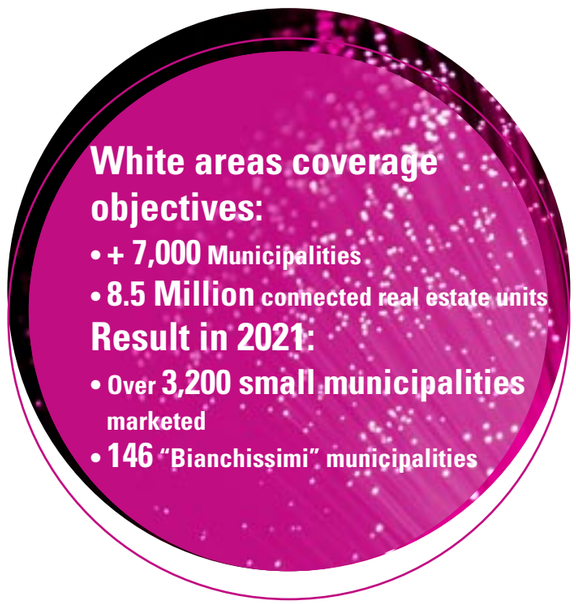
In areas with a high population density (A&B Cluster), the Company - before starting work - opens discussions with the municipal administration in order to share the activity plan and the operating procedures for creating the infrastructure. These discussions often lead to the signing of a **Framework Agreement** between Open Fiber and the Municipality which formalises the above-mentioned issues.

Since the start of its activities, Open Fiber has signed more than **200 Framework Agreements** with large and medium-sized municipalities.

In addition to the dedicated permitting procedures and channels, there are some cross-cutting activities that the Company carries out for both Clusters. 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.

3.3.3 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), through the elaboration of 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 municipalities were considered in exodus (i.e. with a negative variation of the resident population).



#GOODSTORIES

Trentino: the first "Digital Smart Land"
Open Fiber will bring optical fiber to all the Municipalities of the "White Areas" of the Trentino valleys by 2022. The Autonomous Province of Trento will thus become the first 'Digital Smart Land' in the Alps, a digitally intelligent, inclusive and sustainable territory with cutting-edge digital services available to businesses and families. This project will guarantee a fast and safe connection to the whole territory and will return to the valleys and mountain areas the same opportunities reserved today for cities and more urbanized territories. The future of the mountains also passes through new technologies.

Valle del Fortore: a model of digital transformation
One of the latest projects that saw Open Fiber as a protagonist involved the Fortore Valley (Valle del Fortore), a territory located on the border between Campania, Molise and Puglia. Thanks to the winning combination of FTTH and FWA technology - which allows the Ultra-Wide Band to be brought to the most inaccessible territories - the history, tradition and culture of the small villages of this valley are reborn and find new ways of expressing themselves.
With the arrival of optical fiber, in fact, the Valley presents itself today as a model of digital transformation, an example of that rebirth that can only take place when distances are zeroed thanks to the Ultra-Wide Band.

Palmanova, Open Fiber illuminates the 'starry city' with optical fiber
Open Fiber ultra-fast network is now available in Palmanova, a fortress-city declared a National Monument and a Unesco World Heritage Site. In the historic "starry city", so called due to its 9-pointed star shape, there are more than 2,600 real estate units that have been connected through an infrastructure that extends for about 26 kilometres. The interesting fact is that more than 70% of it is achieved through the reuse of existing underground or aerial ducts and networks. The wiring interventions also involved buildings of public and historical interest including the Napoleonic Foscarini and Garzoni powder houses, the former Napoleonic barracks Montesanto, Porta Aquileia, the military historical museum, the civic museum - Info point, the library and the municipal theatre.

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.

A municipality characterized by depopulation and aging is a place that risks being left out of the progress of development and digitization that our Country is facing. In this context, the work of Open Fiber is relevant: carrying out its own cabling plan for the White Areas, with the aim of bridging the digital divide still present today, will be able to reverse the trend of depopulation and aging of small municipalities. 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 marginalization for those born in the province: with the Ultra-Wide Band, in fact, every professional barrier can be eliminated and small entrepreneurs can contact and 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-Wide Band 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-Wide Band, thanks, for example, to the services that this technology enables, such as telemedicine, Smart Working or digitized public service.

3.3.4 Wireless and Fiber

The evolution of mobile networks and, more generally, of wireless networks, requires an increasingly powerful network structure and capacity to guarantee the expected performance. 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.

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

During 2021, 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.

"Bianchissime" areas and FWA technology

A study carried out by AGCOM in 2020, at the request of the Ministry of Innovation, identified the so-called "no-internet" or "Bianchissime" areas (literally “very white”), where the connection is not present even in 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 due to the COVID-19 emergency.

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[34], also known as Wireless

[34] Wireless Point-to-Multipoint connection on licensed band that from the FWA site reaches the Terminal Station located at the single Real Estate Unit.

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-Wide Band 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[35].

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[36]. To date, Open Fiber has covered - with funds borne by the Company - 146 Municipalities, of which 109 with FTTH/FWA technology and 37 with STTH (Satellite To The Home) technology[37].

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.

3.3.5 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 homes 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.

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 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

[35] For more information on the environmental benefits of FWA technology, see paragraph 3.4 "Value for the environment".

[36] 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.

[37] 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. It will be provided by Open Fiber to its partner operators, through the agreement signed with Telespazio, which will be responsible for all the activities necessary for the provision of the service (Delivery/Assurance activities, access to the Big Internet, maintenance of the service, etc.).

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. This ensured coverage of hundreds of kilometres. The data collected was made available on the web application interface, in order 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.

The experiment

The two Open Fiber sites of **Ascoli Piceno** and **Teramo** - territories with a high probability of seismic events as indicated by INGV - 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.

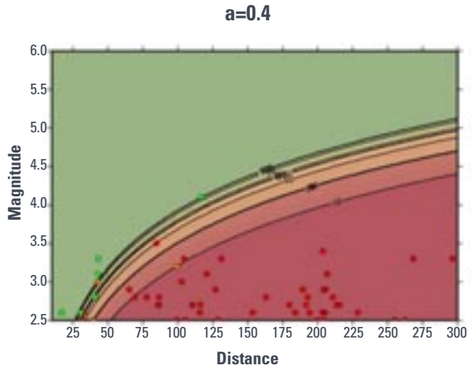
In order to identify seismic events, the data were first analysed and processed by web application with advanced algorithms such as Artificial Intelligence (AI), and finally examined and validated by INGV.

The results

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.

Conclusion

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



FaaS: Fiber as a Sensing

Open Fiber is about to launch a new Fiber Sensing project named FaaS (Fiber as a Sensing), in collaboration with PoliTO (Polytechnic of Turin), 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.

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 Polarization Mode Dispersion (PMD) and States of Polarization (SOP) measurable on the optical interfaces on the link, are responsive to the physical stresses experienced by the fiber.

The study includes a first phase of data collection on the optical nodes currently installed. Subsequently, statistical studies will have to be carried out to correlate these parameters - or their intermediate processing - with the phenomenon observed. The development of the analysis algorithms may make use of physical models of the phenomena studied as well as machine learning and, in general, artificial intelligence techniques.

Finally, a centralised application should be designed to provide real-time information on the progress of measurements. If a significant phenomenon is detected, a means of communicating with the bodies responsible for managing the phenomenon should be set up.

#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 so-called '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-wideband connectivity services in Calabria.

3.3.6 The digitization of local public administrations

Stable and fast Internet connection, security, higher performance: optical fiber is the key to better service to the citizen. From identity cards to medical records, everyday life now flows digitally. This is why the current development plans provide for the implementation of an infrastructure for an Ultra-Wide Band Internet connection in each European country. The demand for optical fiber in Italy, particularly in the Covid era, has undergone a real surge and the various measures for its capillarization see the Company involved at the forefront.

As the digital community spreads globally, Public Administrations feel the need to adapt accordingly. The optical fiber, in fact, thanks to the characteristics of stability and connection speed, can guarantee the possibility of enhancing online services to the Public Administration, the presence of an ultra-fast connection to schools and digital support to the health system, as well as economic benefits.

Services provided online: faster and safer performance

Already in 2017, ISTAT data highlighted the need for municipal administrations to equip themselves with Ultra-Wide Band connectivity services: the percentage of Bodies able to provide and manage an online service from request to completion was slightly lower to 34%. A little more than two years later, the COVID-19 emergency made Public Administrations, especially schools and health facilities, face the need to have an FTTH connection. Providing users with forms and online material for download was no longer enough: it was necessary to have optical fiber to support the digital migration of most of the activities.

An unsecured connection or unable to meet the bandwidth requirements of digitally connected users and operators was no longer a viable solution. This rush to infrastructure, which initially took place out of necessity, later proved to be a source of advantages and benefits; not only did it make it possible to carry out practices that involved more people in greater safety, but it also streamlined most of the procedures.

A stable and fast connection: more efficient services

Beyond emergency situations and solutions that necessarily require the use of technology, the online migration of services to the citizen makes it possible to speed up practices that would normally require time, money and patience.

Let's try to imagine how much more convenient it would be to obtain an authorization to carry out construction work in your own home without having to queue up or ask for work permits. The provision of services of this kind electronically streamlines procedures, making life easier for both citizens and for the operators involved in the service. For the latter, in fact, the amount of activity would be considerably lightened: researching the files in the archive, contacting the operators involved, finding permits and revenue stamps, as well as keeping in mind the deadlines to be respected.

Optical fiber in schools: curricula to the next level[38]

When Distance Learning started, ironic comments on the subject monopolized the social feeds of exasperated parents and children. There was talk of teachers who were not familiar with new technologies, of slow connections, of audio and video problems, even of questions made with their hands clearly visible to avoid using cell phones as "prompters". The reason for the inconvenience was obvious: with hundreds of students and teachers connected at the same time, Ultra-Wide Band became a necessity. Once the institutes were wired with optical fiber, the perception of distance learning has radically changed.

Now 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-Wide Band 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.

Optical fiber and the healthcare system: more safety for patients and operators[39]

In the last two years the healthcare sector has experienced a real revolution. Hospitals, laboratories and medical offices have been hit by a bureaucratic and logistical tsunami that has rewritten much of everyday life. Telemedicine, one of the many services made possible thanks to optical fiber, which until recently was seen as an interesting solution but fundamentally still to be implemented, is becoming the norm, also bringing many advantages to those who are using it. Online reports, telematic archives, digital bookings are now natural complements that flank the visits and specialist services. An advantage for the entire system: less risks for staff and patients, documents that can be found on the web in a secure manner thanks to one-time passwords and, most importantly, no risk of loss of reports and folders.

Optical fiber and advantages for Public Administrations: a look at the economic benefits

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.

[38] For further information on the "School Plan" that Open Fiber is carrying out and the social value it is generating, please refer to paragraph 3.5 "Value for the people".

[39] For more information on the Telemedicine services enabled thanks to the Open Fiber infrastructure and on the benefits for patients, please refer to paragraph 3.5 "Value for the people".

Consequently, one of the actions necessary to improve telematization and streamline the management flows of practices is constituted by the activation of the connection to the Ultra-Wide Band 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.

Open Fiber is committed to putting local authorities in a position to achieve these goals, in the best possible way and with a state-of-the-art network.

3.3.7 Smart cities

A super-fast connection and the spread and availability of new technologies are essential to transform a city into a Smart City and achieve a high level of sustainable urban development and a better quality of life for citizens. The ecosystems of digital cities function thanks to the widespread diffusion of the Ultra-Wide Band able to power digital services and technologies such as the Internet of Things (IoT) and to increase the purchases and use of smart devices. This trend, if confirmed - as estimated by Eurostat - will lead to 4.9 billion networked objects by 2025 in the EU alone (out of about 25 billion worldwide).

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 optimization 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 digitalized 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.

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-Wide Band, 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. 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, characterized by the intrinsic efficiency of the materials that 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 personalized 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 2020 and 2021, the years in which the entire Country was forced to restrictive measures to combat the Coronavirus pandemic, were characterized by the provision of functional services to the institutional and administrative activities of the Municipality of Gemona del Friuli, such as the

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 3-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 **2 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;
- identification of the danger of gatherings, monitoring social distancing and reporting cases of non-compliance with the rules.

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.

electronic portal, cloud computing, sensor systems for environmental remote sensing, teleworking, and many other opportunities in the health, information and education sectors.

3.3.8 Smart Grid

Open Fiber will connect over 56 thousand secondary substations and related primary E-Distribution substations in optical fiber with the aim of evolving the network, 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 involves the creation of a communication system of maximum reliability and resilience at the service of the E-Distribution network, making it possible to implement new features that can significantly improve the performance of the network. The plan is based on the binding of the secondary and primary substations to an optical fiber network, in order to achieve a series of objectives and fundamental benefits for the development of the distribution network also in the future. To this end, in addition to the connection of the 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, 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 maximized 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.

Backhauling project in Sicily

Open Fiber is carrying out a study on the passive smart grid, with a focus on the Sicily Region, which aims to connect all the substations of the C&D Cluster, where there is greater dispersion of networks and less overlap. It was necessary to develop an innovative network project, with Open Fiber as responsible for the definition phases of the methodology. The project was launched in April 2021 and will be implemented in the years 2022-2023.

The current situation, which sees approximately 3,300 secondary and primary substations connected, all concentrated in 18 Municipalities of the A&B Cluster, will be accompanied by the connection of approximately 200 Municipalities of the C&D Cluster (equal to approximately 50% of the total Municipalities of Sicily), with around 1,490 secondary and primary substations.

The project aims to make Sicily a region of excellence in the field of smart grids in Italy and the model will then be extended to other regions.

3.3.9 Open Fiber for the protection of the historic heritage

Gela: a museumisation project funded by Open Fiber

It can happen that, during excavations for the cabling and laying of optical fiber cables, real archaeological discoveries are made. This happened during works to connect the **Municipality of Gela** (CL) to Open Fiber's FTTH network, during which 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 found.

After the first discoveries in August 2019, Open Fiber, together with the archaeological surveillance team of the Superintendency in charge of monitoring the sites, rewrote the intervention plan to make the most of these discoveries of enormous historical value.

The company has therefore worked to see how to complete the optical fiber network and at the same time avoid closing the excavations, turning the Gela necropolis into a real open-air museum. The work has been financed entirely by Open Fiber, which has allocated around 170,000 euros to the project. Thanks to the collaboration of the Caltanissetta Superintendency of Cultural and Environmental Heritage, it will be possible to complete the project, which will be a one-off project at regional level with clear benefits for the city and its visitors, as it will greatly enrich its archaeological heritage.

The archaeological discoveries and artefacts will be displayed, ventilated and illuminated inside and covered by a transparent sheet. Open Fiber will build the structures that will support and protect the site in future years, the lighting systems, as well as the ventilation and rainwater collection systems.

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 are uncovered

Outstanding discoveries have been made in the city of **Piacenza**, where Open Fiber is investing 14 million euros to wire up around 40 thousand properties. The work is bringing to light the remains of the ancient Farnese city, in the course of various excavation activities carried out in the historic centre. The Open Fiber teams, in agreement with the Municipality and the Superintendency for the provinces of Parma and Piacenza, are assisted by an archaeologist to ensure that the excavations are carried out properly and to ascertain the historical and archaeological value of any findings that are made during the subsoil tampering activities.

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. In the northernmost sector of Piacenza's historical centre lies the Sant'Agnese neighbourhood: the archaeological investigation focused on the crossing with Via delle Benedettine, where the church bearing the same name and built in 1677 is located, and on Palazzo Madama.

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. All of this is happening during works aimed at installing an ultra-wideband infrastructure that are once again redefining the city, which can now rely on a network enabling all the most innovative services.

Discoveries in Olgiate Molgora

Another extraordinary discovery was made in **Olgiate Molgora, in the Beolco area**, where Open Fiber technicians discovered the bones of a woman and her baby, dating back over a thousand years and immediately notified the Municipality and the Superintendency. The remains were found in the area in front of the church of San Pietro e Paolo following the excavation of the trench for the optical fiber. Unfortunately, since the tomb lacked any items belonging to the dead (jewellery, coins, etc.), it is difficult for the Superintendency to request further investigation. In any case, the bodies were secured by archaeologists and taken to the Superintendency where they will be analysed and dated with greater certainty, while the excavation was closed.

#GOODSTORIES

Optical fiber, between tradition and future - Pioraco Paper Museum

In Pioraco (MC), the town of paper since 1264, the Paper Museum has been established, an important testimony to the country's historical and artisanal production. The Museum has implemented an online musealisation with specific routes.

The ancient Roman theatre of Sepino

Sepino, a hamlet of Altilia with a population of around 1,800 in the province of Campobasso, is home to the Amphitheatre built in the Imperial period, which today is an archaeological heritage site that some would describe as a 'Little Pompei'.
The Sepino Amphitheatre is an important archaeological site for the region and southern Italy. Thanks to the intervention of Open Fiber, the site has been connected upon the request of the Superintendency and is currently undergoing an online musealisation process.

Monti della seta Museum in Abbadia Lariana

The journey along the digital highway built by Open Fiber begins in Lombardy: Abbadia Lariana is a small municipality on the shores of Lake Lecco with just over 3,100 inhabitants. Among the area's cultural treasures, the Monti silk museum is worth a special mention. The complex takes its name from the family that built it around 1818 as a silk spinning mill and then extended it in 1869, adding a building for breeding and spinning cocoons.
The museum - now made up of the two buildings, one housing the spinning-mill and winding machine, the other the spinning machine and ancillary activities - reproduces the rooms, tools and machinery of an old silk factory from the second half of the 19th century.

3.4 VALUE FOR THE ENVIRONMENT

The challenge of building a "future-proof" digital infrastructure for Italy must involve the use of innovative and sustainable solutions. Open Fiber is developing its own ultra-fast 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 resource consumption;
- the re-use of existing infrastructure wherever possible;
- a reduced impact of excavation techniques on the environment;
- the reduction of direct energy consumption by the company.

3.4.1 Reduced resource consumption thanks to the optical fiber

An optical fiber network not only has a high level of performance but is also environmentally friendly. 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 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[40], 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 fibre cables would produce only 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[41].

[40] For example, compounds based on oxides such as silicon oxide, phosphorus oxide and/or germanium oxide.
[41] Source Carbon Smart "Out digital infrastructure needn't cost the earth".

Currently under study: innovative and sustainable laying materials

Open Fiber is planning to implement a solution for the use of pipes for the protection of optical fiber cables produced with 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 "Plastica Seconda Vita" (Plastic Second Life) label, an environmental certification system dedicated to materials and products obtained from the recycling of plastic waste. The system's low environmental impact is due to the structure of the polyethylene-based pipe, at least 70% of which is made from recycled materials. The product, free of halogens and heavy metals, is completely recyclable at the end of its life cycle.

Finally, 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.

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.

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[42] thanks to its structure consisting of glass filaments enclosed in a polymer coating that makes it resistant to both mechanical and thermal phenomena. 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 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.

[42] Source Carbon Smart "Out digital infrastructure needn't cost the earth".

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.

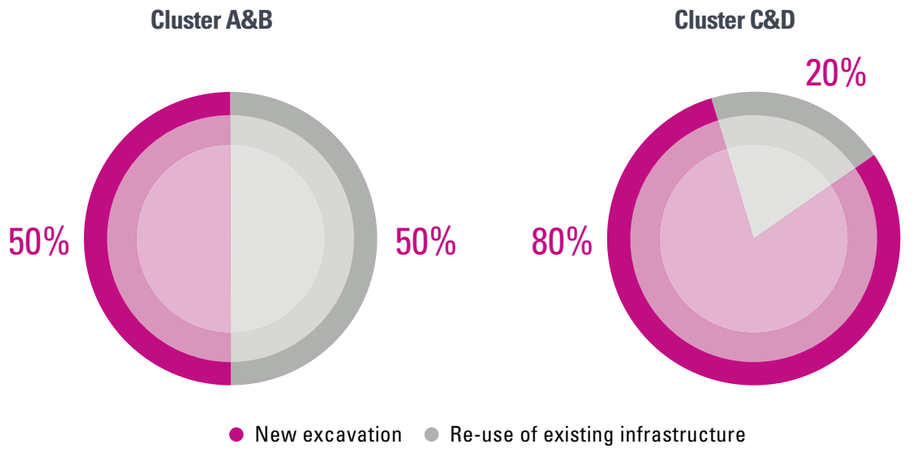
3.4.2 Innovative and sustainable creation techniques

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.

In 2021, the optical fiber cable laying activities involved the reuse of 50% of the existing infrastructure for the A&B Cluster, a percentage that increases to 80% for the C&D Cluster, showing the Company's commitment and achievements towards reducing the environmental and social impact of the worksites.



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, they 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[43], 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**".

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.

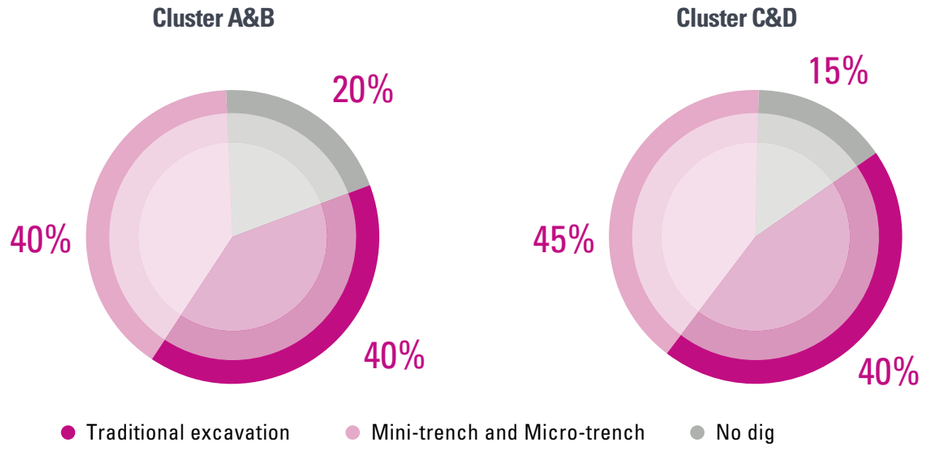
Micro-trenching is an even more advanced technology for laying optical fiber cables and can be used under certain special environmental conditions. Micro trenching is even smaller (only 2.5 cm wide by a maximum of 30 cm deep) and requires less use of machines, which simplifies opening and closing operations. A further advantage is linked to the restoration of the road surface: in normal excavation activities there are two stages of restoration (temporary restoration

[43] 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.

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 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 - for a 1 km section - to more than 40 tonnes of material. 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' or 'trenchless'. 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.

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 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.



For optical fiber cable laying activities in 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 finally for the remaining 20% of the operations the "no dig" excavation technique was used.

For optical fiber cable laying activities in 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 finally for the remaining 15% of the operations the "no dig" excavation technique was used.

FWA Wireless Sites

Fixed Wireless Access (FWA) technology is implemented where the FTTH network is not economically viable, especially in rural areas or where homes are more widely distributed. 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.

3.4.3 Efficient energy management and the fight against climate change

Open Fiber is committed to the protection of both the environment and natural resources. There are many initiatives and projects through which the company aims to manage the most significant environmental aspects and the reduction of their negative impacts, both real and potential. The energy consumption of the production sites of the various functional areas

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 fibre 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).

of Open Fiber represents a central theme of the business and a significant environmental aspect of the company's Integrated Management System[44]: for this reason, Open Fiber has adopted a further specific Management System on the subject of energy, inspired by the UNI CEI EN ISO 50001 standard[45], aimed at a structured management of significant consumption generated by the office buildings, technological sites and the company car fleet, under the guidance of the company Energy Manager. The Energy Management System has contributed 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 has allowed 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.

The Management System also constitutes an additional 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, a **Carbon Footprint** reduction plan has been launched based on the growth objectives of the company's business plan: energy efficiency measures, the purchase of energy from renewable sources and emission offsetting projects are just some of the initiatives that are and will be implemented by Open Fiber, the results of which will be constantly monitored and updated to ensure accuracy.

Energy performance improvements started in 2021 and are nearing completion; these are:

- the replacement of traditional lighting fixtures with LED technology for the Rome headquarters;
- the application of solar control films on the glass surfaces of the façades exposed to the SOUTH and EAST of the Milan headquarters, which will lead to a reduction in energy requirements determined by the reduction of the contributions for summer air-conditioning, cooling and ventilation;
- the installation of a photovoltaic electricity production system for the Settimo Milanese technological site.

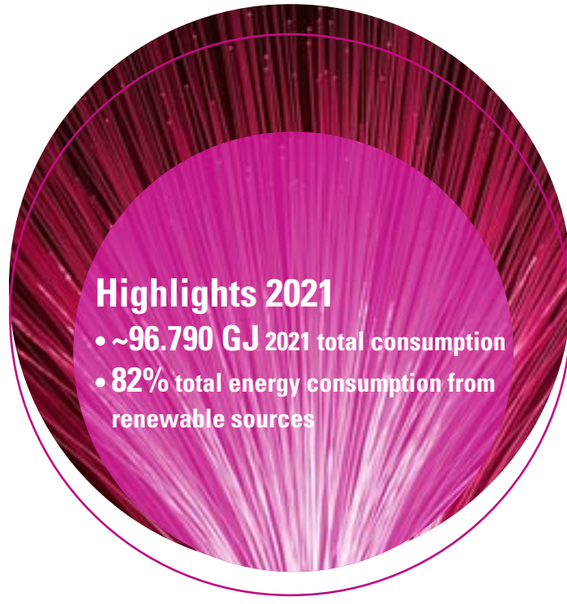
Open Fiber is aware that the first step towards effective management of energy resources is monitoring. For this reason, the company has provided for the integration of a monitoring system based on the digital technology of the Internet of Things (IoT) in the most energy-consuming technological sites and in the Rome and Milan offices, which will enable the collection and management of the company's energy consumption data, extending the current logic of data remotisation through the installation of IoT field instruments and through an integration of the monitoring architecture with dedicated business intelligence software, capable of automatically acquiring and processing the data, analysing the information and producing ad hoc reports.

For the year 2022, the energy plan foresees further actions including:

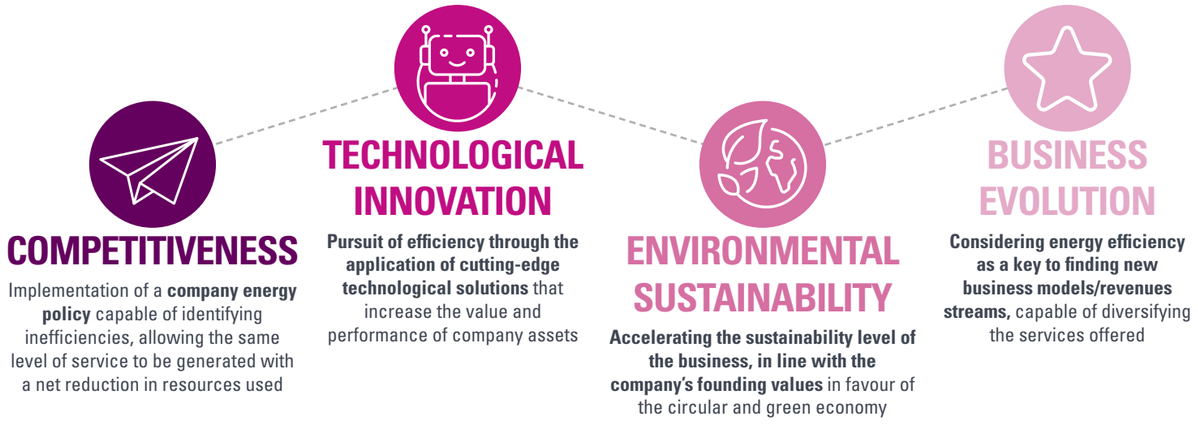
- the analysis of the quality of the distribution of the electricity network and possible corrective actions for the Rome office through the installation of a power quality system, i.e. stabilisers, capable of minimising the difference in voltage supplied and absorbed by the users, generating a positive impact on the quality of the absorbed power, from which energy savings will result;
- the installation of a photovoltaic power generation plant at the Rome headquarters;
- the replacement of traditional technology lighting fixtures with LED technology and the installation of a photovoltaic renewable energy power plant at the Milan headquarters.

Energy performances

Open Fiber's main energy consumption can be attributed to the use of electricity for company offices and technological sites (around 84% of total energy consumed), the consumption of diesel and petrol for the company car fleet (around 13%) and the consumption of methane gas for heating offices (around 3%). With reference to electricity consumption, in 2021 Open Fiber reached a quota of approximately 22,100 MWh (about 79,580 GJ)



The Pillars of the Open Fiber Energy Management System



[44] Open Fiber's Integrated Management System was certified according to the UNI EN ISO 14001 standard in the year 2020.
[45] Energy Management Systems - Requirements and usage guidelines.

of energy from **renewable sources** (through the purchase of Guarantees of Origin)[46], or 82% of the total energy consumed. The Company has recorded a growth in terms of the number of connected real estate units (which will reach about 13.5 million in 2021 compared to about 10.5 million in 2020), 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 45%).

Open Fiber measures its efficiency through energy intensity (defined as energy consumed per connected real estate unit), which in 2021 was 7.2.

Greenhouse Gas Emissions

Greenhouse gas emissions generated by Open Fiber are mainly related to the consumption of electricity from non-renewable sources (so-called indirect emissions - Scope 2) and to those of fuels used for heating and transport (so-called direct emissions - Scope 1). In addition, greenhouse gas leaks from air conditioning systems (i.e., HFC hydrofluorocarbons) have been considered and converted into CO_2 equivalent tonnes.

For the classification of emissions, the Company 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).

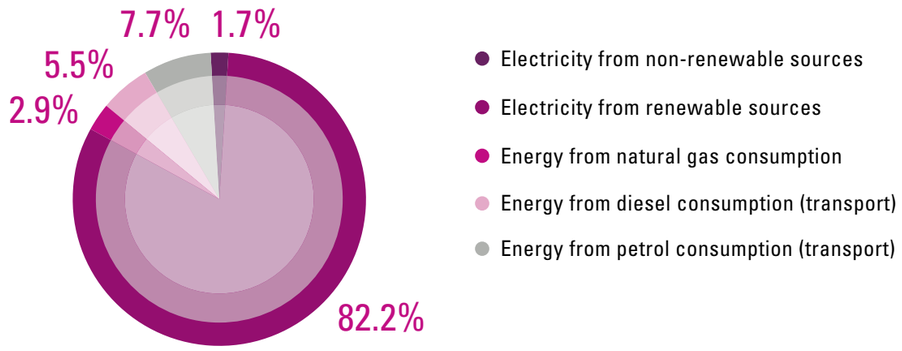
Scope 1 emissions are those resulting mainly from combustion in plants, boilers and company vehicles. To these Open Fiber has added emissions due to gas leaks from air conditioning systems, appropriately converted through the application of the Global Warming Potential (GWP) associated with different refrigerant gases and published by IPCC (Intergovernmental Panel on Climate Change)[47].

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

Highlights 2021

- **~0,11 $kgCO_2eq$ per Real Estate Unit connected in 2021**
- **-75% reduction in emissions intensity (2021 vs 2020)**

Energy cosumption within the organisation



302-1: ENERGY CONSUMPTION WITHIN THE ORGANISATION

Energy consumption	UoM	2019	2020	2021
Electricity consumption from non-renewable sources	GJ	40,904.8	29,767.4	1,624.1
Electricity consumption from renewable sources*	GJ	-	26,640.1	79,582.3
Energy consumption from natural gas consumption	GJ	3,496.7	2,581.6	2,786.8
Energy consumption from (transport) diesel consumption	GJ	8,785.9	5,025.7	5,379.2
Energy consumption from (transport) petrol consumption	GJ	2,772.1	2,797.8	7,418.6
Total energy consumption	**GJ**	**55,959.5**	**66,812.6**	**96,791.0**

302-3: ENERGY INTENSITY

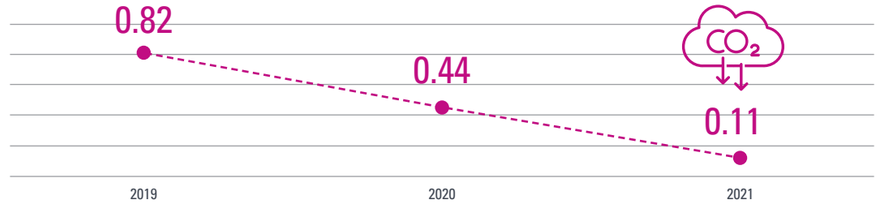
Description	U.M.	2019	2020	2021
Total energy consumption	GJ	55,959.5	66,812.6	96,791.0
Energy intensity	**MJ/UI**	**7.0**	**6.3**	**7.2**

[46] 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.

305-4: GHG EMISSIONS INTENSITY (SCOPE 1 + SCOPE 2 – MARKET BASED)

Description	U.M.	2019	2020	2021
Scope 1 Emissions	ton.CO_2eq	1,234.4	788.4	1,270.1
Scope 2 Emissions – Market based	ton.CO_2eq	5,293.6	3,852.3	206.9
GHG Emissions (Scope 1 + Scope 2 - Market based)	ton.CO_2eq	6,528.1	4,640.7	1,477.0
GHG emissions intensity ratio	**kg.CO_2eq/UI**	**0.82**	**0.44**	**0.11**

Trend of GHG emissions intensity per connected real estate units ($kgCO_2eq$/REU)



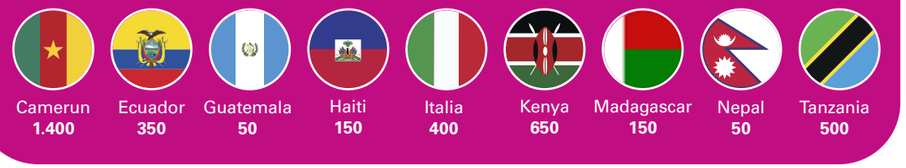
[47] Intergovernmental Panel on Climate Change - IPCC Sixth Assessment Report, 2021 (AR6).

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 3,700 trees have been planted in 9 countries (Italy, Cameroon, Ecuador, Guatemala, Haiti, Kenya, Madagascar, Nepal and Tanzania), leading to the offsetting of over 570 tons of CO_2.

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



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_2eq. per connected real estate unit).

3.4.4 Impacts of Smart Working on Mobility

Urban mobility is one of the main topics of interest for institutions and companies, as it plays a primary role in both health and air pollution. Indeed, 'soft' mobility helps to define a state of wellbeing and psycho-physical balance for the individual - as supported by the World Health Organisation - and has an impact on environmental protection as it is able to reduce air pollutants, which in Italy alone cause 80,000 deaths per year[48].

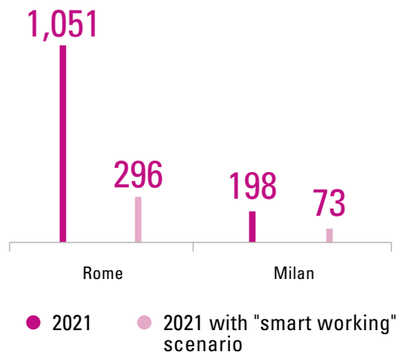
When defining the **Home-Work Commuting Plan**[49], Open Fiber estimated the CO_2 emissions generated by the journeys of its employees working in the two main locations, Rome and Milan, by comparing them to the actual number of working days of employees at the locations. Thanks to the encouragement of Smart Working, also as a measure to contain the spread of COVID-19, a significant reduction in emissions due to employees' home-work journeys was recorded:

- for **Rome** headquarters, CO_2 emissions actually produced are approximately 296 tons/year compared to 1,051 tons/year (emission value if Smart Working had not been set up), **saving 755 tons/year of CO_2**;
- for **Milan** headquarters, CO_2 emissions actually produced are 73 tons/year compared to 198 tons/year (emission value if Smart Working had not been set up), **saving 125 tons/year of CO_2**.

[48] Data reported by the World Health Organisation.

[49] The Home-Work Commuting Plan was developed with the support of a specialised transport engineering company working in the field of sustainable mobility and Corporate Welfare.

Total Emissions (tonCO2/year)
Rome and Milan offices
Estimated emissions for the year 2021
in the "in office" scenario
and "Smart Working" scenario



3.5 VALUE FOR THE PEOPLE

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.

The infrastructure that the company is deploying in Italy enables innovative services that promote equality between users, in terms of access to resources and cultural and health services.

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 Distance Learning (DAD);
- the progressive wiring of **hospitals** to make them 'hyper-connected' and the enabling of telemedicine services;
- a network of **partnerships** with other entities, aimed at generating innovation and exchanging know-how, in line with the Company's commitment to contribute to the dissemination of culture and initiatives aimed at improving citizens' living conditions. One example is empowerment initiatives, such as the partnership with Ortygia Business School to support the YEP (Young Women Empowerment Program), now in its second year, whose aim is to provide mentoring for female students in southern Italy and to enhance female talent.

3.5.1 Education plan: Connected Schools

According to a study conducted by Save the Children in 2021, Italy, already in the pre-pandemic period, ranked among the countries with the highest number of children at risk of poverty and social exclusion, i.e., children and teenagers living in households with an income below 60% of the national average level. The COVID-19 emergency has accentuated this phenomenon and to date there has been an increase of 209,000 children and adolescents

living in this condition, reaching a number that corresponds to 13.6% of the total number of children and adolescents in Italy.

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 skills for all.

Schools have had to come to terms with new teaching methods - such as Distance Learning - and all the consequences they have entailed. The problem of the digital divide also came back to the forefront because of the new digitalised systems for disseminating knowledge and education, which constituted a barrier for those who, at that time, did not have access to a fast connection or did 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 and in continuity with the activities already started before the pandemic, including the connection of schools. In 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.

In 2021, more than 14,100 schools throughout Italy will have been reached and will now be able to connect to FTTH fibre optics and enjoy an ultra-fast connection. A large part of the schools reached, around 8,700, are part of the "Piano Scuole" tender, launched by the Ministry of Economic Development 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 fibre optic connection at up to 1 Giga per second free of charge for a period of 5 years.

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 and 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.

#GOODSTORIES

Faster fiber and a safer web. Racing Italy - L'Aquila Connected School

The deans of two high schools in the Marche and Abruzzo regions talked about how pupils' lives have changed for the better thanks to the arrival of Ultra Broadband in classrooms. The digitalisation of schools, in fact, enriches traditional teaching programmes with supplementary or extracurricular activities, including workshops, webinars and online exercises.

Lecce sets a record: 12 schools wired in 5 days

Streamlining bureaucracy and working in synergy with local administrations can bring significant results: this is what Open Fiber has done in Lecce, where **12 schools in the municipality were reached in just five days**.

The municipal councillor for public works in the city of Lecce describes the Open Fiber experience in his city, starting from the difficult initial situation: "*We have streamlined bureaucracy to the point of eliminating it. A very quick but accurate inspection was carried out, school by school, and the construction sites were immediately activated. It is the task of the public administration to enable the schools and the companies that have to carry out the work to operate quickly. The bureaucratic process, when it comes to providing primary and essential services, must be as streamlined as possible*".

Although many schools started experimenting with IT back in the 1990s, the technologies and tools available have changed a great deal over time. Progress, especially in recent years, has advanced almost exponentially. Interactive whiteboards, interactive labs and electronic registers have become the norm, leading schools to be increasingly demanding in terms of equipment and connections. Ultra-fast fibre-optic connections are now a necessity and will probably continue to support teachers and students throughout Italy in the future. Whether at school or at home, digital access is the main tool for ensuring equal opportunities for all in school education.

As a result of the important results achieved, the municipality also obtained additional funding to bring fibre to the grey and white areas, i.e., the suburbs.

Emilia-Romagna: the first school at national level to exploit the capillary FTTH network of Open Fiber, activated by Lepida and Jolanda di Savoia

In Jolanda di Savoia (Ferrara), Lepida, the in-house company of the Emilia-Romagna Region that deals with the development of telecommunications infrastructure of regional public bodies, has activated ultra-broadband connectivity in the first school covered by the new agreement, signed at the end of 2020 with MiSE, the Ministry of Economic Development, the Region and Infratel. Taking advantage of the fibre-optic network built by Open Fiber in the Ferrara municipality, which connects homes, businesses and even the offices of the Public Administration, Lepida has indeed installed dedicated equipment to connect the Alessandro Manzoni School Institute and the Municipal Library, which from today can therefore have an infrastructure capable of reaching a symmetrical surfing speed of 1 Gigabit per second (scalable up to 10 Gigabit). There are already 1,300 primary and secondary schools connected to Ultra Broadband by Lepida, more than half of the total number of schools in Emilia-Romagna, and the remaining schools will soon be reached thanks to the infrastructure created by Open Fiber as part of the Infratel Ultra-wideband Plan.

3.5.2 Telemedicine: innovative healthcare services

In recent years, **telemedicine** has become increasingly widespread in national and global policies. Already in 2016, the WHO, in its

"Global diffusion of e-health", 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 outbreak of COVID-19 has focused attention on the need to streamline and speed up national healthcare and to protect the health of both doctor and patient while facilitating their interaction.

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 fibre, 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.

New telemedicine services are also getting a positive response from users: according to a 2020 report published by Stada[50], Italians are among the most enthusiastic in Europe about the digital transformation of medical examinations and consultations, as well as the adoption of therapy monitoring applications.

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 fibre 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 fibre optic network (e.g. analyses requiring the simultaneous interrogation of several data items).

For the year 2021, thanks to the support of the Ultra Broadband optical fiber network offered by Open Fiber, more than 1,000 remote visits have been made, an important service considering the ongoing pandemic.

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.

#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.

[50] Stada. (2020). STADA Health Report 2020 –Do All Roads Lead to Health? How Europe Moves Towards the Future.

3.5.3 Virtual reality for psychological and physical wellbeing

Not only schools, health and work: another innovation brought about by optical fiber is virtual reality, which has proved to be a valuable ally towards psychological and physical well-being. In particular, its use to support therapies for managing anxiety and depression is one of the most virtuous forms of support for people. The COVID-19 pandemic has highlighted the need to create a communicative society, capable of coping with high levels of general stress and able to develop direct and flexible forms of help.

Therapeutic applications of these technologies have existed for some time, albeit in an experimental form, often little known. An interesting use of virtual reality is for progressive exposure in the treatment of certain forms of anxiety (e.g., social anxiety) and phobia (e.g. arachnophobia) that are dealt with by the patient within a safe and protected environment, learning step by step to manage their triggers. In addition, there are plans to treat syndromes such as post-traumatic stress disorder or obsessive-compulsive disorder. A paper by the Institute for Creative Technology at the University of Southern California details a project to interact veteran soldiers with virtual environments to learn how to safely handle situations that generate stress from post-traumatic disorder. Remarkably, this study dates back to 2005: the progress made by virtual reality since then has been so impressive that it is natural to think of possible current applications.

The great advantage of interacting with a virtual environment is its immersiveness, i.e. its ability to feel real. Without the screen as a barrier, it is easier to trick the brain into believing for a few minutes that it is somewhere else. This makes the experience much more tangible, effective and satisfying, all in complete safety.

Furthermore, in our country there is a self-help project that makes use of virtual reality: Covid Feel Good[51]. This is a seven-day immersive experience designed to calm the mind, reduce stress and alleviate anxiety. To take advantage of it, you need a virtual reality visor or helmet. By connecting to a specific link, you can explore a place called 'the secret garden' and work on a different objective each day.

3.5.4 Partnership and innovation in support of culture

Partnership with academia

In 2021 too, Open Fiber confirmed its role as an active Employer at the **main Italian academic institutions**, thanks to a virtuous circuit of **ad hoc Partnerships**. In 2021, partnerships were set up for six different Masters courses, with both a technical/engineering and soft skills orientation. The activities carried out involved co-designing the teaching programme, classroom work and presentations, internships, assessments, project work and scholarships.

It is also worth mentioning yet another contribution to the world of scientific research through the **funding of a scholarship for the 1st National Industrial PhD in Artificial Intelligence** promoted by the **University of Pisa**. This three-year PhD is aimed at increasing specific skills relating to the use of data science and big data techniques, which are fundamental in helping to make Open Fiber a data-driven organisation.

As part of the initiatives of the ***Sistema Scuola Impresa***, **school enterprise system** - the initiative that has the dual aim of stimulating young people to discover their talents and supporting schools in their improvement process - Open Fiber has joined the two-year project "Teaching Revolution" with the aim of supporting the development of the teaching staff of schools, responsible for the training of young students, the professionals of the future. More specifically, the programme envisages the creation of an 'educational alliance', in the sense of a profitable and effective relationship between the company and the teaching staff, aimed at mutual 'contamination' and listening to their respective needs, and the development of peer mentoring and training courses for professors with a view to upskilling and reskilling to meet the needs of the labour market.

Open Fiber and ELIS: "Alleanza per l'Alternanza - Alliance for Alternation"

Five cities and five schools, 125 students involved, 10 trade teachers from different professional fields, 20 hours of meetings held also remotely. This is the final outcome of "***Alleanza per l'Alternanza*** **- Alliance for Alternation**", the training project promoted by ELIS and Open Fiber, which has reached the end of its fourth edition, carried out in a totally virtual mode due to the Coronavirus emergency. The lockdown did not stop the extracurricular school activities, demonstrating the importance of the topics proposed by the ELIS - Open Fiber project: cutting-edge technology, connectivity to

[51] https://www.covidfeelgood.com/il-protocollo-di-auto-aiuto-versione-italiana

its maximum potential, network architectures and infrastructures, current and future employment opportunities offered by the telecommunications industry. From the IIS Galvani in Milan to the IIS Pacinotti-Archimede in Rome, from the ITI Ferraris di Scampia in Naples to the IIS Italo Calvino in Genoa and to the IISS G. Marconi-Hack in Bari, the fourth and fifth grade students participated enthusiastically in the meetings during which they could ask questions and interact with their interlocutors. 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.

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 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. Indeed, according to the DESI 2021 index, in Italy only 42% of people aged between 16 and 74 have at least basic digital skills (56% in the European Union) and only 22% have digital skills that are above basic skills (31% in the European Union).

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 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 analysing 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.

3.6 VALUE FOR THE COMPANIES

Open Fiber aims to contribute to the growth of the Country, measuring itself against the challenge posed by the digital divide. For this reason, day after day, it builds and implements an ultra-fast optical fiber network, an enabling factor capable of favouring the development of digitization and innovation, essential elements for the development not only of the economic system, but above all of the Small and Medium-sized Enterprises (SMEs) in Italy that often suffer from international competition caused by a delay from a technological point of view.

Numbers and Digitization Status of SMEs in Italy

SMEs represent the backbone of the entire national production system, in terms of number, turnover and employment of the workforce. They make up 4.86% of the Italian business fabric and are responsible for 41% of the entire turnover generated in Italy, 33% of all employees in the private sector and 38% of the Country's added value (*). The National Recovery and Resilience Plan (*Piano Nazionale di Ripresa e Resilienza*; PNRR) provides for a series of diversified interventions in support of Small and Medium-sized Enterprises, since promoting and enhancing the growth and resilience of SMEs automatically means strengthening the national industrial system.

Trends in digital transformation have imposed tough technological, organizational and cultural challenges on businesses of all sizes. Digital skills and openness to change are the key to overcoming them, especially for Italian SMEs.

(*) Source: Osservatori.net-Digital Innovation. SMEs in the Italian entrepreneurial ecosystem: a comparison with the EU (osservatori.net) and SMEs: significance, numbers and innovation of small and medium-sized enterprises (osservatori.net).

A high-performance infrastructure, innovative services, a fast and immediate digitization process: these are the elements on which Open Fiber focuses, able to feed, support and enhance the resilience of Italian SMEs, the true economic fabric of the Country.

3.6.1 The local Induced employment generated

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. In 2021 alone, over 230 third-party companies were involved, including suppliers of specific equipment for FWA, radio links, technical-professional services and restoration activities.

The installation of the Ultra-Wide Band 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

Highlights

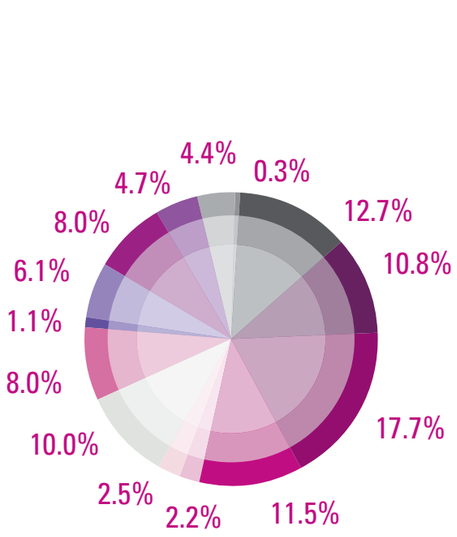
- Over **230 suppliers** involved in the construction of the optical fiber infrastructure
- **+ 37 jobs** generated on average per operator *
- **70 courses provided** by Open Fiber for specialized workers

* results emerged following a survey among Telco operators on the impacts of the collaboration with Open Fiber.

employment of skilled workers (joiners, installers and designers). Precisely for these figures, Open Fiber has provided 70 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 2021, the external workforce mobilized[52] in infrastructure construction activities amounted to over 7,300, of which approximately 59% engaged in Creation activities and approximately 41% in Delivery activities.

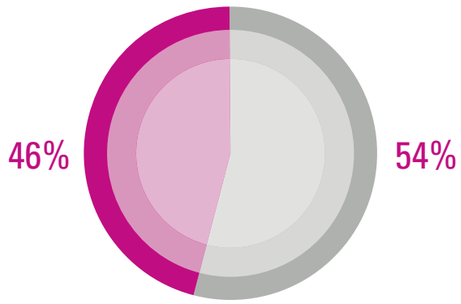
Distribution of companies by type of service



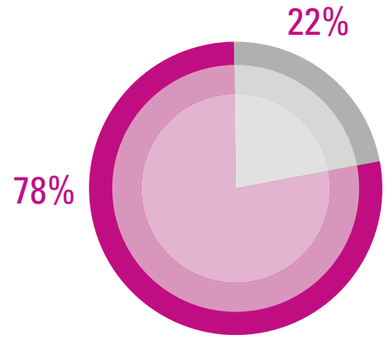
- Restoration work
- Technical-professional services
- Works for the construction of telecommunication infrastructures
- Supply of Optical Frames Cabinets and Molds
- Supply of FWA equipment and radio links
- Supply of active access network equipment and transport equipment
- Supply of Shelter Structures Optical Fiber Equipment
- Optical Supplies Fiber Optic Accessories
- Supply of network monitoring systems - OTDR
- Monotube and Mini tube supply
- Optical Supplies Cables
- Manhole covers supplied
- Prefabricated manholes supply
- Archaeological Surveillance and Preventive Evaluation of Archaeological Interest

[52] With reference to the companies operating in Creation activities, the average of the FTEs between May and December 2021 was considered.

FTE Cluster A&B



FTE Cluster C&D



- Delivery
- Creation

In a particularly critical historical moment due to the spread of the pandemic, Open Fiber has guaranteed continuity of the operations of numerous companies, involving them in the optical fiber laying activities and thus helping to create the conditions to support the supply of products and services, as well as the creation of new jobs.

+7,300 resources
External workforce mobilized in Creation and Delivery

8 h
Guaranteed daily on site

27 €
Average hourly cost of a construction worker (according to ministerial

220
Working days in a year

350 Million €
Employment generated on average in one year

The fiber of Open Fiber in the industrial area of Bari

Since the end of summer 2021, Open Fiber has been carrying out the project for the construction of the fiber in the industrial area of Bari, precisely in the Asi area, one of the most important production companies in our country which includes about 1,100 companies. The project requires collaboration between Open Fiber and local authorities such as Corsorzio ASI and the representatives of the Municipalities that are part of the Consortium.

Most of the Bari companies still use a hybrid copper-fiber connectivity system, the FTTC (Fiber To The Cabinet), which involves numerous problems related to connection speed that strongly affect the performance of companies. The hybrid system is subject to external factors such as temperature, humidity, physical distance from the cabinet to the user which slow down the connection speed with negative consequences on the performance of daily activities and production processes. All problems that do not arise with FTTH optical fiber, since it is a technology that is not affected by external events, and which ensures high reliability and high performance.

The ultra-fast fiber of Open Fiber is already a reality in the Apulian territory with 500,000 homes already wired for an investment of 200 million euros. In particular, in Bari there are 192,000 real estate units covered by fiber for an investment of 67 million. Beyond the city of Bari, there are large centres such as Monopoli, Corato, Molfetta and Barletta reached and almost entirely covered by fiber.

Open Fiber and the impact on TelCo operators

In 2021, Open Fiber conducted a **survey** to analyse the **impacts generated** by its activities on the sector of **TelCo operators**[53], focusing on the following **aspects**:

- the main categories of users who benefit from Ultra-Wide Band;
- the development of TelCo operators in the area thanks to Open Fiber;
- the benefits obtained from the collaboration with Open Fiber;
- satisfaction with the services provided by the Company.

The questionnaire was administered to a representative sample of TelCo operators with about 270 employees on average. Among the operators who responded to the survey, 41% purchase an active service from Open Fiber and the remaining 59% both an active and passive service; 82% trade on a national scale and 18% on a local scale.

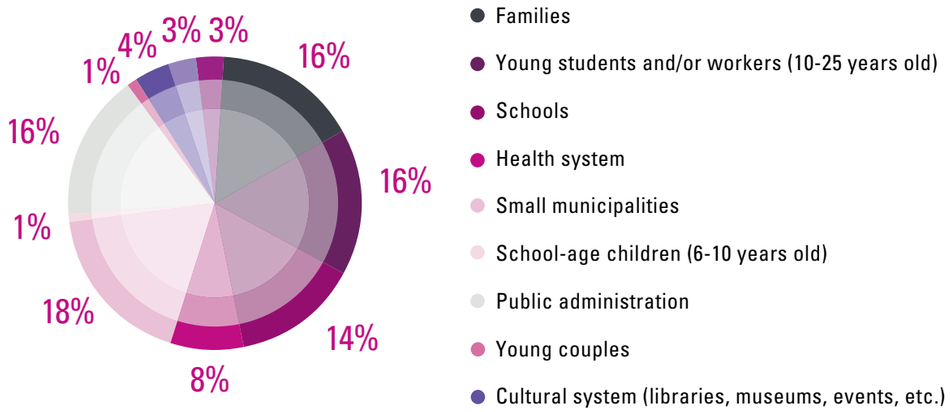
The results of the survey showed that, according to the operators, there are many categories of users who have benefited from the installation of the Ultra-Wide Band optical fiber network. In particular, among the major beneficiaries are small municipalities, families, students and/or young workers (aged between 10 and 25), the Public Administration, schools and the health system.

For many operators, Open Fiber intervention has catalysed a greater presence in the area: the results showed that the process of deploying the Ultra-Wide Band optical fiber network favours the development of the Country, mainly in economic terms and overcoming the digital divide.

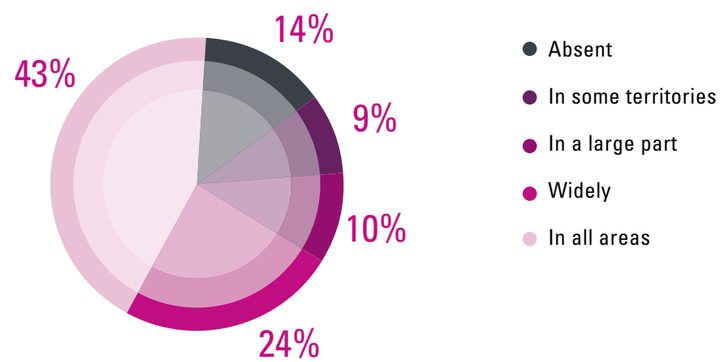
As regards the benefits obtained from the collaboration with Open Fiber, the survey highlights that two thirds of operators have increased their workforce by virtue of this ratio, hiring on average 37 new resources each, allowing for a growth in the size of the business. However, the most important added value was an improvement in the quality of the service: in fact, the operators showed a high degree of satisfaction with the speed of the

[53] For more details, see the news "Il valore della connettività e l'impatto sul territorio: Open Fiber live su Il Sole 24 Ore" (literally "The value of connectivity and the impact on the territory: Open Fiber live - Il Sole 24 Ore") https://openfiber.it/media/news/fibra-ottica-sviluppo-paese/

Users who have benefited most from Ultra Broadband



Previous presence of the operator on the territory



#GOODSTORIES

Mountains workers in Valle d'Aosta
In Val d'Aosta, Open Fiber has created an Ultra Broadband network that guarantees innovative services available on the web at a surfing speed of up to 10 Gigabits per second and has planned to connect 69 municipalities reaching a total of 60,000 by 2022. Open Fiber, with the laying of the infrastructure in the Val d'Aosta Region, has guaranteed the resumption of smart working, and not only that, within the territory. There are many people who testify to the effective usefulness of the ultra-fast connection: Roberto, 24, an engineer and town councillor in Bard (AO), works for an IT company offering computer services and is, in his spare time, a gamer; Jarno is a hotelier in Ayas and with FTTH fibre optics he can provide his customers with a fast and stable connection; Sunday is a 20-year-old student from Ayas who creates websites, where the OF network ensures that all content loads smoothly; Monica is a resident of Ayas who has a household of 6 people who use the ultra-fast network connectivity on a daily basis and at the same time.

An island in the heart of Catania to surf at 10 gigabits per second
The largest island in the Mediterranean where to grow and train: the new hub dedicated to south working, called "Isola", is located in Catania, in the prestigious Palazzo Biscari. The "container" created to gather the startups of the South, thanks to Open Fiber, benefits from the first FTTH connection up to 10 Gbps in Italy. Isola is an accelerator that offers a coworking space and training courses with a vocation for territorial and social impact, created in a building that, over the centuries, has seen its functions adapted. An idea that fits perfectly with Isola's mission: to rewrite the concept of social and cultural innovation, starting from one of the most culturally imbued places in Italy.

Aeolian Islands: a natural heaven accessible by gigabit and suitable for smart workers
Working remotely with the best possible technology while admiring the breathtaking views captured by Massimo Troisi's "The Postman"? In Salina you can, thanks to the optical fiber infrastructure created by Open Fiber as part of the Ultra Broadband Plan. The latest generation fiber is available to residents, accommodation facilities and tourists reaching this "gem" set in the southern Tyrrhenian Sea. In Malfa, in particular, there are many workers who have taken advantage of this innovation to move there permanently and completely change their lifestyle. This is the case, for example, of Clara, an actress and theatre director from Paris, who can carry out her professional commitments without moving from the Aeolian Islands, where her family has settled, or Elena, a translator and wine operator who has left Rome.

connection and the stability of the Open Fiber network signal.

3.6.2 Smart Working

In recent years, even following the health emergency, the need and desire of people to carry out their work partially or totally remotely has spread considerably. In many realities, however, there is still a difficulty in accessing a stable and fast Internet connection, both among individuals and companies.

The Nomisma-CRIF report highlights interesting data that show that not all companies and organizations have yet structured themselves to support their collaborators with tools for remote work: in fact, only a little more than 1 in 3 workers (35%) have a company computer. Italy, in terms of Smart Working or even simply "working from home" has always arrived late compared to other European countries, even compared to comparable countries such as France and Spain, as shown by Eurostat data which display Italian performances beyond below the EU average in terms of the percentage of employees who work from home.

The pandemic has forced an acceleration in the transition to new flexible working methods, resulting in a change in the habits of everyone, both in large cities and in small towns. However, the progressive spread of digitalisation has also highlighted the problems associated with underperforming connections and the spread of the digital divide, present above all in 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.

South Working

Spreading the digital culture among citizens and administrators. Supporting initiatives in the public and private sectors aimed at encouraging agile work, especially in less urbanized and mountain areas. Sharing a mapping strategy that translates into a "compass" for all those workers who intend to operate 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-Wide Band 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.

South Working® is a non-profit association of young people animated by the desire to promote and study a flexible working model that allows you to work remotely from where you want, regardless of the highly urbanized contexts historically characterized by the presence of technological infrastructures, with the aim of reducing the current economic, social and territorial gaps.

"The collaboration between Open Fiber and South Working® – in the words of the Vice President of the Association - will be strategic for spreading the model of agile work and

fighting the phenomenon of the digital divide between infrastructurally different areas of the Country. The future of work passes from sustainability and Ultra-Wide Band, with a view to ever greater accessibility, for concrete action on the territories and for local communities".

The path between South Working® and Open Fiber is a path also started thanks to the shared desire to analyse data, collect studies and best practices in order to guarantee a broader understanding of the growing phenomenon of remote work. As many as 6.58 million Italians experienced this form of employment during the lockdown. In particular, SVIMEZ[54], in its 2020 report in collaboration with the South Working®, association, calculated that in 2020 there were already approximately 145,000 workers who have experienced South Working®. The Smart Working Observatory of the School of Management of the Polytechnic University of Milan took a picture of the situation, which also recorded a decline in smart workers (5.06 million) in September 2020 in the face of the uncertainties and difficulties related to the reopening of the offices of work. However, the numbers will remain important: at the end of the emergency, it is estimated that smart workers, fully or at least partially engaged in remote work, will amount to 5.35 million, a figure tenfold compared to about 570 thousand workers before the pandemic.

3.6.3 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. 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, ensured by FTTH technology, and the reliability of the 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 Fiber and Sky: a fast connection for all

In 2021, Open Fiber strengthened and extended its partnership with Sky, also reaching the White Areas, i.e., the small municipalities and rural areas where the company won public tenders, bringing a service previously limited to large cities. Thanks to this extension of coverage, Sky Italia's ultra-wideband service now reaches more than 2,600 municipalities and almost two-thirds of households in the country and, after more than tripling its coverage in the first months of 2021, is expanding its reach to some of Italy's main regions including Piedmont, Veneto, Sicily and Lombardy.

The advantage of the partnership lies in the quality of the connection, which is guaranteed by Sky's newly built core fiber network infrastructure, which is able to make the most of the access network provided by Open Fiber, and by the Sky Wi-Fi Hub, which distributes the signal to homes in a stable and homogeneous manner thanks to the innovative technology developed by Comcast[55].

Even in small municipalities it was therefore possible to offer a high-performance connection capable of allowing everyone to make the best use of all connected devices, also simultaneously: TVs, computers, tablets, smartphones, game consoles and any other device, thus having all the bandwidth needed to download content, see them live or play online without problems, even at peak times.

Open Fiber and PostePay: bringing the network to the whole national territory

In 2020, Open Fiber and PostePay, the Poste Italiane Group's subsidiary that markets telecommunications services under the Poste Mobile brand, signed a strategic agreement to bring Open Fiber's FTTH network to the entire national territory. This partnership confirms the market's appreciation for an extremely high-performance infrastructure, capable of delivering the services the country needs, exploiting the capillary network of post offices to bring services everywhere, particularly to small towns that suffer most from the digital divide. More specifically, Poste's capillary network will allow to:

- speed up the spread of ultrabroadband services in over 19 million real estate units, i.e., 271 cities and over 7,000 small and medium-sized municipalities in the so-called White Areas, and bridge the digital divide in Italy;
- market the ultra-wideband service in the 13,000 post offices in all Italian municipalities, representing a strategic opportunity to bring optical fiber to our country extensively.

#GOODSTORIES

The Centanni winery online with Fiber

Thanks to Open Fiber Ultra-Wide Band connection, more and more virtuous entrepreneurial realities are emerging in the small villages of Italy.

The project for the wiring of small municipalities carried out by Open Fiber has also reached Montefiore dell'Aso, a small village in the province of Ascoli Piceno, where the Centanni winery has been producing wine for more than fifty years. In recent years, the company has decided to innovate by adopting digital solutions in response to the new needs of consumers who prefer to buy more and more online. Thanks to the wiring of the municipality and the Open Fiber Ultra-Wide Band connection that offers the possibility of having fast connections that allow you to connect multiple devices, the company has obtained greater online traceability from customers, suppliers and restaurateurs and has thus been able to change its approach to the market becoming more digital and social, so much so that it is able to make itself known more abroad as well.

[54] Association for the development of industry in the South.

[55] Comcast Corporation is the largest cable operator in the United States.

Open Fiber and Aruba

In 2021, Open Fiber signed a strategic agreement with Aruba, Italy's largest cloud provider and a leader in data centre services, web hosting, email, PEC and domain registration, to bring fiber to businesses and homes. The all-Italian partnership allows Aruba to offer optical fiber connections based on Open Fiber's FTTH network, capable of reaching speeds of 1 Gbps to benefit from the best performance in accessing all the services, resources and sites of the millions of consumer and business customers hosted in the company's Data Centers.

Open Fiber and Wind 3: expand the offering to bring value to enterprise and business customers

Open Fiber and WINDTRE, Italy's number one mobile operator and one of the leading alternative operators in fixed connectivity, strengthened their partnership in 2021 in order to offer ultra high performance ultra-wideband services also to enterprise and business customers. The new agreement, which follows the one already in force for the marketing of Ultra-Wideband FTTH services in over 7,000 small towns and 271 major Italian cities, allows WINDTRE to provide businesses and Public Administration with innovative solutions featuring guaranteed symmetrical bandwidth and surfing speeds of up to 10 Gigabits per second, minimum latency times and the highest security standards.

The offer is targeted at organisations and companies that need to exchange large amounts of data and also use cloud technologies to perform more effectively and efficiently.

This new opportunity represents a turning point for medium and large enterprises, both in providing advanced digital services to customers and in making their employees' work faster and easier, also remotely. In addition, state-of-the-art connectivity is essential to meet the needs of citizens who interact more and more often with institutions using digital services.

Open Fiber and Vetrya

In order to build a future in which new optical fiber technology can change the life of the country, in October 2021 Vetrya, an Italian group and renowned leader in the development of digital services, solutions and cloud computing services, launched Voola: a new national telecommunications operator offering optical fiber connections based on Open Fiber's FTTH network, capable of reaching up to 10 Gigabits per second. Within the development model of Vetrya, the creation of Voola allows to complete the offer for the digital transformation targeted to its customers, providing them with an additional and complementary service of ultra-wideband connectivity. Through Voola, citizens and companies, from small villages to big cities, will be able to benefit from the best performance of optical fiber connections, which allows for maximum speed of Internet connection and, at the same time, enables many Internet services, which represent Vetrya's core business.

Open Fiber and Confagricoltura: agriculture of the future

Since 2020, Confagricoltura and Open Fiber have had a partnership agreement with the aim of encouraging the spread of Ultra Broadband in Italian farms, through a series of initiatives that on the one hand can facilitate the implementation of the network, and on the other bring technological advantages to the sector, allowing farmers to take a further leap towards agriculture 4.0. The agreement takes on great relevance, also in relation to the COVID-19 health emergency, during which the strategic importance of digitalisation and the need to accelerate its development processes emerged, particularly in a sector such as the agri-food sector that has never stopped during the pandemic. Companies in the primary sector that produce, process and market their products, including through e-commerce channels, need to ensure their competitiveness in all conditions: an all-fibre network can guarantee the necessary stability, speed and capacity for data transmission. The agreement has been "virtually" extended to the end of 2021 thanks to the creation of HUB FARM, a 100% Confagricoltura company dedicated to innovation services for its members. The aim is also to initiate collaborations aimed at defining and disseminating guidelines and initiatives to overcome the digital divide by encouraging the spread of digital culture.

Open Fiber and Edoardo Garrone Foundation for start-ups in marginal areas

Supporting young businesses in inland areas thanks to ultra-wideband 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-wideband 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.

3.6.4 QKD (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, safety 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.

3.6.5 Memorandum of Understanding between Open Fiber and South Working

Spreading a 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 main points of the Memorandum of Understanding signed by **Open Fiber and South Working® - Lavorare dal Sud A.P.S.**, an agreement aimed at coordinating a programme of actions for the diffusion of Ultra Broadband in the national territory.

#GOODSTORIES

Pasticciotto 4.0 – Martinucci confectionery company becomes Puglia's first C&D user
The confectionery company Martinucci, in the industrial area of Presicce (Lecce), is the first company in Puglia to be connected to a public ultra-wideband optical fiber network as part of the "Ultra-wideband Strategic Plan", launched by the Ministry of Economic Development's in-house company "Infratel Italia", and implemented by the concessionaire Open Fiber under the supervision of the Puglia Region. Martinucci is building a new warehouse in the Cape of Leuca where it intends to transfer most of its production of pasticciotti, cakes and ice-creams. The company, which has more than 70 years of history and exports Salento delicacies to more than 30 countries around the world, will now be able to develop the innovation of its production processes through the best technology available on the market, the FTTH service, with connection speeds of up to "1 Gigabit" per second.

3.7 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 2021, the main initiatives in favour of the community concerned the themes of innovation, sustainability, digitalisation, support for local businesses and combating inequality.

Fifty-first United Nations International Earth Day

Open Fiber supported the United Nations' International **Earth Day** - in its 51st edition in 2021. This day brings with it a very important message: the protection of the environment and the entire ecosystem. The world needs sustainable development and Open Fiber is building a fibre optic internet network to make this need a reality.

The Multimedia Marathon entitled "One People One Planet", which took place on 22 April 2021 on the occasion of World Earth Day, was broadcast on a digital platform as a virtual place where all peoples could unite and confront each other. The initiative ended with a RAI prime time devoted entirely to all the topics discussed during the marathon.

Tevere Day

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

Sun & Sea

Open Fiber sponsored Teatro di Roma's innovative play Sun & Sea, which not only enhanced Italy's extraordinary cultural tradition but also promoted the theme of environmental sustainability.

Fiabaday

Open Fiber sponsored the 19th 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 eco-friendly water bottles

Open Fiber and the municipality of Trapani have started a collaboration aimed at the digital and sustainable development of the city, connecting with the fibre optic network about 24 thousand real estate units from the centre to the suburbs. Sharing the value of sustainability and environmental protection, they have also donated **2,500 eco-friendly water bottles** to the pupils of all schools in the Sicilian city.

The initiative aims to raise awareness among children and young people about respecting the environment, consuming water correctly and reducing the use of plastic.

Voler bene all'Italia

Legambiente, in collaboration with Symbola, a large promoting committee and the contribution of Open Fiber, organised webinars and events on the occasion of the 18th edition of **Voler Bene all'Italia** (Loving Italy), the initiative celebrating the strategic role of small municipalities in relaunching the Country System. Five virtuous experiences in the field of innovation were awarded which, from Calabria to Piedmont, combine the possibilities offered by new technologies with more sustainable tourism, urban regeneration projects, precision forestry and inclusive education models.

Open Fiber's commitment to the implementation of the ultra-wideband in the most marginal areas contributes to urban and social regeneration by creating the conditions for the repopulation of small municipalities, the development of services and the birth of new activities.

Open Fiber for Isola: FTTH connection up to 10 Gbps

In Sicily, in Catania, in the prestigious Palazzo Biscari, a new hub called 'Isola' has been created for start-ups in Southern Italy. A place dedicated to young talents where it is possible to take advantage of a coworking space and training courses with a vocation for innovation in terms of territorial and social impact.

The company's partners are numerous: Invitalia, the National Agency for the Attraction of Investments and Business Development owned by the Ministry of the Economy, which has always provided support for companies and the local area; prestigious schools such as the Tree School, born from the collaboration between Opinno, Manpower Group and UniCredit, which will offer training courses in the digital field, focusing on subjects such as artificial intelligence, coding, digital marketing and the cloud.

There are also the Community Partners, including: the ELIS consortium, a training centre for innovative projects and sustainable development activities for young people and professionals, which, with its SmartAlliance programme, will be welcoming the first innovators who will be experimenting with new ways of working in "Isola" from September; and South Working, a Social Promotion Association that promotes the possibility of agile working, particularly in the Southern Regions and inland areas.

Among the activities that will be carried out in the hub, a space will be dedicated to those with an inclusive vocation, such as the Re/Start programme, whose aim is to enhance the skills of disadvantaged people in order to reintegrate them into the labour market.

Open Fiber has always supported the growth and development of the Mezzogiorno and has contributed to the realisation of the Isola project, which has a strong impact on the territory from the point of view of social and cultural innovation. In particular, the company, in collaboration with Vodafone, has equipped "Isola" with a cutting-edge technology for Ultra Broadband connectivity, Xgs-Pon technology, which allows surfing at speeds of up to 10 Gbps. This is an innovative application, the result of an experiment launched over two years ago. It is the first time that a coworking space has had a stable Internet connection with this performance.

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 2021 it established a partnership with the Ortygia Business School Foundation, supporting the second edition of **YEP** (Young

Women Empowerment Program), a mentoring programme for female empowerment aimed at 100 female students enrolled in business and STEM faculties in the most important universities in Southern Italy. The aim of this training programme, whose objective is to combat gender inequality, is to enhance female talent by acquiring skills and tools to help them face the world of work with greater awareness.

According to Il Sole 24 Ore, female employment in Italy is experiencing a real recession, to the point that the term she-cession has already been coined. Following the COVID-19 emergency, out of 101 thousand new unemployed, 99 thousand are women. Moreover, out of the total number of applications for flexible working arrangements or part-time contracts requested by women with children, only 21% were granted. According to the newspaper, one woman in two has seen her economic situation worsen in the last year.

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.

Open Fiber at the Science and Technology Museum in Milan

Open Fiber participated in the **2021 Focus Live** event, the science and technology festival organised by the science magazine of the same name in Milan's Museum of Science and Technology.

The festival featured a series of meetings, debates and interactive experiences on the topics of science, technology and sustainability. Participants had the opportunity to visit more than 25 stands and laboratories, including one provided by the Company, where it was possible to observe a seismic platform aimed at demonstrating the advantages and benefits of fibre optics for monitoring the territory and in particular earthquakes, a tool that has proved very useful in combating the depopulation of small municipalities.

Open Fiber for Valorant tournament

Open Fiber took part as Connectivity Partner, providing a high performance and reliable connection, in the national finals of the latest edition of the **Red Bull Campus Clutch**, Valorant's worldwide tournament. The event saw the participation of 300 universities in over 50 countries.

Valorant is the most popular video game of the moment in which two teams compete on the field, one aiming to place and trigger a device, the other to prevent its detonation.

The Company, with its long-standing collaboration with Esport Empire and Red Bull, supports Italian gamers and pro-gamers. Gaming and in particular the Esport sector are experiencing a real rise not only abroad but also in Italy, with an increasing number of dedicated tournaments. Open Fiber's ultrabroadband network is the best solution to minimise lag and guarantee the most reliable performance when playing online with a transmission speed of up to 1 Gbps.

Fenix project

Fenix project, promoted by the Associazione Centro ELIS and co-financed by Fondazione Enel Cuore, is aimed at 20 minors and young adults - aged between 14 and 20 - undergoing measures restricting their personal freedom. The initiative combines psychological support for the young people with technical and professional training in line with the demands of the labour market, providing the beneficiaries with immediately usable skills that facilitate their integration into the labour market.

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. Social Media Managers, Marketing Managers and SEO Experts are just some of the fastest-growing professions towards which the young people selected will be oriented.

Open Fiber supports this project by offering curricular internships within the company.

"Ingenio al Femminile" degree dissertation award

"**Ingenio al Femminile**" is a project promoted by the CNI (Consiglio Nazionale Ingegneri, National Council of Engineers) with the aim of awarding prizes to recent graduates in STEM disciplines who have developed brilliant engineering dissertations on the theme of "Sustainability in all engineering sectors to achieve the goals of the 2030 Agenda", with particular reference to gender equality and the managerial role of women.

During a recent meeting at the CNI headquarters, the managers of "Ingenio al Femminile" and its partner Cesop presented the data of the first phase of the call to the companies supporting the project, including Open Fiber. A total of 185 applications were completed, of which 177 were accepted. As many as 40 of these were submitted by women graduates from La Sapienza University of Rome.

The authors of the best dissertations will receive 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.

2021 Race for the Cure

In 2021, Open Fiber was once again a partner of the **Race for the Cure**, which was held on the 10th of October. 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.

04

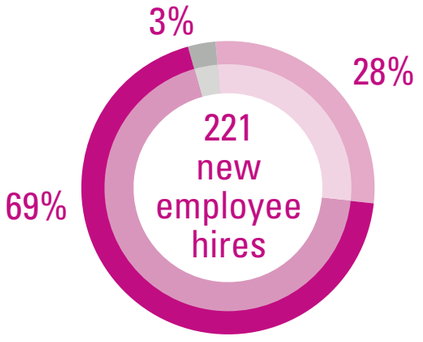
The Human Capital

4.1 OUR PEOPLE

Building the digital highway of the future step by step implies setting in motion and continuously maintaining a value chain made up not only of expertise, commitment and passion, but above all of people. Knowing how to face the challenges of the future means being ready and equipped with a "network" of skills, professionalism, talent, and researchers. Open Fiber has cared for and built its own network over time and today it represents its human capital.

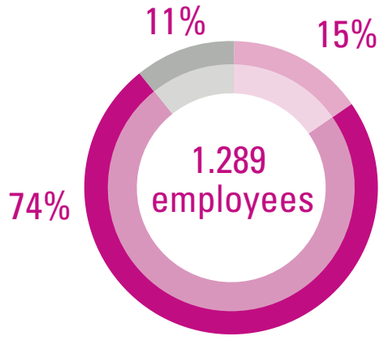
Every person is unique and Open Fiber guarantees training and professional growth paths, with a tailor-made approach, able to enhance and increase skills and abilities. The company proposes a 'model of excellence' which brings together the abilities, behaviours and skills of those who work within the organisation and merges them with the company culture, mission and values, so that everyone can express their potential, both professional and human. This model is applied to all employee development, training, assessment, and feedback processes: 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.

New employee hires - 2021



● < 30 years old ● Between 30 and 50 years old ● > 50 years old

Employees as of 31 December 2021



● < 30 years old ● Between 30 and 50 years old ● > 50 years old

In a year still significantly affected by the pandemic crisis, Open Fiber increased the Company's permanent employment levels, extensively adopting Smart Working models in order to guarantee both the maintenance of service levels, the safety of its workers and the continuity of initiatives for the management, training and development of people.

In 2021, Open Fiber team is made up of **1,289 employees** (increase by 12% compared to 2020), distributed across 20 offices in Italy and the Brussels headquarters, but mostly concentrated in the cities of Rome and Milan: women make up around 31% of the workforce and the majority of employees (74%) are in the 30-50 age group, followed by the under-30 age group (representing 15%).

4.1.1 Employer branding

The company values - Being pioneers, People and teams, Towards excellence, Beyond expectations - are the DNA that sets Open Fiber apart and drives the actions and work of the people and teams that take part in its mission. "**Open Fiber si diventa - You become Open Fiber**", the programme developed in 2020 aimed at building and spreading the company values, has now become a symbol of belonging and recognition of employees in the Company.

Since its establishment, Open Fiber has favoured a cutting-edge way of acting, adopting an unconventional and sustainable approach to people management and exploiting the potential of digital technology to identify and meet the needs of its people. 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 workplace 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 in 2021 and early 2022 it received again two important awards for its people management and development policies: **Top Employers Italia** - 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

4.1.2 Attracting talents

Fostering teamwork. Encouraging a healthy and stimulating environment where everyone can express their skills and talent, feeling a sense of belonging, pride and motivation. Enhancing company skills.

For Open Fiber these are real competitive advantages that can make the difference. For this reason, the Company identifies, recruits and keeps the best talent on the market, also thanks to the continuous improvement of recruiting practices for the selection of candidates, the assessment of skills and the development of job offers.

Open Fiber's strategy to attract new talent and enhance employer branding is mainly developed by:

- implementing different attraction channels and sourcing tools such as the company database and the career section of the company website, being supported by 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)[56];
- participating in Employer Branding events/activities with a focus on being present in the territories, 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[57].

[56] For more details, please see the paragraph "Partnership for business competitiveness and efficiency of Public Administration".

[57] For more details, please see the paragraph "Diversity & Inclusion Workstream" and the paragraph "Partnership for business competitiveness and efficiency of Public Administration".

Career Day

In 2021, Open Fiber renewed its membership in the **Digital Career Day** event circuit to strengthen its network with the main universities in Italy, choosing Digital Oriented events to help the best talents find professional opportunities. In 2021 alone, the Company took part in over 15 events of this kind, reaching over 30,000 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 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.

In 2021, cooperation with six different Masters courses were carried out, with both technical/engineering and soft skills orientation. The activities involved co-designing teaching programmes, classroom lectures and presentations, internships, project work and scholarships.

Moreover, as part of the partnership initiatives with the main universities already consolidated by Open Fiber, there is a further collaboration with the world of scientific research 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 help Open Fiber become a data-driven organisation.

4.2 HUMAN CAPITAL DEVELOPMENT

4.2.1 Training

Staff training is a fundamental tool to support Open Fiber's business. 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 skills, both soft and hard, 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.

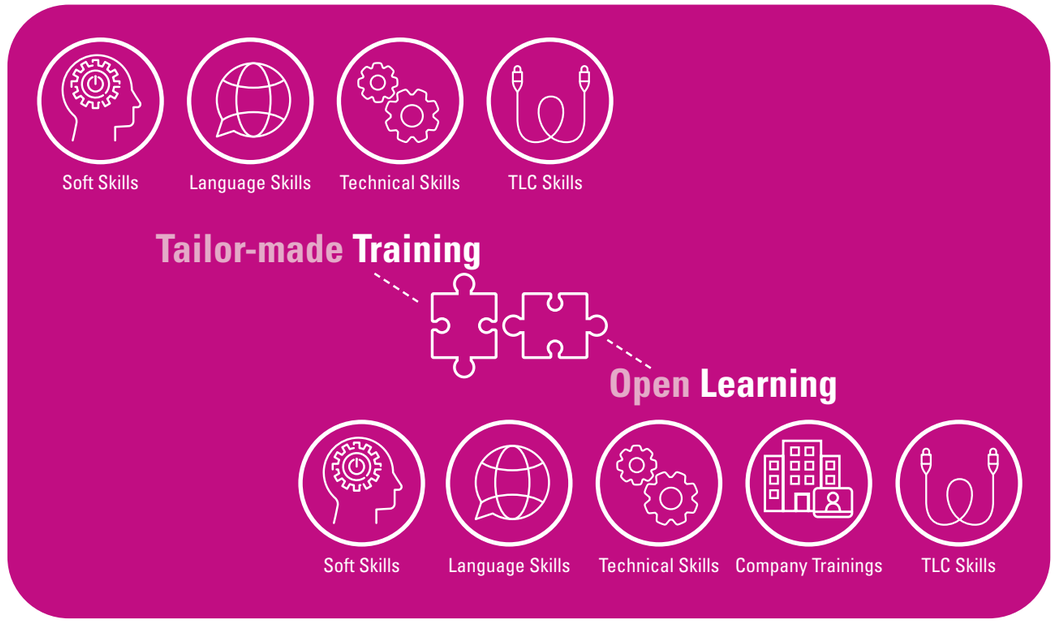
The continuation of the state of emergency relating to the COVID-19 pandemic has not

2021 Highlights

- **48,548** total training hours provided*
- **38** average training hours per capita
- **94%** of employees have received at least 4 hours of training
- **5,570** hours of Health, Safety and Environment (HSE) training
- **8,212** Green and Black Belt Lean Six Sigma training hours
- **93%** training hours delivered online

*Training data refer to courses mapped through the internal training management system LMS

prevented Open Fiber from providing training to its employees, on the contrary, it has increasingly opted for digital courses: indeed, while the percentage of training hours provided online in 2020 was 78%, in 2021 it increased to 93%. In the last year alone, the Company has thus reached **over 48,000 hours of training**, divided into Company training (institutional corporate training, relating to the 231 Model, Code of Ethics, Antitrust, etc.), technical training and training for specialists.), 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 skilled persons and trained person in electrical work) and "necessary" training (in addition to legislative compliance) on Security & HSE issues, aimed at increasing employee awareness of Cyber Security, Occupational Health and Safety and Environmental Protection.



Moreover, Open Fiber also promotes the principle of continuous self-learning by ensuring that all employees can access various dynamic self-learning training platforms, including one based on artificial intelligence, offering over 200,000 contents aggregated from the best MOOCs (Massive Online Open Courses): a real online catalogue of courses, video tutorials, TEDs, from all over the web, selected and updated constantly and available on the company's LMS[58].

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 1,289 in 2021.

4.2.2 Innovation in Training: Open Fiber Digital Mindset Switch

"**Open Fiber Digital Mindset Switch**" is a cross-functional training course that involved people with different roles and backgrounds in order to promote the development of a mindset based on a People Digital Strategy, aimed at enhancing the digital talents and innovation skills of the participants. Within its areas of competence it brings together the 10 skills identified by the World Economic Forum as fundamental elements in the future labour market, namely: Analytical thinking and innovation, Active learning and learning strategies, Creativity, originality and initiative, Technology design and programming, Critical thinking and analysis, Complex problem-solving, Leadership and social influence, Technology use, monitoring and control, Reasoning, problem-solving and ideation, Resilience, stress tolerance and flexibility.

The goal is to encourage corporate knowledge sharing by training key figures called "Open Fiber Digital Shapers" who have the task of accelerating the internal digital innovation process and supporting the company workforce in understanding the transformation underway and the technologies enabling innovation, through the development of concrete solutions in line with the Open Fiber business.

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 and Operational Support figures hired in 2021 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 organization, as well as networking. The OnBoarding courses had a total duration of 6 weeks and included training activities 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.

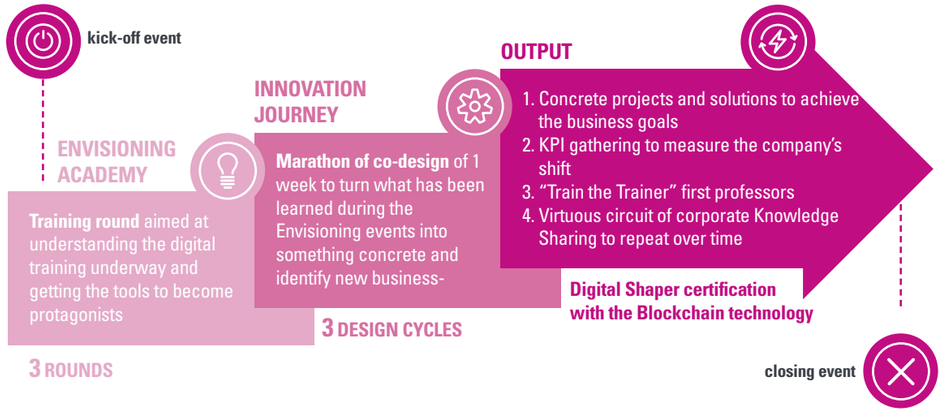
Highlights 2021

5 OnBoarding editions for Field Managers and Regional Operational Supporting Staff
84 participants

[58] Learning Management System.

Starting from the areas of competence developed within the "Open Fiber Digital Evolution 2020", in 2021 the Company worked to translate them into a Digital Based Mindset, aimed at providing concrete, simple tools and a different working approach to achieve the company's objectives.

Open Fiber's "Digital Mindset Switch" process



Green & Black Belt Lean Six Sigma

In 2021, Open Fiber involved a significant number of employees in a training course to obtain the International **Lean Six Sigma Green Belt and Lean Six Sigma Black Belt Certification**, in accordance with ISO 18404:2019 international standard.

The courses, which aim to develop the ability to analyse and improve business processes through the use of a "Problem Solving" methodology and following the DMAIC cycle (Define, Measure, Analyze, Improve, Control), were held throughout the year for a total of 8,212 hours delivered and 52 people involved.

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 the use of resources, work areas and production cycles, while ensuring high quality in production and process management.

4.2.3 Development of skills: "Best Of"

Over the course of 2021, a survey was delivered to the entire company population regarding the new hybrid working mode, in order to understand the views of employees and thus design the Fiber Working of the future.

Starting from the analysis of the results and everyone's contributions, the "**Best Of**" project was implemented. It is a set of development and training initiatives, company space management, Welfare and People Care, Occupational Health and Safety, with the aim of giving a new shape to the Company, developing the skills of future Fiber Leaders and Fiber Workers and designing the leadership of the future towards a new model of agile work.

This led to the creation of the Fiber Working Maps, aimed at highlighting the ideal behaviours and skills of these figures, from which it was found that the Fiber Worker's key characteristics are the ability to **work towards objectives** and **in synergy with the team, to communicate clearly and effectively** and to show openness to change; while the Fiber Leader's objectives, deriving from their decisive role in this hybrid context, are aimed at **creating an inclusive working environment** based on trust and listening, keeping the level of **motivation** and **engagement** high towards a **shared vision** to build and implement together the best version of Open Fiber.

Starting from the Fiber Working Maps, fully tailor-made training and development initiatives

BEST of
LA VERSIONE MIGLIORE DI NOI

FIBER WORKING MAPS

FIBER WORKER

LAVORO PER OBIETTIVI
- Conosce gli obiettivi da raggiungere e definisce in autonomia le modalità per farlo
- Pianifica le attività ed è flessibile a riprogrammarle quando le priorità cambiano
- Gestisce il proprio tempo conciliando riunioni, attività in back office e momenti di pausa

COMUNICAZIONE SMART
- Utilizza strumenti e modalità di comunicazione adeguati alle differenti situazioni
- Condivide proattivamente le informazioni rilevanti
- Gestisce i meeting in modo efficace, comprendendo quando sono necessari, chi coinvolgere e come usare al meglio il tempo di tutti

APERTURA AL CAMBIAMENTO
- Accoglie il cambiamento in modo positivo e coglie le opportunità che ne derivano
- Si adatta facilmente e rapidamente a nuove esigenze, situazioni e modalità di lavoro
- Mantiene alta la motivazione di fronte alle sfide e agli imprevisti
- Considera l'errore come fonte di apprendimento e di miglioramento personale

RELAZIONE CON GLI ALTRI
- Coinvolge attivamente sia i colleghi in presenza che quelli a distanza
- Stabilisce e mantiene solide relazioni professionali con il proprio team e con le altre aree aziendali
- Crea occasioni di contatto anche informali con i colleghi, non solo in merito a questioni lavorative

BEST of
LA VERSIONE MIGLIORE DI NOI

FIBER WORKING MAPS

FIBER LEADER

RESPONSABILIZZAZIONE E DELEGA
- Individua gli obiettivi di team, lasciando libertà di azione ai propri collaboratori
- Assegna in modo chiaro attività, perimetri di competenza e ambiti di delega, incentivando la responsabilità individuale
- Crea costanti momenti di contatto con i collaboratori per far circolare le informazioni, monitorare l'avanzamento delle attività e dare feedback

POSITIVITÁ ED ENGAGEMENT
- Gestisce lo stress e mantiene un clima positivo
- Tiene alto il livello di motivazione del team anche nei momenti di difficoltà
- Stimola il team ad essere tenace e ad uscire dalla zona di comfort

INTERAZIONE APERTA E VISIONE
- Costruisce e comunica una visione condivisa, bilanciando priorità di breve e medio periodo
- È sempre disponibile ad ascoltare i collaboratori e si mostra aperto a valutare idee e proposte diverse dal proprio punto di vista
- Stimola il team a sperimentare, accetta gli errori e li utilizza come fonte di apprendimento

PEOPLE MANAGEMENT
- Crea un ambiente lavorativo inclusivo e basato sulla fiducia
- Investe del tempo per creare opportunità di formazione e crescita per i propri collaboratori
- Riconosce gli sforzi e celebra i risultati raggiunti, valorizzando il contributo di ognuno

aimed at Fiber Workers and Fiber Leaders were also implemented as early as the last months of 2021, with the aim of training and strengthening the key skills to best cope with the new hybrid working mode.

4.2.4 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.

For this reason, support for professional growth is given not only through training and awareness-raising activities, but also through Team Empowerment and Individual Coaching processes.

Highlights 2021

- **780 participants in the Team Empowerment process in 2021**
- **30 employees involved in personal growth processes (Individual Coaching)**

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 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 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 'out of office' and sharing commitments.

A total of around 850 employees have been involved since 2020 - the year in which the Team Empowerment initiative was launched.

The **Corporate Individual Coaching** course - which for the year 2021 involved 30 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.

The programme 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 coach and coachee, 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.

4.3 COMPANY WELFARE

Management and organisation, individual wellbeing, working conditions, health, safety and risk prevention[59]. 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 wellbeing 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.

4.3.1 Communication channels

With the aim of improving the quality of life of its people, listening to their needs and requirements and gathering ideas to be studied and implemented 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 within the MyHR platform where each

[59] For more details see paragraph "4.5 Health and Safety Protection".

employee can propose a project or initiative they would like to see implemented.

The management interview that each employee has the opportunity to have throughout the year with their HR Business Partner is particularly valuable. In 2021, a listening programme was also launched for new recruits, a unique opportunity for dialogue and discussion to facilitate their integration into the Company.

4.3.2 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[60], 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;
- extension of paternity leave to 15 days (including INPS - National Social Security Institute- days);
- granting of paid leave for children's illness up to 5 days per year and extended up to 14 years of age;
- 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 employees' children, split into different age groups, as well as university orientation webinars, in cooperation with some academic institutions of excellence: Luigi Bocconi University in Milan, Catholic University of the Sacred Heart in Rome and Luiss Summer School (summer university orientation courses, addressed to third and fourth year high school students).

Also in 2021, employees with children up to lower-level secondary school (middle school) were granted paid leave to accompany them on the first day of school.

During the Christmas holidays, the doors were opened for the Open Kidsmas Day Digital Edition 2021, an event dedicated mainly to the children of employees up to the age of 12, with games and trivia with prizes.

[60] For more details see paragraph "4.4 Diversity & Inclusion.".

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.

4.3.3 A people-friendly working environment, in the office as well as at home

Welfare, teamwork, a 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 balance, 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.

We have also started to build a new hybrid working model, 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.

Good Practices for Smart Working

Smart working allows for greater flexibility in private life. It is an organisational model that overcomes the constraints of the place and time in which one has to work. However, what everyone experienced in 2020 was **"mandatory" remote working**. For this reason, Open Fiber has thought of providing some useful tips to carry out activities in the best possible way:

- **"decide how to manage your time"** in order to balance private and working life;
- **"take a break"** every 90 minutes;
- **"create your ideal environment"** by finding a suitable work desk at home;
- **"define a method"** before starting your day;
- **"interact with your colleagues"** respecting their private life.

Moreover, in order to improve and make Smart Working even more "comfortable", in line with the previous year, the DTTH 2.0 (Dotazioni To The Home, Equipment To The Home) project was relaunched for the second consecutive year, namely the delivery of assets (ergonomic chairs and IT equipment) to employees' homes.

4.3.4 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** has also been activated for the year 2021 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: babysitter at home, pet sitter). The insurance police covering COVID-19 risk will also remain active throughout 2022.

A peculiar year like 2021, in which the focus was inevitably still on COVID-19, was still characterised by a drastic decline in screenings. However, fewer screenings does not mean fewer cancers, but rather more people unaware of the risks. That's why Open Fiber launched two prevention campaigns, in October and November (recognised respectively as Women's and Men's Prevention Month). A way to invite employees 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 physical wellbeing, a virtual platform has also been activated for physical

activity at home and an APP has been made available for access to a network of gyms and sports centers at very convenient prices, as well as the possibility of receiving a tailored diet plan from dedicated professionals.

In order to raise staff awareness of Occupational Health and Safety and Environment (HSE) issues, in 2021 Open Fiber

decided to engage its employees in an online challenge structured in a gamification focused on Health and Safety issues. The digital game, conveyed through an infographic, was introduced by an unexpected event from which starts a story articulated in three challenges, each of them set in different outdoor scenarios representing Open Fiber's activities (worksites and technological sites). Each of the challenges was designed to test the knowledge and intuition on Health and Safety issues of the learned subject, who received at the end of the game a scorecard with the score achieved and their safety profile.

The objective of the initiative was to raise awareness of Health and Safety issues among Open Fiber employees in a playful way, increasing awareness of the culture and proper behaviour in specific high-risk environments such as worksites and technology sites, promoting proactive attitudes towards HSE issues.

4.3.5 Fiber Working and COVID-19 emergency

The COVID-19 emergency has rewritten the standard ways of carrying out work activities; each company, in order to guarantee the normal continuation of business, has resorted to alternative work systems, taking measures aimed at limiting the spread of the virus.

Since the beginning of the epidemiological emergency, two pillars have guided Open Fiber in dealing with the pandemic: **maximum protection of Health and Safety of workers** and **effective continuation of work activities** to ensure the development and management of the Company's infrastructure. The COVID-19 emergency management plan is constantly updated, in line with what is also required by national and regional regulatory requirements.

The drivers that develop it are those of **protection, distancing** and **tracking** of suspected cases, always ensuring the privacy of all employees and all those who, in any capacity, work for Open Fiber.

As a precautionary measure, Open Fiber has continued to recommend that its employees limit international and domestic travel to those that are essential to ensure the company's Operational Continuity. Work activities were carried out in hybrid mode, with a wider use of Smart Working in the most critical phases of the pandemic.

All actions aimed at countering the spread of Coronavirus have been shared with the Internal Committee for the management, verification and periodic updating of the Regulatory Protocol[61], in charge of assessing the implementation, verification and possible updating of the rules of the Anti-Competition Protocol with the trade union representatives and the Workers' Safety Representatives, and composed of the Employer's Delegates, the Personnel Management and Security & HSE function, the Personnel, Organization and Services Department, the Prevention and Protection Service Manager and the Competent Doctor.

The system for controlling access to workplaces was updated in 2021 with the installation of readers to verify COVID-19 green certifications (the so-called Green Pass), a tool that was added to what had already been set up in 2020 (installation of thermal scanners, sanitizing gel dispensers, definition of a rigorous Cleaning and Sanitising Protocol, establishment and dissemination of a Behavioural Protocol aimed at all employees and suppliers to combat the spread of Coronavirus, adoption of an APP for access management and booking of workstations to ensure interpersonal distance) in order to ensure compliance with current regulations and a safe working environment for all.

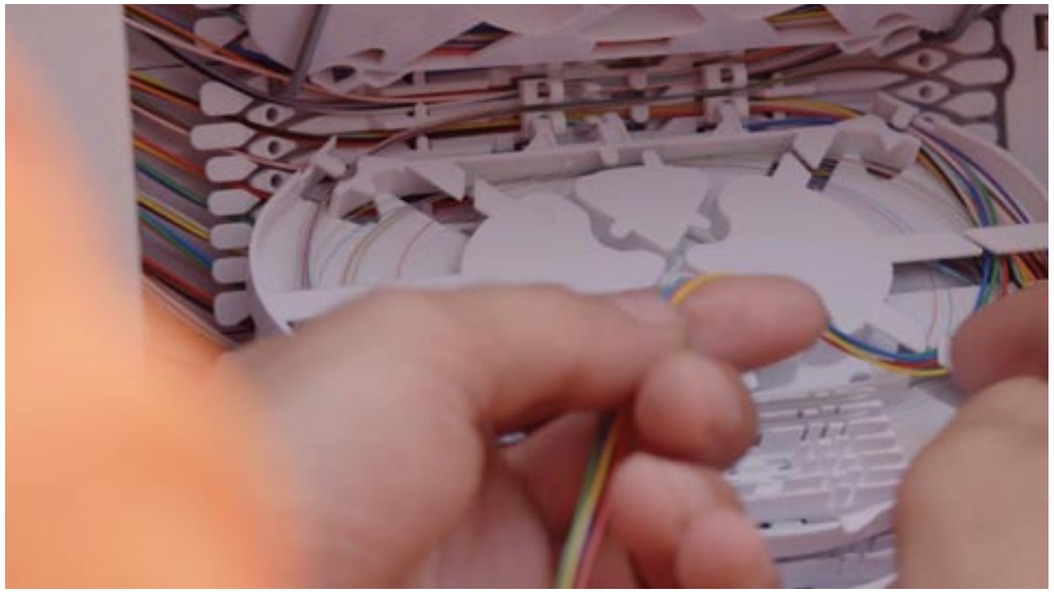
However, the commitment for the most important asset, the employees, did not stop there. Through the launch of specific surveys, multiple support and listening measures targeting employees were defined during 2021:

1. **insurance support in the event of contagion:** insurance policy covering the COVID-19 risk for the entire company population for 2021, also extended for the whole year of 2022, which provides for hospitalisation allowances, recovery allowances and a post-hospitalisation assistance package also for family management (e.g., babysitter at home, pet sitter);
2. **support to employees:**
   - one-to-one interviews between HR Business Partners and employees to discuss both sensitive issues arising from the emergency and ordinary work-related topics in order to detect and anticipate possible cases of distress;
   - remote exercise through online courses, tailored training and diet programmes thanks to the partnership with Fitprime;
   - workshops and training courses for employees' children in Fiber Working, an initiative aimed at balancing, during working hours, the needs of employees and their children's daily life and leisure time management;
3. **launch of the EAP service** (*Employee Assistance Program*): a tailored programme of psychological, legal and fiscal support, free of charge and anonymous, for all employees and their families, available 24 hours a day, 7 days a week. In particular, each employee was able to call, anonymously and in strict confidence, the single toll-free number dedicated to the emergency at any time, to speak directly with a psychologist and psychotherapist, registered with the national professional register, who provided immediate counselling;

4. **good practices for Smart Working:** dissemination of a vademecum with useful tips and good practices for remote working;
5. ***"Dotazioni To The Home"*, Equipment To The Home, DTTH 2.0:** in order to ensure a comfortable and ergonomic Fiber Working experience, the DTTH initiative "Equipment To The Home" was re-launched; this initiative involves sending home equipment upgrading agile working tools such as PC monitors, ergonomic chairs, ergonomic PC supports, headsets, keyboard and mouse;
6. **"Safety Kit":** sending a care kit consisting of masks, gloves and sanitising gel to the home to promote personal and social protection and facilitate daily hygiene practices to combat Coronavirus.

4.4 DIVERSITY & INCLUSION

Inclusive and **Open Minded**: this is the working environment that Open Fiber is committed to ensuring, promoting the



[61] In line with the Protocol shared on 14 March 2020.

enhancement of diversity and different individual strengths. A strategic asset for the achievement of corporate objectives, which Open Fiber pursues through compliance with certain guiding principles: gender equality & women safeguard, maternity & all kind families care, disadvantaged areas & workers support, multi culturalism, disability confidence.

Gender equality & women safeguard

Open Fiber ensures that all staff have equal opportunities for employment, career and development by developing 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

The initiative is aimed at enhancing Diversity, ensuring a pipeline equally composed of male/female candidates, with a particular focus on gender, by means of pink quotas for technical profiles.

Role Models for tutorship and mentoring projects (2020-2022)

The aim of the project is to identify female employees in key positions to guide female students from Italian middle and high schools and universities in disadvantaged areas of southern Italy into the professions of the future, as agents of change and dedicated mentors, with a view to inclusion and enhancement of female talent.

- **+ 100** selected Italian schools among middle schools and high schools (technical institutes and lyceums) and more than 5 universities in Southern Italy will participate will participate in the project over 2 years;
- **+ 20.000** students involved;
- **+ 40** participating companies;
- **15** Open Fiber Role Models engaged.

"Ingenio al Femminile" Dissertation Award

A project promoted by CNI with the aim of awarding degree prizes to newly graduated women in STEM disciplines who have written brilliant engineering dissertations.

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.

Maternity & all kind families care

Open Fiber supports new 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.

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

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 sixth 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.

Events for families

Initiatives aimed at involving the families and children of employees.

attention to the inclusion of junior and senior professionals belonging to particular categories of workers.

Multi Culturalism

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 have 16 different nationalities.

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.

School/work alternation

The aim of the project is to create synergies between the Company and the territories, collaborating with schools in the most disadvantaged neighbourhoods and promoting the social inclusion of students, training them in new skills and qualifications to accompany them into the future, and creating engagement between Open Fiber employees and their territories through socially important initiatives.

- Over **100** students involved;
- **5** selected schools (classes IV and V - Technical Institutes);
- **5** territories involved (Rome, Milan, Bari, Genoa, Naples);
- **40** classroom training hours provided.

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. Open Fiber supports this project by offering a curricular internship within the company.

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.).

Diversity Career Day

The company took part in 2 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.

Open Learning

Subtitles have been added to the training pills made available on the Open Fiber website so that they can also be watched by deaf people.

4.5 HEALTH AND SAFETY PROTECTION

The protection of the Health and Safety of workers is a central issue for Open Fiber, on which it focuses every day 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 and 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[62]) and the participation of Competent Doctors[63]. An important role is played by the occupational health service which, through health surveillance[64], 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 and Employer[65] 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 workers (e.g., meeting pursuant to art. 35 of Legislative Decree 81/08).

In this context, the Management System implemented by Open Fiber and certified - for the Occupational Health and Safety component - according to the UNI ISO 45001 standard is an

[62] The number of appointed RSLs and the method of appointment are laid down in the relevant legislation in force.
[63] 15 Competent doctors appointed locally and 1 Coordinating Competent Doctor.
[64] The results of the health surveillance process and the results of the assessments of suitability for the work task performed are treated in compliance with the Privacy Code adopted by Open Fiber.
[65] 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.

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.[66]

4.5.1 Performance monitoring

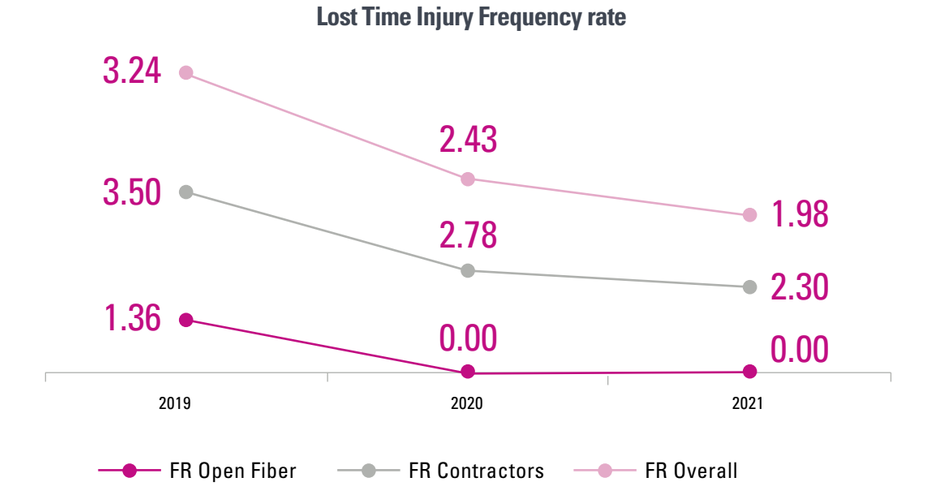
Among the most significant indicators in the field of Occupational Health and Safety, Open Fiber monitors the trend of accident performance, related not only to its own employees, but also to contractors and subcontractors operating within the Creation and Delivery & Assurance activities. The analysis 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 2021, the improvement in the company's performance in terms of work-related injuries was confirmed, both for the staff of Open Fiber (which, again in 2021, reported no work-related injuries for its employees) and for the companies involved in Creation and Delivery & Assurance activities, (where the frequency of injuries, equal to FR = 2.78 in 2020, was also reduced in 2021 to FR = 2.30, representing a 17% decrease).

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 & HSE Function.

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.



403-9: WORK-RELATED INJURIES

Descrizione		U.M.	2019	2020	2021
Open Fiber	**Lost Time injuries**[67]	**n.**	**2**	**0**	**0**
	Commuting injuries	n.	4	1	2
	Lost time injuries Frequency rate	-	1.36	0.00	0.00
	Frequency rate for lost time injuries with high-consequences consequences[68]	-	0.00	0.00	0.00
	Frequency rate for work related injuries including commuting injuries	-	4.09	0.52	0.92
Contractors[69]	**Lost time injuries**	**n.**	**37**	**36**	**31**
	Lost time injuries Frequency rate	-	3.50	2.78	2.30
	Frequency rate for lost time injuries with high-consequences	-	0.09	0.08	0.07
Overall performance	**Lost time injuries**	**n.**	**39**	**36**	**31**
(Open Fiber + Contractors)	Lost time injuries Frequency rate	-	3.24	2.43	1.98
	Frequency rate for lost time injuries with high-consequences	-	0.08	0.07	0.06

[66] For more details, please refer to the paragraph "Company profile".

[67] 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, for details of which see the paragraph "5.6 Data and indicators tables" in the chapter "5 Guidance".

[68] Injuries with high-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 were taken into account.

[69] Workers who are not employees, but whose work and/or place of work is under the control of the company.

4.5.2 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., excavation, 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 not only with the regulations in force but also 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:

- in the initial phase, the Company promotes information meetings with the Service contractors under contract in order 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;
- during the term of the agreement, 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 in order to monitor and improve performances. 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 2021, 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 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 2021, including:

- definition and 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) in order to disseminate good practices, increase awareness of the risks to be eliminated or mitigated and increase the responsibility of both Open Fiber employees and company personnel by involving them in relation to various issues;
- 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'[70]. 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:
  - a dedicated OnBoarding program[71] 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;
  - design of the "PASS" - *Portale Aziendale Salute e Sicurezza*, 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;
  - safe driving courses for staff using company cars, in cooperation with the Automobil Club Italia;
  - 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.

[70] For more details, please see the paragraph "Development of Human Capital".
[71] For more details, please see the paragraph "Development of Human Capital".

C.A.R.E Programme

Open Fiber strongly believes that attention to the environment, health and safety in the workplace 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 defined and launched over the course of 2021.

Communication

- **HSE Moment:** the HSE moment is a video for all Open Fiber employees and which can be used during meetings with external personnel. It "conveys" the importance Open Fiber attaches to safeguarding the Health and Safety of employees and protecting the environment

Awareness

- **HSE Pills:** training pills for Open Fiber colleagues in the Network & Operations department with the aim of disseminating good HSE practices with reference to specific scenarios. The HSE pills developed over the course of 2021 concerned Worksite area demarcation and traffic management and HSE issues to be verified during an inspection at a technology site.

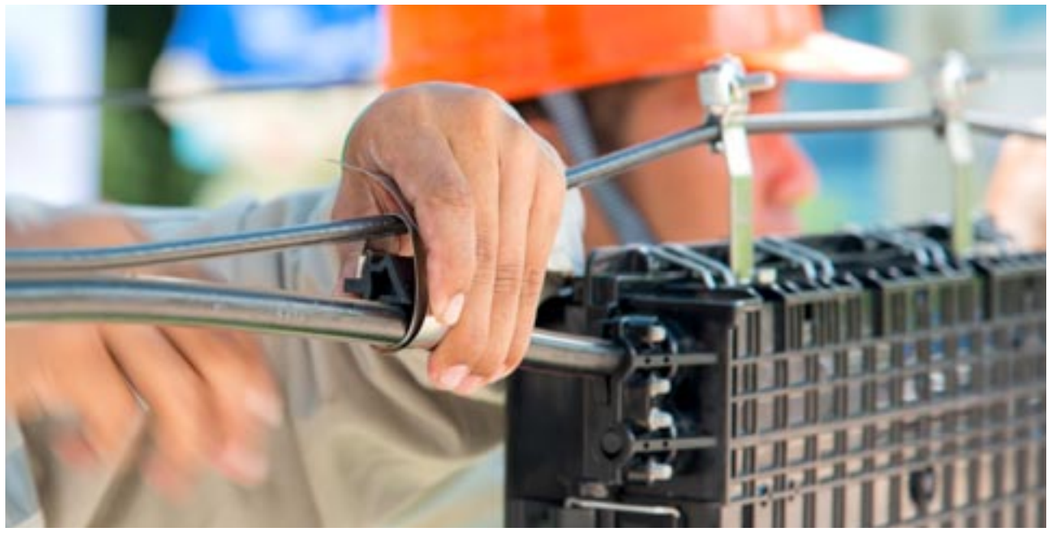
- **Second Gamification HSE – "A Safe World: worksites mission":** following the first one launched in 2020, a new gamification focused on HSE issues in the world of Open Fiber worksites and technology sites has been developed. The aim of the initiative is to test the learner's investigative skills, observation abilities and safety skills.

Responsibility

- **HSE Pocket:** a booklet for the staff of companies involved in the construction and maintenance of the Network, which contains the safe behaviours to adopt and the unsafe ones to avoid in relation to the ten main activities carried out in the Open Fiber infrastructure. The booklet has also been published on the Open Fiber institutional website and made available to all website visitors.

Engagement

- **That's Not Right:** an interactive video for all Open Fiber employees which, starting from the correlation between serious incidents (injuries) and less serious ones (near misses, unsafe conditions and unsafe behaviour), encourages employees to report "everything that is not correct" in order to break the famous "chain of events".



05
Guidance

5.1 PREAMBLE

The 2021 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 relevant issues, 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.**

5.2 METHODOLOGICA NOTE

The report has been prepared in accordance with the GRI Sustainability Reporting Standards: Core option, published by the Global Reporting Initiative (GRI). In line with the reference standards, the content definition process followed the principles of stakeholder inclusiveness, sustainability context, materiality and completeness and, with reference to report quality, the principles of accuracy, balance, clarity, comparability, reliability and timeliness: in line with these principles, the reference period of this document is the 2021 financial year (from 1 January to 31 December) and the performance indicators refer, where possible, to the three-year period 2019-2021. A number of significant events that occurred in early 2022 have also been reported.

If there are more suitable tools to represent Open Fiber's performance regarding a specific topic (for example: Annual Financial Statement, Code of Ethics), reference has been made for further explanation or analysis to the relevant paragraphs and to the "Comments and Omissions" column of the GRI Content Index.

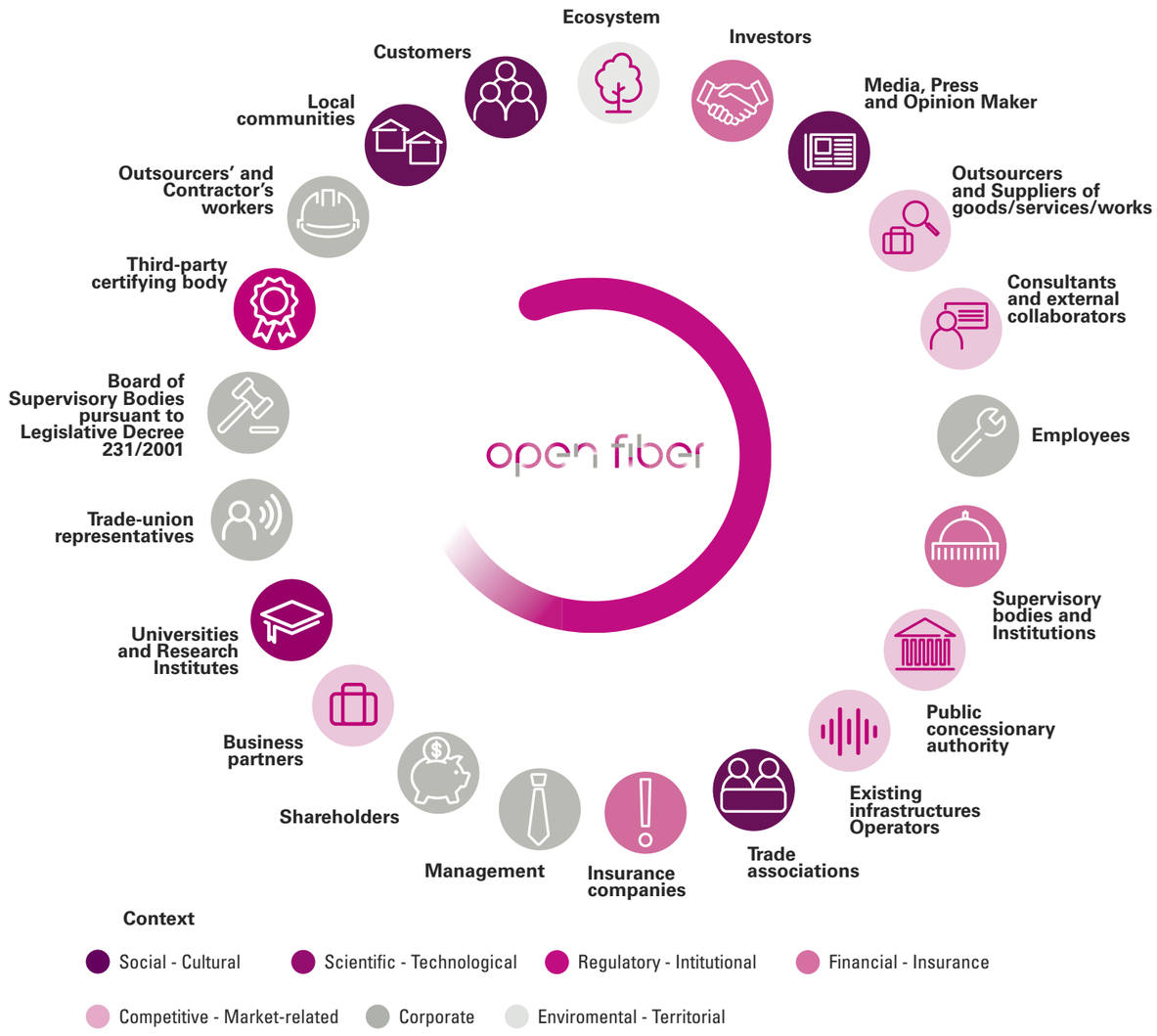
Finally, reference has been made to the main Sustainable Development Goals (SDGs) of the United Nations Agenda 2030, to which Open Fiber contributes through its activities.

5.3 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 puts in place to initiate a two-way communication with its stakeholders and constantly monitor their opinions and expectations. This process that engages the two parties is fundamdental since the interest that stakeholders show towards the Company is the same that Open Fiber has towards its multiple interlocutors.

Stakeholders map



Stakeholder	Expectations	Company Engagement, Activities and Responses
Local communities	Honesty, ethics, fairness, integrity. And also 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. The 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, inclusion and equality, 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 certificazion bodies	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

Stakeholder	Expectations	Company Engagement, Activities and Responses
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
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 inclusion/diversity/equality in the work environment, protection of human rights, sound governance and transparent conduct.	• Regular meetings with representatives • Press releases

Stakeholder	Expectations	Company Engagement, Activities and Responses
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, inclusion/diversity/equality, 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 • Training and refresher courses • Engagement and team-building initiatives • Corporate meetings • Corporate 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

Stakeholder	Expectations	Company Engagement, Activities and Responses
Board of Supervisory Bodies pursuant to 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 CO2 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

5.4 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 is a member of 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 is a member of the prestigious Italian think-tank and participates in its activities at European level.
- **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 6,800 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 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&Inclusion and Next Generation.
- **Previass II:** the Intercompany Assistance Fund for client companies, registered in the register of Health Funds in order to comply with the provisions of the Sacconi Decree[72], 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 (*Associazione Italiana Internal Auditors,* AIIA):** a non-profit association established in 1972 and recognised as the Italian affiliate of I.I.A. - Institute of Internal Auditors - world leader in standards, certification and training for the profession of Internal Auditor. With more than 4,500 members, representing about 900 companies, AIIA has always been a reference for the themes 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 no. 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.
- **4.Manager:** business culture, development of managerial skills and active labour policies are

[72] D. M. 27/10/2009

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, the National Associated Press Agency (Agenzia Nazionale Stampa Associata) 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 terms of customer choice and in the international news 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.

5.5 MATERIALITY ANALYSIS

The materiality analysis process has allowed Open Fiber to identify, in line with the indications of the GRI Standards, the "material topics", i.e., those issues that have the greatest impact on the Company's ability to generate value over time, which reflect the significant economic, environmental and social impacts it has and which can substantially influence the assessments, decisions and behaviour of stakeholders.

The process began by identifying the topics recognised as relevant according to the Global Reporting Initiative standards, which are generally deemed to reflect the Company's external perspective as they were identified in international multi-stakeholder debate and discussion contexts, and according to what was found in corporate documents such as policies, internal procedures and relevant documentation on the internal regulatory system (e.g., the Code of Ethics).

In order to identify the list of potentially relevant topics and define the most important ones for stakeholders, the following activities were also carried out:

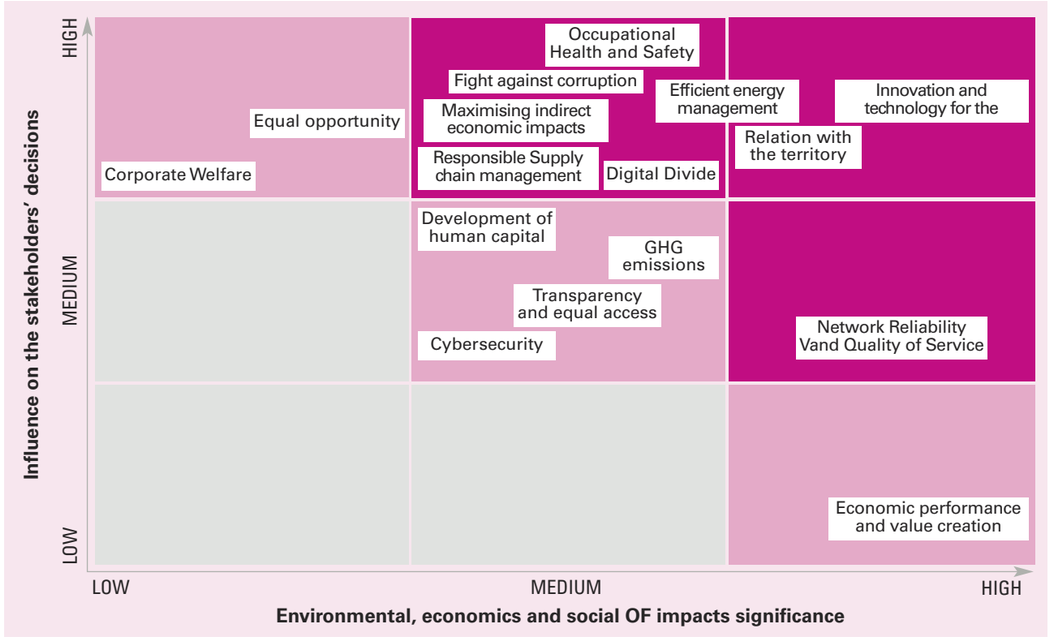
- Benchmarking of sustainability and social responsibility documents of comparable companies;
- Analysis of sector trends and sustainability aspects that are most relevant to Open Fiber's business;
- Context analysis of Open Fiber's Integrated Management System

For the 2021 materiality matrix, it was assessed how the changes in shareholding, including the addition of the Macquarie Group jointly with CDP Equity (Subsidiary of Cassa Depositi e Prestiti) to the capital of Open Fiber, could influence the value of significance of the topics included in the corporate materiality framework for stakeholders. The analysis showed that new "material" topics appeared: "**Efficient energy management**" and "**Equal opportunity**". Furthermore, taking into account the growing focus on customer relations, the topic "**Network reliability and service quality**", already included within Open Fiber's 2020 materiality matrix, became more relevant.

Following the review of the influence over stakeholder decisions, company Management (CEO and top management) was involved by means of a workshop devoted to assessing the significance of economic, environmental and social material topics from the Company's point of view and to validating the new 2021 materiality matrix.

The 2021 materiality matrix is shown below:

- **Economic performance and value creation:** designing business activities including assessments and analyses to maximise economic, environmental and social impacts in relation to community needs and sustainability challenges;
- **Maximising indirect economic impacts:** designing programmes and partnerships in line with the business in order to promote the competitiveness of companies, for example in developing Industry 4.0 and Public Administration;
- **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 Model adopted by Open Fiber;
- **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 to all interested operators on equal terms;
- **Efficient energy management:** promoting and implementing initiatives aimed at monitoring and reducing the energy consumption of Open Fiber's offices and technological sites;
- **Greenhouse gas emissions:** monitoring and reducing greenhouse gas emissions by promoting renewable energy sources and energy reduction programmes;
- **Corporate Welfare:** offering Open Fiber employees a welfare system that meets their needs and guarantees numerous services, including those supporting work-life balance and family support;
- **Occupational Health and Safety:** guaranteeing working conditions that ensure full respect for the right to Health and Safety and protection of workers' physical well-being, promoting and spreading the corporate culture on such issues and paying attention to the drafting of operating procedures and monitoring systems for all those who, in any capacity, collaborate in pursuing corporate objectives;



- **Innovation and technology for the environment:** taking measures aimed at minimising the overall impact on the environment and the territory in the business value chain: choosing innovative solutions and technologies that guarantee a high-performance and eco-sustainable network infrastructure, such as engineering techniques for energy efficiency; using products with a longer life cycle; using more sustainable materials that are easy to recycle, with minimum levels of toxicity and low emissions of toxic gases;
- **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 by laying fiber optics, allowing the entire population equal access to digital services, bridging the gap between urban and non-urban areas and implementing plans to cover black spots;
- **Equal opportunity:** ensuring equal professional opportunities for all workers, respecting and valuing all types of diversity, be it gender, ethnicity, religion or political orientation, while ensuring full inclusion;
- **Development of human capital:** continually investing in the training and professional growth of its people, promoting a corporate culture aimed at developing skills and making the most of talents;
- **Cybersecurity:** implementing Information Security policies to defend ICT and IoT systems, data and processes against 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;
- **Relations with the territory:** providing information to and involving local authorities and communities on the network implementation activities, on compliance with the plan and on the digital services that will be made available. Guaranteeing the protection of health and safety, causing as little inconvenience as possible to the community, such as noise, traffic, waste production, atmospheric emissions and accidental spillage on the ground, when carrying out site works and network management and maintenance activities. Seeking solutions for the construction of the network, by reusing and upgrading existing infrastructure, thus preserving the artistic and landscape heritage.

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.

OPEN FIBER MATERIAL TOPIC	GRI STANDARD	SCOPE AND ANY LIMITATIONS
Economic performance and value creation	201 Economic performance 2016	Open Fiber S.p.A.
Maximising indirect economic impacts	203 Indirect economic impacts 2016	Open Fiber S.p.A.
Fight against corruption	205 Anti-corruption 2016	Open Fiber S.p.A.
Transparency and equal access	206 Anti-competitive behavior 2016	Open Fiber S.p.A.
Efficient energy management	302 Energy 2016	Open Fiber S.p.A.
Greenhouse Gas emissions	305 Emissions 2016	Open Fiber S.p.A.
Corporate welfare	401 Employment 2016	Open Fiber S.p.A.
Occupational Health and Safety	403 Occupationql Health and Safety 2018	Open Fiber S.p.A. Suppliers engaged in the network creation, management and maintenance (Creation, Delivery & Assurance)
Innovation and technology for the environment	-	Open Fiber S.p.A.
Network reliability and service quality	-	Open Fiber S.p.A. Suppliers engaged in the network creation, management and maintenance (Creation, Delivery & Assurance)
Digital Divide	-	Open Fiber S.p.A.
Equal opportunity	405 Diversity and Equal opportunity 2016	Open Fiber S.p.A.
Development of human capital	404 Training and Education 2016	Open Fiber S.p.A.
	412 Human Rights Assessment 2016	Open Fiber S.p.A.
Cybersecurity	-	Open Fiber S.p.A.
Responsible management of the supply chain	308 Supplier Environmental Assessment 2016	Open Fiber S.p.A. Suppliers engaged in the network creation, management and maintenance (Creation, Delivery & Assurance)
	414 Supplier Social Assessment 2016	Open Fiber S.p.A. Suppliers engaged in the network creation, management and maintenance (Creation, Delivery & Assurance)
Relations with the territories	413 Local Communities 2016	Open Fiber S.p.A.
	416 Customer Health and Safety 2016	Open Fiber S.p.A. Suppliers engaged in the network creation, management and maintenance (Creation, Delivery & Assurance)

MATERIAL TOPICS AND 2030 AGENDA SDGS

Open Fiber Material Topic	SDGs	Specific target
Economic performance and value creation		**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 **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
Maximising indirect economic impacts		**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
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
Efficient energy management		**13.2** Integrate climate change measures into national policies, strategies and planning
Greenhouse Gas emissions		**13.2** Integrate climate change measures into national policies, strategies and planning
Corporate welfare		**5.b** Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women
Occupational Health and 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
Innovation and technology for the environment		**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 **9.4** 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 **12.2** By 2030, achieve the sustainable management and efficient use of natural resources **13.2** Integrate climate change measures into national policies, strategies and planning

MATERIAL TOPICS AND 2030 AGENDA SDGS

Open Fiber Material Topic	SDGs	Specific target
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
Digital Divide		**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 **17.16** Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries
Equal opportunity		**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 opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard
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
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
Relations with the territories		**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 **9.4** 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

5.6 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 2021 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.

5.6.1 General Disclosure

102-8: INFORMATION ON EMPLOYEES AND OTHER WORKERS

EMPLOYEES BY EMPLOYMENT CONTRACT AS OF 31 DECEMBER

Employment contract	Gender	UOM	2019	2020	2021
Permanent	Female	n.	258	349	405
	Male	n.	652	799	884
Total		**n.**	**910**	**1,148**	**1,289**
Temporary	Female	n.	1	1	0
	Male	n.	1	1	0
Total		**n.**	**2**	**2**	**0**

EMPLOYEES BY EMPLOYMENT CONTRACT AS OF 31 DECEMBER

Tipo Contratto	Gender	UOM	2019	2020	2021
Full-time	Female	n.	256	347	402
	Male	n.	652	799	883
Total		**n.**	**908**	**1,146**	**1,285**
Part-time	Female	n.	3	3	3
	Male	n.	1	1	1
Total		**n.**	**4**	**4**	**4**

EMPLOYEES BY EMPLOYMENT CONTRACT AS OF 31 DECEMBER

Description	UOM	2019	2020	2021
Total employees as of 31 December	**n.**	**912**	**1,150**	**1,289**

OTHER WORKERS AS OF 31 DECEMBER

Description	UOM	2019	2020	2021
Employees of other organization	n.	6	6	5
Interns	n.	11	11	17
Temporary agency workers	n.	1	9	11
Collaborators	n.	-	-	1

5.6.2 Economic performance and creation of value

201-1: DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED

DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED

Description	UOM	2019	2020	2021
ECONOMIC VALUE GENERATED	**€/000**	**186,455**	**261,001**	**379,546**
Production value (Total Revenues)	€/000	186,078	261,001	379,546
Dividends from shareholdings	€/000	-	-	-
Other types of financial income (financial income)	€/000	377	0	0
Extraordinary income	€/000	-	-	-
ECONOMIC VALUE DISTRIBUTED	**€/000**	**171,882**	**90,020**	**351,838**
Operating costs	**€/000**	**85,506**	**105,749**	**124,035**
Costs for raw materials	€/000	-	-	-
Costs for services (costs for services)	€/000	79,668	93,833	120,567
Costs for using third-party goods (Costs for using third-party goods)	€/000	3,295	4,562	3,282
Changes in inventory of raw materials (Changes in inventory of raw materials)	€/000	-	–	-
Other operating expenses (net of taxes) - (Miscellaneous operating expenses)	€/000	2,543	7,354	186
Extraordinary expenses	€/000	-	–	-
Value distributed to capital providers	**€/000**	**65,560**	**94,743**	**80,375**
Costs for personnel (costs for personnel)	€/000	60,219	66,880	80,375
Valore distribuito ai fornitori di capitale	**€/000**	**65,560**	**94,743**	**130,668**
Interests and other financial charges (financial charges)	€/000	65,560	94,743	130,668
Value distributed to the Public Administration	**€/000**	**(39,687)**	**(177,997)**	**16,436**
Current and prepaid income taxes (income tax)	€/000	(40,130)	(178,370)	13,911
Miscellaneous operating costs (only the value of taxes) (stamps, registrations, taxes, miscellaneous fees)	€/000	443	372	2,525
Value distributed to shareholders	**€/000**	**-**	**-**	**-**
Dividends distributed	€/000	-	-	-
Value distributed to the community	**€/000**	**283**	**646**	**324**
Gifts	€/000	17	191	1
Sponsorships	€/000	-	-	-
Membership fees	€/000	266	455	323
ECONOMIC VALUE RETAINED	**€/000**	**14,573**	**170,981**	**27,708**
Profit (or loss) for the year (net of dividends)	€/000	(116,993)	3,490	(209,728)
Write-downs and provisions	€/000	7,471	8,502	20,751
Depreciation	€/000	124,095	158,989	216,685
Deferred taxes	€/000	-	-	-
ECONOMIC VALUE GENERATED	**€/000**	**186,455**	**261,001**	**379,546**
ECONOMIC VALUE DISTRIBUTED	**€/000**	**171,882**	**90,020**	**351,838**
ECONOMIC VALUE RETAINED	**€/000**	**14,573**	**170,981**	**27,708**

Note:
* for the year 2021 this item includes: Miscellaneous operating costs net of stamps, registrations, taxes, VAR fees, indirect taxes; fees and concessions (COSAP and TOSAP, ground occupation tax); AGCM (the Italian Competition Authority) contribution.
** for the year 2021 this item includes: Miscellaneous operating costs net of stamps, registrations, taxes, VAR fees, indirect taxes; fees and concessions (COSAP and TOSAP, ground occupation tax); AGCM (the Italian Competition Authority) contribution.

For the 2020 reporting period, a reclassification between service costs and finance costs was performed.

With reference to the 2021 reporting period, a change has been made in the reclassification of the value distributed to suppliers (i.e., operating costs), to the Public Administration and to the Community for the income statement items related to Miscellaneous operating costs. This change also affects the 2021 comparison with the previous reporting period.

5.6.3 Fight against corruption

205-1: OPERATIONS ASSESSED FOR RISKS RELATED TO CORRUPTION

OPERATIONS ASSESSED FOR RISKS RELATED TO CORRUPTION

Description	UOM	2019	2020	2021
Total number of processes	n.	11	11	12
Processes assessed for risks related to corruption	n.	9	9	12
Processes assessed for risks related to corruption.	**%**	**82%**	**82%**	**100%**

Notes: 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 update of the number of business processes in the reporting period is due to the organisational change that took place in December 2021 and is regulated by Organisational Provision no. 01 Version no. 14 Dated 09/12/2021

5.6.4 Corporate welfare

401-1: NEW EMPLOYEE HIRES AND EMPLOYEE TURNOVER

NEW EMPLOYEE HIRES SINCE 1 JANUARY TO 31 DECEMBER

Description	Age group	UOM	2019	2020	2021
New employee hires by age group	< 30 years old	n.	52	81	63
	Between 30 and 50 years old	n.	118	196	152
	> 50 years old	n.	2	8	6
New employee hires by gender	Female	n.	65	105	83
	Male	n.	107	180	138
Total new employee hires		**n.**	**172**	**285**	**221**
Rate of employee hires by age group	< 30 years old	%	29%	39%	32%
	Between 30 and 50 years old	%	18%	24%	16%
	> 50 years old	%	2%	7%	4%
Rate of employee hires by gender	Female	%	25%	30%	20%
	Male	%	16%	23%	16%
Total rate of employee hires		**%**	**19%**	**25%**	**17%**

TERMINATIONS OF EMPLOYMENT FROM 1 JANUARY TO 31 DECEMBER

Gender	Age group	UOM	2019	2020	2021
Terminations of employment by age group	< 30 years old	n.	16	11	19
	Between 30 and 50 years old	n.	25	32	59
	> 50 years old	n.	3	4	4
Terminations of employment by gender	Female	n.	10	14	28
	Male	n.	34	33	54
Total terminations		**n.**	**44**	**47**	**82**
Turnover rate by age group	< 30 years old	%	9%	5%	10%
	Between 30 and 50 years old	%	4%	4%	6%
	> 50 years old	%	3%	3%	3%
Turnover rate by gender	Female	%	4%	4%	7%
	Male	%	5%	4%	6%
Total turnover rate		**%**	**5%**	**4%**	**6%**

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	UOM	2019	2020	2021
Employees that were entitled to maternity leave	n.	259	350	405
Employees that were entitled to paternity leave	n.	653	800	884
Total	**n.**	**912**	**1,150**	**1,289**

EMPLOYEES THAT TOOK PARENTAL LEAVE IN THE REPORTING YEAR

Description	UOM	2019	2020	2021
Employees that took maternity leave	n.	12	18	29
Employees that took paternity leave	n.	30	38	45
Total	**n.**	**42**	**56**	**74**

EMPLOYEES THAT RETURNED TO WORK AFTER PARENTAL LEAVE ENDED THAT WERE STILL EMPLOYED 12 MONTHS AFTER THEIR RETURN TO WORK

Description	UOM	2019	2020	2021
Employees that returned to work after the maternity leave ended	n.	4	10	15
Employees that returned to work after the paternity leave ended	n.	30	38	45
Total	**n.**	**34**	**48**	**60**

EMPLOYEES THAT RETURNED TO WORK AFTER PARENTAL LEAVE ENDED THAT WERE STILL EMPLOYED 12 MONTHS AFTER THEIR RETURN TO WORK

Description	UOM	2019	2020	2021
Employees that returned to work after maternity leave ended that were still employed 12 months after their return to work	n.	2	3	10
Employees that returned to work after paternity leave ended that were still employed 12 months after their return to work	n.	24	29	32
Total	**n.**	**26**	**32**	**42**

EMPLOYEES THAT DUE TO RETURN TO WORK AFTER TAKING PARENTAL LEAVE

Description	UOM	2019	2020	2021
Employees that due to return to work after taking maternity leave	n.	7	10	29
Employees that due to return to work after taking paternity leave	n.	30	38	45
Total	**n.**	**37**	**48**	**74**

RETURN TO WORK RATE

Description	UOM	2019	2020	2021
Female	%	57%	100%	52%
Male	%	100%	100%	100%
Total	**%**	**92%**	**100%**	**81%**

RETENTION RATE

Description	UOM	2019	2020	2021
Female	%	100%	75%	100%
Male	%	96%	97%	84%
Total	**%**	**96%**	**94%**	**88%**

5.6.5 Development of Human Capital

404-1: AVERAGE HOURS OF TRAINING PER YEAR PER EMPLOYEE

HOURS OF TRAINING

Description		UOM	2019	2020	2021
Training by employee category (average hours per capita)	Managers	h/employee	28	14	14
	Middle Managers	h/employee	41	34	36
	Office workers	h/employee	37	49	39
Formazione per genere (ore medie pro-capite)	Female	h/employee	35	40	36
	Male	h/employee	37	49	38
Average hours of training per employee		**h/employee**	**37**	**46**	**38**
Total hours of training		**h/employee**	**33,549**	**53,179**	**48,435**

412-2: EMPLOYEE TRAINING ON HUMAN RIGHTS POLICIES OR PROCEDURES

HOURS DEVOTED TO TRAINING ON HUMAN RIGHTS POLICIES OR PROCEDURES – OPEN FIBER EMPLOYEES

Description	UOM	2019	2020	2021
Hours devoted to training on human rights policies or procedures	h	227	312	2,353
Percentage of employees trained in human rights policies or procedures	%	28%	27%	82%

HOURS DEVOTED TO TRAINING ON HUMAN RIGHTS POLICIES OR PROCEDURES – OPEN FIBER EMPLOYEES + OTHER PERSONNEL

Description	UOM	2019	2020	2021
Hours devoted to training on human rights policies or procedures	h	251	336	2,488

Notes:
Training on human rights relevant to Open Fiber is covered in the courses dedicated to Company Training (Code of Ethics, MOG 231, etc.). All employees, when they join the company, are trained on these issues as they are part of the mandatory training. The hours reported in this table include the courses "Getting to know Legislative Decree 231/2001" and "The Code of Ethics of Open Fiber".

Training to other personnel does not include the training provided to contractors and subcontractors involved in the network construction and management activities (Creation, Delivery & Assurance) and to other Open Fiber suppliers.

With regard to 2021, following the updating of the MOG 231, the Company, through the Personnel, Organisation and Services Department, updated the educational content of the 231 training plan and more specifically the delivery of training was managed as follows:

- for Open Fiber employees hired up to 31 December 2020 and for all new employees hired from October 2021, e-learning courses have been scheduled on: i) the Ethical Code, ii) the General Part of the MOG and iii) the Special Parts of the MOG (courses updated to reflect the changes made to the MOG approved on 2 February 2021);
- for personnel who have benefited from the previous versions of the above courses in the period between 1 January 2021 and 31 October 2021: performance of the Special Parts course alone (in its updated version).

404-3: PERCENTAGE OF EMPLOYEES RECEIVING REGULAR PERFORMANCE AND CAREER DEVELOPMENT REVIEWS

DIPENDENTI CHE RICEVONO UNA VALUTAZIONE PERIODICA DELLE PERFORMANCE E DELLO SVILUPPO PROFESSIONALE PER CATEGORIA DI OCCUPAZIONE

Employee category	UOM	2019	2020	2021
Managers	%	69%	100%	100%
Middle Managers	%	98%	99%	97%
Office workers	%	86%	96%	71%

EMPLOYEES RECEIVING REGULAR PERFORMANCE AND CAREER DEVELOPMENT REVIEW BY GENDER

Gender	UOM	2019	2020	2021
Female	%	80%	96%	58%
Male	%	90%	97%	83%

EMPLOYEES RECEIVING REGULAR PERFORMANCE AND CAREER DEVELOPMENT REVIEW

Description	UOM	2019	2020	2021
Total of employees receiving regular reviews	**%**	**87%**	**96%**	**75%**

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.

For 2021, 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 2021 rewarding process.

5.6.6 Occupational Health and Safety

403-5: WORKER TRAINING ON OCCUPATIONAL HEALTH AND SAFETY

OURS OF TRAINING ON OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL PROTECTION – OPEN FIBER EMPLOYEES

Description	UOM	2019	2020	2021
Total number of hours of training on health, safety and environment (HSE)	**h**	**8,131**	**7,178**	**5,492**
Average hours of training on HSE per employee	h/employee	9	6	4

HOURS OF TRAINING ON OCCUPATIONAL HEALTH AND SAFETY AND ENVIRONMENTAL PROTECTION – OPEN FIBER EMPLOYEES + OTHER PERSONNEL

Description	UOM	2019	2020	2021
Total number of hours of training on health, safety and environment (HSE)	**h**	**8,295**	**7,266**	**5,570**

Notes:

Training on health, safety and environment includes: HSE compulsory training and HSE required training + pills on HSE management system + pills promoted by HSE function. The reduction in hours per capita in the two-year period 2020-2021 is linked to the reporting and classification of training courses. Indeed, from 2020 onwards, HSE issues have been integrated into on-boarding programmes and are therefore reported overall within courses classified as "on-boarding" (which provide approximately 4h-6h of training dedicated to HSE issues). It follows that the training per capita for the year 2021 is in line with the previous reporting period.

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		UOM	2019	2020	2021
Hours worked		h	1,467,036	1,908,089	2,175,973
Lost Time Injuries (including fatalities)	**Total number**	**n.**	**2**	**0**	**0**
	With high consequences*	n.	0	0	0
	fatalities	n.	0	0	0
Commuting incidents**		n.	4	1	2
Lost Time Injuries Frequency Rate		-	1.36	0.00	0.00
Lost Time Injuries Frequency Rate (including commuting injuries)		-	4.09	0.52	0.92
Frequency rate of 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 only work-related injuries recorded in the three-year period were due to slipping/tripping and assault.		

Note:

* >6 months of absence excluding deaths.

** Only if the transport was organised by the company and the journeys took place within working hours.

403-9: WORK-RELATED INJURIES

WORKERS WHO ARE NOT EMPLOYEES, BUT WHOSE WORK AND/OR PLACE OF WORK IS UNDER THE CONTROL OF THE COMPANY

Descrizione		UOM	2019	2020	2021
Hours worked		h	10,569,521	12,934,989	13,467,097
Infortuni sul lavoro (inclusi fatali)	**Totals**	**n.**	**37**	**36**	**31**
	With high consequences*	n.	1	0	1
	fatalities	n.	0	0	0
Commuting injuries**		n.	0	0	0
Lost Time Injuries Frequency Rate		-	3.50	2.78	2.30
Frequency rate of Lost Time injuries with high consequences		-	0.09	0.08	0.07
Frequency rate of work-related fatalities		-	0.00	0.00	0.00
Main types of injuries			Being run over by vehicles: 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). Crushing of 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.

In the two-year period 2019-2020, the following fatalities were recorded, which are not reported in the table as they are not attributable either to work or to workplaces under the control of Open Fiber: no. 1 injury in 2019 during activities not authorised by Open Fiber nor by the Works Management and not known to the latter since the worksite had been officially declared as closed; no. 1 road accident in 2020 that occurred during a work break and was not attributable either to the area or to worksite activities. For the year 2020, the number of injuries with high consequences and the related frequency index were updated following the extension in 2021 of the number of days of prognosis recorded for an injury (from 28/07/2020 to 12/02/2021).

OVERALL PERFORMANCES (OPEN FIBER EMPLOYEES AND WORKERS WHO ARE NOT EMPLOYEES, BUT WHOSE WORK AND/OR PLACE OF WORK IS UNDER THE COMPANY'S CONTROL)

Description	UOM	2019	2020	2021
Lost Time Injuries Frequency Rate	-	3.24	2.43	1.98
Frequency rate of lost time injuries with high consequences	-	0.08	0.07	0.06
Frequency rate of work-related fatalities	-	0.00	0.00	0.00

Note:

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 activities are calculated starting from the FTE data communicated by the companies in the reporting period. The hours worked by companies involved in Delivery & Assurance activities are calculated on the basis of the figures of the Work Orders (Delivery) and Trouble Tickets (Assurance) multiplied by conversion factors that take into account the average time and average FTE required to complete the work.

5.6.7 Equal opportunity

405-1: DIVERSITY OF GOVERNANCE BODIES AND EMPLOYEES

DIVERSITY OF GOVERNANCE BODIES

Board of Directors by gender and age group			UOM	2019	2020	2021
Members of the Board of Directors as of 31 December	Female	< 30 years old	%	0.0%	0.0%	0.0%
		Between 30 and 50 years old	%	17.0%	17.0%	17.0%
		> 50 years old	%	33.0%	33.0%	17.0%
	Total female		**%**	**50.0%**	**50.0%**	**34.0%**
Membri del CdA al 31 dicembre as of 31 December	Male	< 30 years old	%	0.0%	0.0%	0.0%
		Between 30 and 50 years old	%	17.0%	17.0%	33.0%
		> 50 years old	%	33,0%	33,0%	33,0%
	Total male		**%**	**50,0%**	**50,0%**	**66,0%**
Members of the Board of Directors belonging to vulnerable groups by gender			**UOM**	**2019**	**2020**	**2021**
Members of the Board of Directors belonging to protected categories	Female		%	0.0%	0.0%	0.0%
	Male		%	0.0%	0.0%	0.0%
	Total		**%**	**0.0%**	**0.0%**	**0.0%**

DIVERSITY OF EMPLOYEES

Employees by gender and age group			UOM	2019	2020	2021
Employees with an employment contract as of 31 December	Managers	Female	%	11.1%	12.5%	10.6%
		Male	%	88.9%	87.5%	89.4%
	Middle managers	Female	%	15.2%	17.1%	20.0%
		Male	%	84.8%	82.9%	80.0%
	Office workers	Female	%	31.2%	32.9%	33.6%
		Male	%	68.8%	67.1%	66.4%
	Total female		**%**	**28.4%**	**30.4%**	**31.4%**
	Total male		**%**	**71.6%**	**69.6%**	**68.6%**
Employees by employee category and age group			**UOM**	**2019**	**2020**	**2021**
Employees with an employment contract as of 31 December	Managers	< 30 years old	%	0.0%	0.0%	0.0%
		Between 30 and 50 years old	%	42.2%	39.6%	36.2%
		> 50 years old	%	57.8%	60.4%	63.8%
	Middle managers	< 30 years old	%	0.0%	0.0%	0.0%
		Between 30 and 50 years old	%	79.0%	71.8%	70.0%
		> 50 years old	%	21.0%	28.2%	30.0%
	Office workers	< 30 years old	%	23.2%	21.0%	17.5%
		Between 30 and 50 years old	%	70.5%	73.5%	76.4%
		> 50 years old	%	6.3%	5.5%	6.1%
	Total < 30 years old		**%**	**19.4%**	**18.0%**	**15.1%**
	Total Between 30 and 50 years old		**%**	**70.1%**	**71.9%**	**74.3%**
	Total >50 years old		**%**	**10.5%**	**10.1%**	**10.6%**
Employees belonging to vulnerable groups			**UOM**	**2019**	**2020**	**2021**
Managers			%	0.0%	0.0%	0.0%
Middle Managers			%	0.0%	0.0%	0.8%
Office Workers			%	3.9%	3.4%	3.2%
Total of employees belonging to vulnerable groups			**%**	**3.9%**	**3.4%**	**4.0%**

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.

5.6.8 Efficient management of energy

302-1: ENERGY CONSUMPTION WITHIN THE ORGANIZATION

ENERGY CONSUMPTION WITHIN THE ORGANIZATION

Energy consumption	UOM	2019	2020	2021
Electricity consumption from non-renewable sources	GJ	40,904.8	29,767.4	1,624.1
Electricity consumption from renewable sources*	GJ	-	26,640.1	79,582.3
Energy consumption of natural gas	GJ	3,496.7	2,581.6	2,786.8
Energy consumption of diesel fuel (transport)	GJ	8,785.9	5,025.7	5,379.2
Energy consumption of gasoline fuel (transport)	GJ	2,772.1	2,797.8	7,418.6
Total energy consumption	**GJ**	**55,959.5**	**66,812.6**	**96,791.0**

Notes:
*The gradual conversion towards the purchase of electricity from renewable sources became fully operational in 2020 following the implementation of the Energy Management System.

As regards consumption in 2021, the data relating to electricity and gas consumption were mainly taken from the invoices issued by the respective Energy Suppliers or by the measurements carried out at the meters where present (Turin office), with the exception of electricity consumption at the Genoa office, which was estimated on the basis of the consumption of the previous year as reported by the apartment building (since the data were not available at the end of the reporting period) and with the exception of the data relating to the consumption of electricity and natural gas for the Pescara office, which was estimated on the basis of the flat-rate fee provided for in the contract 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.

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 2020 and 2021.

302-3: ENERGY INTENSITY

ENERGY INTENSITY

Description	UOM	2019	2020	2021
Total of energy consumption	GJ	55,959.5	66,812.6	96,791.0
Energy intensity ratio	**MJ/REU**	**7.0**	**6.3**	**7.2**

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 real estate units that are connected as of 31/12 of the reporting year is the organisation-specific parameter for calculating the intensity.

5.6.9 Climate-changing emissions

305-1: DIRECT (SCOPE 1) GHG EMISSIONS

DIRECT (SCOPE 1) GHG EMISSIONS

Description	UOM	2019	2020	2021
Scope 1 emissions from fossil fuels	ton.CO2eq	1,058.7	720.6	1,093.5
Scope 1 emissions from refrigerant gases	ton.CO2eq	175.7	67.8	176.6
Total Scope 1 emissions	**ton.CO2eq**	**1,234.4**	**788.4**	**1,270.1**

Notes:
The gases considered in the calculation are CO2, CH4, N2O 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:

- 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;
- To calculate emissions associated with diesel and gasoline consumption, the Department for Environment Food & Rural Affairs (DEFRA) conversion factors were used - year 2021;
- For the calculation of emissions related to natural gas consumption, the conversion factor given in the Table of National Standard Coefficients for CO2 Emissions Inventory in the UNFCCC National Inventory issued by ISPRA and MATTM was used.

305-2: ENERGY INDIRECT (SCOPE 2) GHG EMISSIONS

ENERGY INDIRECT (SCOPE 2) GHG EMISSIONS – LOCATION-BASED

Description	UOM	2019	2020	2021
Scope 2 emissions - Location-based	ton.CO2eq	3,051.7	4,208.3	5,860.4

ENERGY INDIRECT (SCOPE 2) GHG EMISSIONS – MARKET-BASED

Description	UOM	2019	2020	2021
Scope 2 emissions – Market-based	ton.CO2eq	5,293.6	3,852.3	206.9

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.
The significant reduction in Scope 2 Market-based emissions in 2021 compared to 2020 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 organization:

- Location-based approach: application of emission factors published by ISPRA in report no. 343/2021 "Indicators of efficiency and decarbonisation of the national energy system and the electricity sector";
- Market-based approach: application of the emission factors published by the AIB Association of Issuing Bodies - European Residual Mixes 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	UOM	2019	2020	2021
Scope 1 emissions	ton.CO2eq	1,234.4	788.4	1,270.1
Scope 2 emissions - Location-based	ton.CO2eq	3,051.7	4,208.3	5,860.4
GHG Emissions (Scope 1 + Scope 2 Location-based)	ton.CO2eq	4,286.1	4,996.7	7,130.5
GHG emissions intensity ratio (Scope 1 + Scope 2 Location-based)	**kg.CO2eq/REU**	**0.54**	**0.47**	**0.53**

GHG EMISSIONS (SCOPE 1 + SCOPE 2 MARKET-BASED)

Description	UOM	2019	2020	2021
Scope 1 emissions	ton.CO2eq	1,234.4	788.4	1,270.1
Scope 2 emissions – Market-based	ton.CO2eq	5,293.6	3,852.3	206.9
GHG emissions (Scope 1 + Scope 2 Market-based)	ton.CO2eq	6,528.1	4,640.7	1,477.0
GHG emissions intensity ratio (Scope 1 + Scope 2 Market-based)	**kg.CO2eq/REU**	**0.82**	**0.44**	**0.11**

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 the Scope 1 and Scope 2 emissions in GRI 305-1 and GRI 305-2 disclosures

The number of housing units that are connected as of 31/12 of the reported year is the organization-specific parameter for calculating intensity

5.6.10 Responsible supply chain management

308-1: NEW SUPPLIERS THAT WERE SCREENED USING ENVIRONMENTAL CRITERIA

NEW SUPPLIERS THAT WERE SCREENED USING ENVIRONMENTAL CRITERIA

Description	UOM	2019	2020	2021
Total number of new suppliers	n.	-	90	230
New suppliers that were screened using environmental criteria	n.	-	20	51
New suppliers that were screened using environmental criteria	**%**	**-**	**22%**	**22%**

Notes:
Until December 2019, Open Fiber used the Parent Company's supplier register. Subsequently, it set up its own supplier portal and developed its own supplier register. New suppliers include those subjected to a qualification process in the reporting year. The environmental criteria include possession of ISO 14001 certification and/or possession of authorization for waste management (e.g., National Register of Environmental Managers).

308-2: NEGATIVE ENVIRONMENTAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN

NEGATIVE ENVIRONMENTAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN

Description	UOM	2019	2020	2021
Suppliers assessed for environmental impacts*	n.	-	43	53
Suppliers identified as having significant actua and potential negative environmental impacts	n.	-	43	53
Suppliers identified as having significant actual and potential negative environmental impacts, with which improvements were agreed upon as a result of assessment**	n.	-	0	22
Suppliers identified as having significant actual and potential negative environmental impacts, with which improvements were agreed upon as a result of assessment	**%**	**-**	**0%**	**42%**
Suppliers identified as having significant actual and potential negative environmental impacts, with whom relationships have been terminated as a result of the screening	n.	-	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%**

Notes:
The process of performance assessment on environmental issues went into effect in 2020. 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	UOM	2019	2020	2021
Total number of new suppliers	n.	-	90	230
New suppliers that were screened using social criteria	n.	-	86	178
New suppliers that were screened using social criteria	**%**	**-**	**96%**	**77%**

Notes:
Until December 2019, Open Fiber used the Parent Company's supplier register. Subsequently, it set up its own supplier portal and developed its own supplier register. New suppliers include those subjected to a qualification process in the reporting year. The social criteria include the possession of certifications according to ISO 45001, SA8000, ISO 9001 standards.

414-2: NEGATIVE SOCIAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN

NEGATIVE SOCIAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN

Description	UOM	2019	2020	2021
Suppliers assessed for social impacts*	n.	-	43	65
Suppliers identified as having significant actual and potential negative social impacts	n.	-	43	65
Suppliers identified as having significant actual and potential negative social impacts, with which improvements were agreed upon as a result of assessment	n.	-	6	40
Suppliers identified as having significant actual and potential negative social impacts, with which improvements were agreed upon as a result of assessment	**%**	**-**	**14%**	**62%**
Suppliers identified as having significant actual and potential negative social impacts, with which relationships were terminated as a result of assessment**	n.	-	1	2
Suppliers identified as having significant actual and potential negative social impacts, with which relationships were terminated as a result of assessment	**%**	**-**	**2%**	**3%**

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 health and safety at work, 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 2021 (irregularities with INPS [Italian National Institute for Social Security], INAIL [Italian National Institute for Insurance against Accidents at Work]).

** During 2021, two consortium members were excluded from the access mechanism/supplier register due to contribution irregularities that have not been remedied.

5.6.11 Relations with the territory

413-1: OPERATIONS WITH LOCAL COMMUNITY ENGAGEMENT, IMPACT ASSESSMENTS, AND DEVELOPMENT PROGRAMS

OPERATIONS WITH LOCAL COMMUNITY ENGAGEMENT, IMPACT ASSESSMENTS, AND DEVELOPMENT PROGRAMS

Description	UOM	2019	2020	2021
Operations with local community engagement, impact assessments, and/or development programs	%	100%	100%	100%

Note:
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.

5.7 GRI CONTENT INDEX

The GRI Content Index contains specific references to the 2021 Sustainability Report and to other Open Fiber documents and tools (e.g., website) in which a more detailed discussion or in-depth analysis of a specific topic or standard can be found.

For each disclosure, the following was reported:

- the number and description of the referenced disclosure;
- the page number or links where the information can be found, either within the report or on other documents published by Open Fiber;
- comments and omissions, if any.

GENERAL DISCLOSURE

GRI STANDARD		DESCRIPTION	REF.	COMMENTS AND OMISSIONS
	Organizational profile			
GRI 102: Informativa Generale 2016	102-1	Name of the organization	8	Open Fiber S.p.A.
	102-2	Activities, brands, products, and services	34 - 41	For further details: www.openfiber.it
	102-3	Location of headquarters	8	Legal seat Viale Certosa, 2 20155 Milan Headquarters Via Laurentina, 449 00142 Rome
	102-4	Location of operations	8-12, 34	
	102-5	Ownership and legal form	8,13	
	102-6	Markets served	32-39	
	102-7	Scale of the organization	8, 16-20, 130-131, 176	
	102-8	Information on employees and other workers	130-131, 176	
	102-9	Supply chain	58 - 61	
	102-10	Significant changes to the organization and its supply chain	13, 58-59	By organizational arrangement dated March 12, 2021, effective April 2021, the Business Development Department was renamed Business Development & Data Office and was assigned to A. Sannino; the Purchasing & Services Department was assigned to S. Paggi; and the Network & Operations Department was assigned to G. Sgariglia. On August 14, 2021, Open Fiber's Board of Directors appointed Francesca Romana Napolitano, formerly a board member of Open Fiber, as Chief Executive Officer and presented a new organizational structure to the Board, with Mario Rossetti appointed as General Manager. Following the completion of the sale and purchase of the equity investment by CDP Equity and the Macquarie Group on December 3, 2021, Barbara Marinali was appointed Chairperson of the company and Mario Rossetti was appointed Chief Executive Officer and General Manager. As a result of these changes, the new corporate organization was approved by organizational arrangement on December 09, 2021.

GENERAL DISCLOSURE

GRI STANDARD		DESCRIPTION	REF.	COMMENTS AND OMISSIONS
	102-11	Precautionary Principle or approach	51-54, 60-61, 90-102	
	102-12	External initiatives	109-111, 118-123	
	102-13	Membership of associations	166-169	
	Strategy			
	102-14	Statement from a senior executive	4-5	
	102-15	Key impacts, risks, and opportunities	8, 32, 47-54, 60-61, 149-153	
	Ethics and integrity			
	102-16	Values, principles, standards, and norms of behavior	8-9, 47-49, 131	
	102-17	Mechanisms for advice and concerns about ethics	47-49	
	Governance			
	102-18	Governance structure	13-15	
	Stakeholder engagement			
	102-40	List of stakeholder groups	158-164	
	102-41	Collective bargaining agreements	130-131	All employees (100%) are covered by a national collective bargaining agreement.
	102-42	Identifying and selecting stakeholders	158-164	
	102-43	Approach to stakeholder engagement	158-164	
	102-44	Key topics and concerns raised	158-164	
	Reporting practice			
	102-45	Entities included in the consolidated financial statements	190	The data and information reported within Open Fiber's financial statements refer to Open Fiber S.p.A.
	102-46	Defining report content and topic Boundaries	170-173	
	102-47	List of material topics	170-173	Open Fiber has identified its material topics within the materiality matrix.

SPECIFIC DISCLOSURE

GRI STANDARD		DESCRIPTION	REF.	COMMENTS AND OMISSIONS
GRI 102: General Disclosures 2016	102-48	Restatements of information	176	The previous version of Open Fiber's 2020 Sustainability Report is available on the company's website https://openfiber.it/corporate/sostenibilita/obiettivi-sostenibilita/ For changes in figures for previous years, please refer to the comments in the audited financial statements.
	102-49	Changes in reporting	170	As a result of the change in equity ownership in 2021, it was necessary to assess how this transaction may have affected the materiality matrix identified in 2020. The analysis brought out new issues to be considered as "topics" within Open Fiber's 2021 materiality matrix: "Efficient energy management" and "Diversity and Equal Opportunity".
	102-50	Reporting period	158, 176	The adopted reporting period for the report is 01/01/2021 through 31/12/2021.
	102-51	Date of most recent report	-	The Sustainability Report 2020 was approved by the Board of Directors of Open Fiber on 29/06/2021 and is available on the company website at the following link: https://openfiber.it/corporate/sostenibilita/obiettivi-sostenibilita/
	102-52	Reporting cycle	-	The reporting cycle is annual.
	102-53	Contacts point for questions regarding the report	-	csv.of@openfiber.it
	102-54	Claims of reporting in accordance with the GRI Standards	158	This report has been prepared in accordance with the GRI Standards: Core option.
	102-55	GRI content index	190-198	Open Fiber has integrated within this report the table of contents according to the specifications provided within the GRI disclosure 102-55.
	102-56	External assurance	201	Report of auditing firm Deloitte.

SPECIFIC DISCLOSURE

GRI STANDARD		DESCRIPTION	REF.	COMMENTS AND OMISSIONS
		Economic performance		
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	16-20	
	103-3	Evaluation of the management approach	16-20	
GRI 201: Economic performance 2016	201-1	Direct economic value generated and distributed	19-20, 177	
		Indirect economic impacts		
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	16-20	
	103-3	Evaluation of the management approach	16-20	
GRI 203: Indirect economic impacts 2016	203-1	Infrastructure investments and services supported	16-20, 72-73	
	203-2	Significant indirect economic impacts	16-20, 70-73, 110-116	
		Anti-corruption		
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	47-50	
	103-3	Evaluation of the management approach	47-50	
GRI 205: Anticorruption 2016	205-1	Operations assessed for risks related to corruption	47-50, 178	
	205-3	Confirmed incidents of corruption and actions taken	47-50	No reported incidents of corruption in the last three years 2019-2021
		Anti-competitive behavior		
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	56-57	
	103-3	Evaluation of the management approach	56-57	
GRI 206: Anti-competitive behaviour 2016	206-1	Legal actions for anti-competitive behavior, antitrust and monopoly practices	56-57	In 2021, there are no reported pending or completed legal actions against Open Fiber relating to anti-competitive behaviour and antitrust violations.

SPECIFIC DISCLOSURE

GRI STANDARD		DESCRIPTION	REF.	COMMENTS AND OMISSIONS
	Energy			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	97-100	
	103-3	Evaluation of the management approach	97-100	
GRI 302: Energy 2016	302-1	Energy consumption within the organization	97-100, 185	
	302-3	Energy intensity	97-100, 185	
	Emissions			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	97-103	
	103-3	Evaluation of the management approach	97-103	
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	97-103, 186-187	
	305-2	Energy indirect (Scope 2) GHG emissions	97-103, 186-187	
	305-4	GHG emissions intensity	97-103, 186-187	
	Supplier environmental screening			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	58-61	
	103-3	Evaluation of the management approach	58-61	
GRI 308: Supplier environmental screening 2016	308-1	New suppliers that were screened using environmental criteria	58-61, 187	
	308-2	Negative environmental impacts in the supply chain and actions taken	58-61, 188	

SPECIFIC DISCLOSURE

GRI STANDARD		DESCRIPTION	REF.	COMMENTS AND OMISSIONS
	Occupazione			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	130-132	
	103-3	Evaluation of the management approach	130-132	
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	130-132, 178	
	401-2	Benefits provided for full-time employees that are not provided to temporary or part-time employees	139-141	Benefits such as supplemental health insurance, COVID-19 risk supplemental health insurance; prevention packages are not provided for employees on fixed-term contracts. The following benefits are provided for all employees (full-time and part-time, permanent and fixed-term): insurance for occupational and non-occupational accidents; supplementary parental leave, supplementary indemnity during the months of leave; extra leave for bereavement, sickness of children, medical appointments; meal vouchers; supplementary pension; the possibility of converting PDR (Performance Bonus) into welfare goods and services and benefits linked to wellness (for example, in 2021 a virtual platform was created for physical activity at home and an APP was made available for access to a network of gyms and sports centres at very advantageous conditions, as well as the possibility of receiving a personalized diet plan from dedicated professionals). In 2020 and 2021, the possibility of working from home was granted to the entire corporate workforce, also in consideration of the COVID-19 emergency.
	401-3	Parental leave	140, 179	
	Occupational Health and Safety			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	51-52, 149-153	
	103-3	Evaluation of the management approach	51-52, 149-153	

SPECIFIC DISCLOSURE

GRI STANDARD		DESCRIPTION	REF.	COMMENTS AND OMISSIONS
	Occupational Health and Safety			
GRI 403: Occupational Health and Safety 2018	403-1	Occupational Health and Safety management system	51-52, 149-153	
	403-2	Hazard identification, risk assessment, and incident investigation	51-52, 149-153	
	403-3	Occupational health services	149-150	
	403-4	Worker participation, consultation, and communication on Occupational Health and Safety	51-52, 149-150	
	403-5	Worker training on Occupational Health and Safety	51-52, 133-135, 149-150	
	403-6	Promotion of worker health	51-52, 133-135, 142-143, 149-153	
	403-7	Prevention and mitigation of Occupational Health and Safety impacts directly linked by business relationships	152-153	
	403-8	Workers covered by an Occupational Health and Safety management system	51-52	Open Fiber's health and safety management system, certified ISO 45001:2018, covers all employees referred to in the 102-8 Disclosure and all those who in any capacity collaborate with Open Fiber in achieving its objectives. With reference to companies operating in Creation, Delivery & Assurance activities, the number of FTEs estimated for the year 2021 is equal to a 7,387.
	403-9	Work-related injuries	149-151, 183	
	Training and education			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	133-139	
	103-3	Evaluation of the management approach	133-139	
GRI 404: Training and education 2016	404-1	Average hours of training per year per employee	133-139, 180	
	404-3	Percentage of employees receiving regular performance and career development reviews	181	

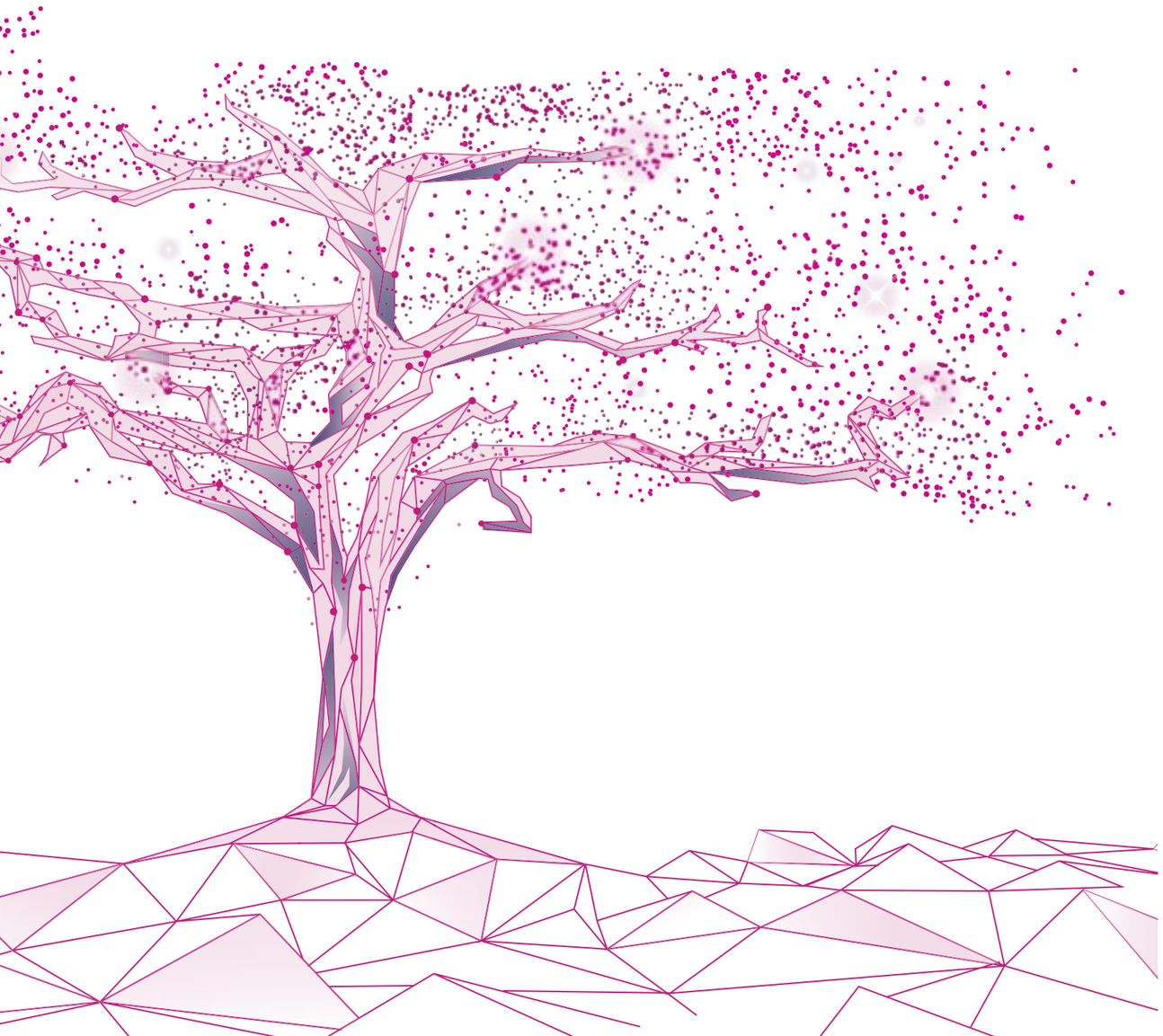
SPECIFIC DISCLOSURE

GRI STANDARD		DESCRIPTION	REF.	COMMENTS AND OMISSIONS
	Diversity and Equal Opportunity			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	145-149	
	103-3	Evaluation of the management approach	145-149	
GRI 405: Diversity and Equal Opportunity	405-1	Diversity of governance bodies and employees	184	
	Human Rights Assessment			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	47-49	
	103-3	Evaluation of the management approach	47-49	
GRI 412: Human Rights Assessment 2016	412-2	Employee training on human rights policies or procedures	47-49, 133-134, 180	
	Local Communities			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	109-111, 123, 158-164	
	103-3	Evaluation of the management approach	109-111, 123, 158-164	
GRI 413: Local Communities 2016	413-1	Operations with local community engagement, impact assessments, and development programs	109-111, 123, 158-164, 189	

SPECIFIC DISCLOSURE

GRI STANDARD		DESCRIPTION	REF.	COMMENTS AND OMISSIONS
	Supplier Social Assessment			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	58-61	
	103-3	Evaluation of the management approach	58-61	
GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	58-61, 188	
	414-2	Negative social impacts in the supply chain and actions taken	58-61, 189	
	Customer Health and Safety			
GRI 103: Management approach 2016	103-1	Explanation of the material topic and its Boundaries	170-173	
	103-2	The management approach and its components	42-46, 53, 149-152	
	103-3	Evaluation of the management approach	53, 149-152	
GRI 416: Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	42-46, 51-55	100% of the services provided by Open Fiber to Operators are compliant with current customer health and safety regulations and therefore include an assessment of Health and Safety impacts throughout their delivery. Moreover, once the works have been completed, the Open Fiber infrastructure is subject to testing which, in the C&D Clusters, is carried out by the grantor Infratel Italia before being put up for sale.

Report of the Auditing Firm



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