



*our journey*  
**TO NET ZERO**

**Executive Summary**  
*NET ZERO PLAN*  
**of Open Fiber S.p.A**

open fiber




# Abstract

This document represents the summary of **Open Fiber's Net Zero Plan**, approved by the company's Board of Directors on November 16<sup>th</sup>, 2023, and aims to illustrate the company's path toward decarbonization of its activities and value chain, introducing tangible goals and strategies to tackle climate change, considered one of the key pillars of **Open Fiber's** sustainability strategy. Within the document the definition of **Net Zero** is reported, and thus how **Open Fiber** is committed to achieve this goal in the long-term horizon, following the criteria defined by the **Net Zero Standard** of the *Science Based Target initiative*<sup>1</sup>. Furthermore, the scenarios identified as a reference for the evolution of the landscape in which the company operates are illustrated. In connection with these scenarios, **Open Fiber's** carbon footprint is reported, i.e., the **ISO14064-1** certified measurement of direct and indirect business impacts due to the company's emissions and its value chain, a crucial first step in the development of the climate path of reduction.

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<sup>1</sup> The Science Based Targets initiative (SBTi) is a partnership between CDP (formerly the Carbon Disclosure Project), the UN Global Compact, WRI (World Resources Institute) and WWF that aims to guide the private sector to take climate action by helping companies set emission reduction targets in line with science. SBTi Corporate Net-Zero Standard is available at the following link:  
<https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf>

Beginning with the **company's Energy Plan** and **Business Plan** guidelines, reduction actions developed to decarbonize **Open Fiber's** operations and reduce emissions associated with the **value chain** are presented. Additional actions, defined as supplementary and enabling, are integrated with the actions already planned, generating two possible future scenarios, named **Industrial Scenario** and **Ambitious Scenario**: these scenarios outline the opportunities for achieving the reduction targets envisaged in the medium (2030) and long (2040) term.



Complementing the company's commitment, the mechanisms for funding climate action through certified carbon credits that **Open Fiber** commits to as supplementary actions to the path to **Net Zero** are also presented. In conclusion, the resulting targets and projected emission trajectories of **Open Fiber** up to 2040 are analyzed.

# Index

01	<b>Introduction</b>	<b>6</b>
02	<b>GHG Inventory and emission hotspots</b>	<b>12</b>
03	<b>Decarbonization actions and reference scenarios</b>	<b>16</b>
04	<b>Mechanisms for offsetting and neutralizing emissions</b>	<b>20</b>
05	<b>Goals of the Net Zero Plan</b>	<b>24</b>
06	<b>Conclusions</b>	<b>26</b>

# 01 Introduction

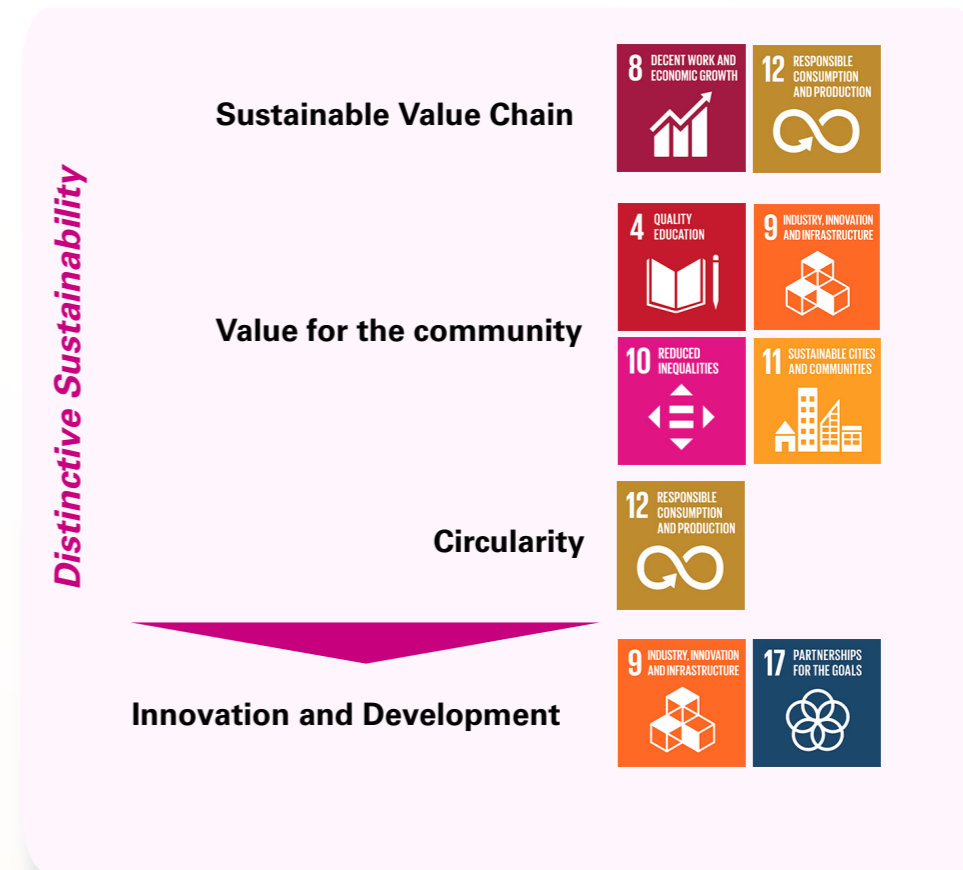
## Net Zero Commitment in the context of Open Fiber's sustainability strategy

Open Fiber embraces a vision where *ESG (Environmental Social & Governance)* issues are integrated into the corporate strategy, making them key elements for long-term success. Consistent with its mission, Open Fiber starts from the awareness that it plays a crucial role in the country's digital transformation and devotes, by its very nature, great attention to issues such as innovation and technology aimed at reducing the digital divide that today afflicts many areas of the national territory. Ensuring universal access to Internet with the ambitious goal of providing national coverage of 1 Gbit/s by 2026 even in peripheral areas (so-called market failure areas) can contribute positively to the sustainable development of the entire nation. In addition, the fiber network serves as an enabler for cutting-edge services, including smart cities, smart grids, e-health, smart working and distance learning, significantly mitigating the environmental footprint of businesses, individuals and public administration.

Open Fiber's sustainability strategy is based on nine pillars, each of which is aimed at creating value and fully integrating sustainability into the conduct of business, covering many of the 2030 Agenda goals such as fighting climate change, protecting and developing human capital, diversity, equity and inclusion, and efficient resource management. More general themes are complemented by distinctive contributions of Open Fiber's commitment to the long-term goals: the promotion of sustainable value chains and circularity, the creation of value for the communities, and investment in innovation and development. All these pillars, together with responsible communication, represent the company's utmost commitment to mitigating impacts and generating benefits for society and the environment.

In the company's sustainability strategy, fighting climate change is an essential pillar for success and value creation in the medium to long term. Open Fiber has long been on a virtuous path aimed at limiting environmental impacts by making extensive use of the reuse of existing infrastructure, using low-impact excavation techniques, implementing an ISO 50001-certified energy management system, and purchasing 100% of electricity from renewable sources.

## The pillars of Open Fiber's sustainability strategy



Recognizing the value of the measures already taken in place, the company decided to step further ahead toward decarbonization and attribute the *Net Zero* goal a strategic role of involving the entire value chain and all stakeholders. Moreover, this goal enables the company to pursue additional benefits such as gaining a competitive position in the market, enhancing performance in ESG ratings, improving reputation among stakeholders, anticipating regulatory and market developments, and achieving a role as a leading company in the transition to a low-carbon economy.

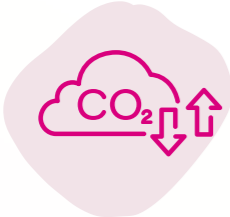
## Open Fiber's climate path and the birth of the Net Zero Plan

The scale of the effort needed to fight climate change is very high, as evidenced by the global context in which Open Fiber is addressing sustainability challenges. The planet's average temperature has already risen more than 1°C above pre-industrial levels, and with current emissions, the carbon budget left to limit the increase to 1.5°C could run out within 10 years. The concept of *Net Zero*, or "net zero emissions," implies a balance between greenhouse gas emissions and removals and, according to the IPCC<sup>2</sup>, is a global goal to be achieved by 2050 at the latest.



<sup>2</sup> The Intergovernmental Panel on Climate Change (*IPCC- Intergovernmental Panel on Climate Change*) is the scientific forum of the United Nations formed in 1988 for the purpose of studying global warming.

Open Fiber’s decarbonization strategy aims to achieve Net Zero by 2040 through investments to mitigate climate impacts consistent with science-based guidance from the scientific community on climate change. Specifically, the standards and requirements referenced are those of the Science Based Target initiative (SBTi) and Macquarie Asset Management (MAM) guidelines, which include, in summary:



The measurement of Scope 1, 2 and 3 emissions in line with the GHG Protocol<sup>3</sup> standard and identification of the base year for establishing reduction targets, certified according to ISO 14064-1;



The definition of *Near-Term* targets by 2030 according to an emissions reduction trajectory compatible with keeping temperatures within 1.5°C, which requires a 42% reduction for Scope 1, 2 and 3 emissions;



The establishment of *Long-Term* targets by 2040 according to an emissions reduction trajectory compatible with containing temperatures to within 1.5°C that requires an extreme reduction (-90%) in emissions on all Scope 1, 2 and 3;



Neutralization of emissions from all *Scope* that cannot be reduced in the long term horizon through actions enabling atmospheric carbon removal (*carbon removals*) as the last step necessary to achieve *Net Zero* status.

<sup>3</sup> Based on a 20-year partnership between the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), the GHG Protocol works with governments, industry associations, NGOs, businesses and other organizations. It has developed a set of standards that establishes a comprehensive and standardized global framework for measuring and managing greenhouse gas (GHG) emissions from private and public sector operations, value chains, and mitigation actions.



Along that path, the company plans to contribute to funding climate action even outside its value chain by investing in climate action projects that generate certified carbon credits at least equal to the scale of Scope 1 and 2 emissions. In this way, Open Fiber adheres to the concept of “*Beyond Value Chain Mitigation*” by fostering climate action even before it reaches its reduction targets and long before it can acquire Net Zero company status.

From the formalization of all these commitments comes the Net Zero Plan developed by Open Fiber and summarized in this document. It constitutes the overall first strategic document aimed at supporting the decarbonization strategies of the company, its partners and customers by contributing, in turn, to the achievement of their emission reduction targets in a concrete way.

The Net Zero Plan, validated by the Sustainability Committee, is approved by the company’s Board of Directors.

# 02 GHG Inventory and emission hotspots

Measurement of greenhouse gas (GHG) emissions is the first step a company may take toward developing a robust climate strategy. As of 2022, Open Fiber has expanded its GHG emissions inventory<sup>4</sup> to include indirect emissions related to its value chain. In line with the technical guidelines of the GHG Protocol, the company's carbon footprint includes three scopes:



## Scope 1

Direct emissions produced by the company owned operations;



## Scope 2

Indirect emissions related to energy purchased for company consumption;



## Scope 3

Indirect emissions related to activities outside the scope of the company's facilities but related to the Open Fiber value chain<sup>5</sup>.

<sup>4</sup> List of processes that produce greenhouse gases into the atmosphere with an indication of their respective emissions (also referred to as "carbon footprint").

<sup>5</sup> Within these indirect emissions, the following categories applicable to the business were quantified: Purchased goods and services and capital goods, Fuel and energy-related activities, Upstream transportation and distribution, Waste generated in operations, Business travel, Employee commuting/Smart Working, Upstream leased assets, and Downstream leased assets.



Open Fiber's GHG emissions inventory has been certified by an independent third party in compliance with ISO 14064-1<sup>6</sup>. In 2022, following a market-based approach, Open Fiber emitted 2,184 tons of CO<sub>2</sub>e in Scope 1 and 2 (1,654 tCO<sub>2</sub>e and 530 tCO<sub>2</sub>e, respectively), with an average intensity of 0.14 kg CO<sub>2</sub>e per household passed, considering 15.5 million households passed. Scope 3 emissions were extremely significant with a contribution of 328,213 tCO<sub>2</sub>e, mainly due to the categories "Purchased goods and services" and "Capital goods" which accounted for nearly 98 percent of total Scope 3 emissions (321,724 tCO<sub>2</sub>e).

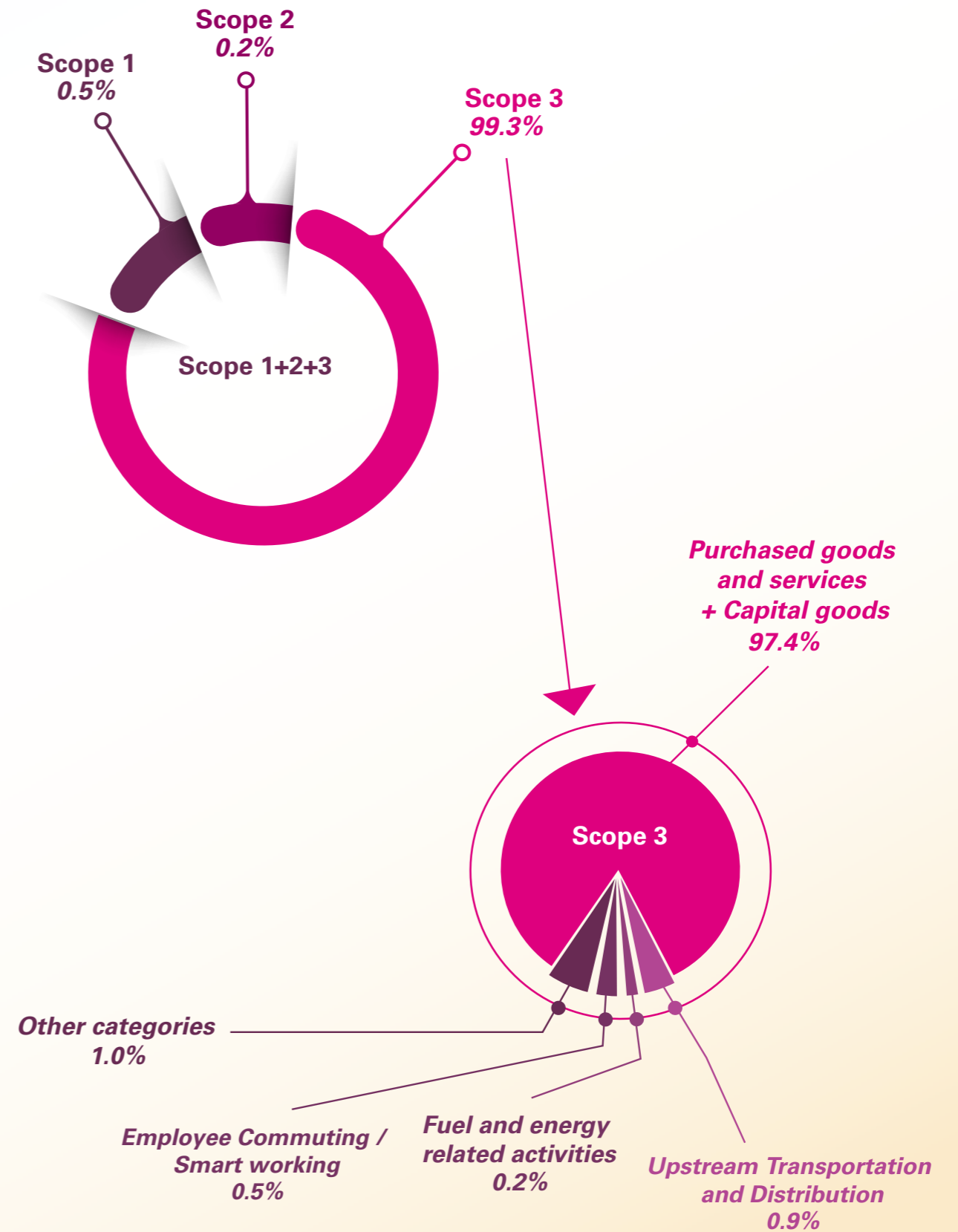
Scope 1 and 2 emissions, as well as the two Scope 3 categories representing supply chain-related emissions (in particular, work related to the expansion of network infrastructure throughout the country), are the main focus of reduction actions to achieve the *Net Zero* goal. In compliance with SBTi's requirements to address reduction targets by covering at least 90% of Scope 3 emissions while avoiding dispersion of efforts on minority categories, Open Fiber considers a baseline of 323,909 tCO<sub>2</sub>e (including Scope 1, 2 and 3 emissions for the "Purchased Goods and Services" and "Capital Goods" categories of Scope 3), rather than the gross total of 330,397 tCO<sub>2</sub>e as resulted for the 2022 greenhouse gas inventory.

<sup>6</sup> In line with the emission scopes (scope) required by SBTi for the formulation of emission reduction targets, this document reports a reclassification of emissions following the GHG Protocol.

## GHG Emissions Inventory - Year 2022

Emission Categories	Market Based Emissions (tCO <sub>2</sub> e)	Percentage Total Market-Based Emissions
<b>Scope 1: direct emissions</b>	<b>1,654.2</b>	<b>0.5%</b>
Fossil Fuel Consumption - Natural gas	126.7	0.0%
Fossil Fuel Consumption - Petrol	845.2	0.3%
Fossil Fuel Consumption - Diesel	382.2	0.1%
Refrigerant leaks from air conditioning systems	300.1	0.1%
<b>Scope 2: indirect emissions from the purchase of electricity</b>	<b>530.0</b>	<b>0.2%</b>
<b>Scope 3: other indirect emissions</b>	<b>328,213.0</b>	<b>99.3%</b>
Category 3.1 – Purchased goods and services + Category 3.2 - Capital goods	321,724.3	97.4%
Category 3.3 - Fuel- and Energy-Related Activities	510.5	0.2%
Category 3.4 – Upstream Transportation and Distribution	2,852.3	0.9%
Category 3.5 – Waste Generated in Operations	311.5	0.1%
Category 3.6 – Business Travel	134.8	0.0%
Category 3.7 – Employee Commuting / Smart working	1,800.7	0.5%
Category 3.8 – Upstream Leased Assets	61.5	0.0%
Category 3.13 – Downstream Leased Assets	817.5	0.2%
<b>Total GHG Emissions</b>	<b>330,397.2</b>	<b>100%</b>

## Emission Categories - Year 2022 (base year)





# 03 Decarbonization actions and reference scenarios

## Actions to reduce emissions

Open Fiber has identified a series of strategic actions to reduce its GHG emissions and pursue the Net Zero goal. These actions are included in the company's planning documents and address both emissions related to the company's perimeter (Scope 1 and 2 - main reference: Energy Plan) and indirect emissions related to business evolution and value chain impacts (Scope 3 - main reference: Business Plan).

The **planned actions** are decarbonization actions that will be activated in the short term (2024-2025) and are included in the interventions identified in the Open Fiber Energy Plan. These actions rely on precise monitoring of energy consumption (aimed at the early detection of any anomalies), optimization in the operation of facilities (e.g., scheduled shutdown of facilities serving the locations thanks to smart working), and reduction of the climate footprint of the company car fleet (e.g., awareness raising for the choice of *full electric* or *plug-in company* cars and efficient driving).

Open Fiber's Energy Plan aims to rationalize and make energy consumption more efficient, decarbonize emissions, and use renewable energy. This plan includes two categories of interventions:

- **Infrastructure Interventions that apply to company' facilities, technological sites, and vehicles, with the goal of:**
  - o reduction and rationalization of energy consumption;
  - o decarbonization: reduction, zeroing or offsetting of CO<sub>2</sub> emissions;
  - o use of energy from renewable sources: installation of renewable source systems (wind, photovoltaic, etc.);
  - o energy monitoring: increased awareness of consumption also for the implementation of the interventions mentioned in the previous points.
- **Operational Management interventions on business processes aimed at:**
  - o computerization of processes: digitization of data acquisition, monitoring, analysis, and reporting;
  - o the implementation and maintenance of the Energy Management System following ISO 50001;
  - o optimization of business processes from an energy and environmental perspective.

## Additional factors for decarbonization: the evolution of the external scenario

Achieving such an ambitious goal requires that all stakeholders and supply chains relevant to Open Fiber and the telecommunications sector contribute to decarbonization collectively<sup>8</sup>.

In addition to the actions described in the previous paragraphs, the achievement of Open Fiber's targets also depends on the realization of a general level of decarbonization in line with keeping global warming within 1.5°C in the different industrial sectors, particularly the Italian energy system: within the Scenario Description Document produced by Terna S.p.A. and Snam S.p.A, scenarios such as *Fit-for-55* (FF55) for 2030 and *Global Ambition* (GA) for 2040 are reported, aligned with the emission reduction targets set by the European Climate Law. In defining the external scenario, *International Energy Agency* (IEA) projections were also considered, particularly the future incidence of green gases (biomethane and hydrogen) on total gas demand, which is useful for modeling emission factors associated with specific commodity groups in the calculation of indirect Scope 3 emissions.

In addition to the actions already identified in the Energy Plan, the Net Zero Plan additional needed actions (so-called **supplementary actions**) to reduce greenhouse gas emissions in Scope 1 and Scope 2. These actions will be subject to further techno-economic analysis and activated in the short to medium term (as a rule, starting in 2026). These actions include the enhancement of some actions identified in the Energy Plan (e.g., 100% renewable electricity supply for condominium consumption<sup>7</sup>, extension of periodic plant shutdown days thanks to *smart working*, plan to convert the car fleet to lower-impact vehicles) and additional actions that will be subject to feasibility analysis (e.g., replacement of fossil fuel plants with alternatives that allow the use of renewable sources).

Above these, Open Fiber has included additional **"enabling"** actions towards the *Net Zero* goal. These actions mainly address the *Scope 3* emissions and aim to promote *sustainable* practices within the supply chain. These actions have the main objective of strengthening corporate sustainable procurement practices (e.g., membership as "value chain leader" in an ESG rating platform, integration of ESG requirements in tenders, introduction of a dedicated *ESG Vendor Rating* index to assess performance during contract execution) and will enable the generation of positive impacts on the decarbonization of activities.

<sup>7</sup> Portion of electricity not directly purchased by the company.

<sup>8</sup> Open Fiber's goal is to embed these data and scenarios into its emissions reduction strategy, considering the influence of the energy landscape on the company's direct and indirect emissions.

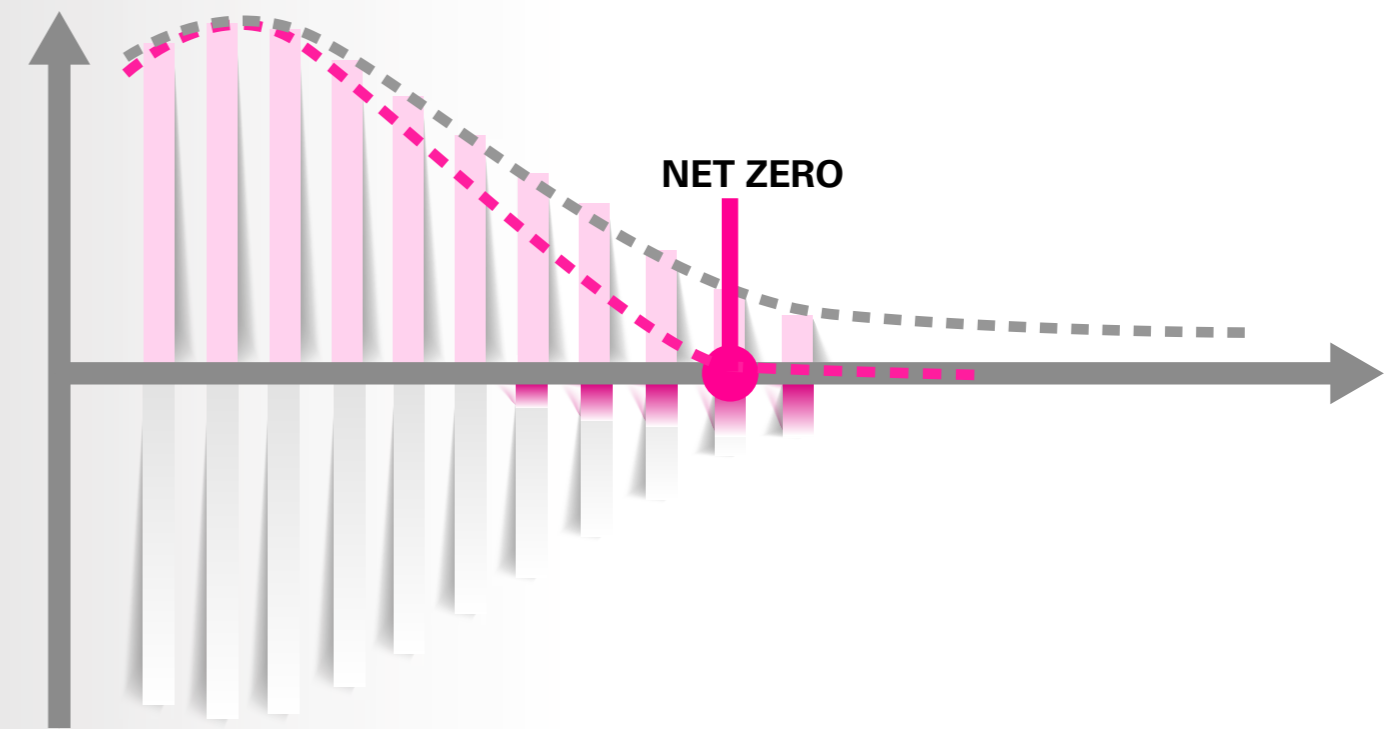
# 04 Mechanisms for offsetting and neutralizing emissions

## Funding climate action

To achieve the Net Zero goal in line with the goals of the Paris Agreement, it is not enough just to minimize emissions; the concept of “negative emissions” must also be considered. This implies the use of carbon removals as tools for sequestering carbon from the atmosphere aimed at rebalancing residual emissions and reducing greenhouse gas concentrations.

However, at present, options for “negative emissions” are limited due to factors of scalability, technological and economic challenges, and lack of appropriate regulations and certification. The tools available today are climate action financing mechanisms in the voluntary carbon market, known as *Beyond Value Chain Mitigation* (BVCM). These financial efforts are directed toward climate mitigation projects independent of corporate activities, which otherwise would not receive funding. These projects generate certified credits that can be traded in the voluntary carbon market, allowing the environmental benefit to be monetized according to the equivalence 1 credit = 1 ton of CO<sub>2</sub> avoided or removed.

In other words, in addition to the overriding theme of reductions acting on the positive quadrant of the graph, SBTi’s criteria also invite us to look at the contribution that can be achieved from the negative quadrant through mitigation of impacts beyond the boundaries of the corporate context.



-  **Gross emissions**
-  **Neutralization**
-  **Beyond Value Chain mitigation**
-  **SBT 1.5°C Emissions curve aligned with the Paris Agreement**
-  **Net Emissions**

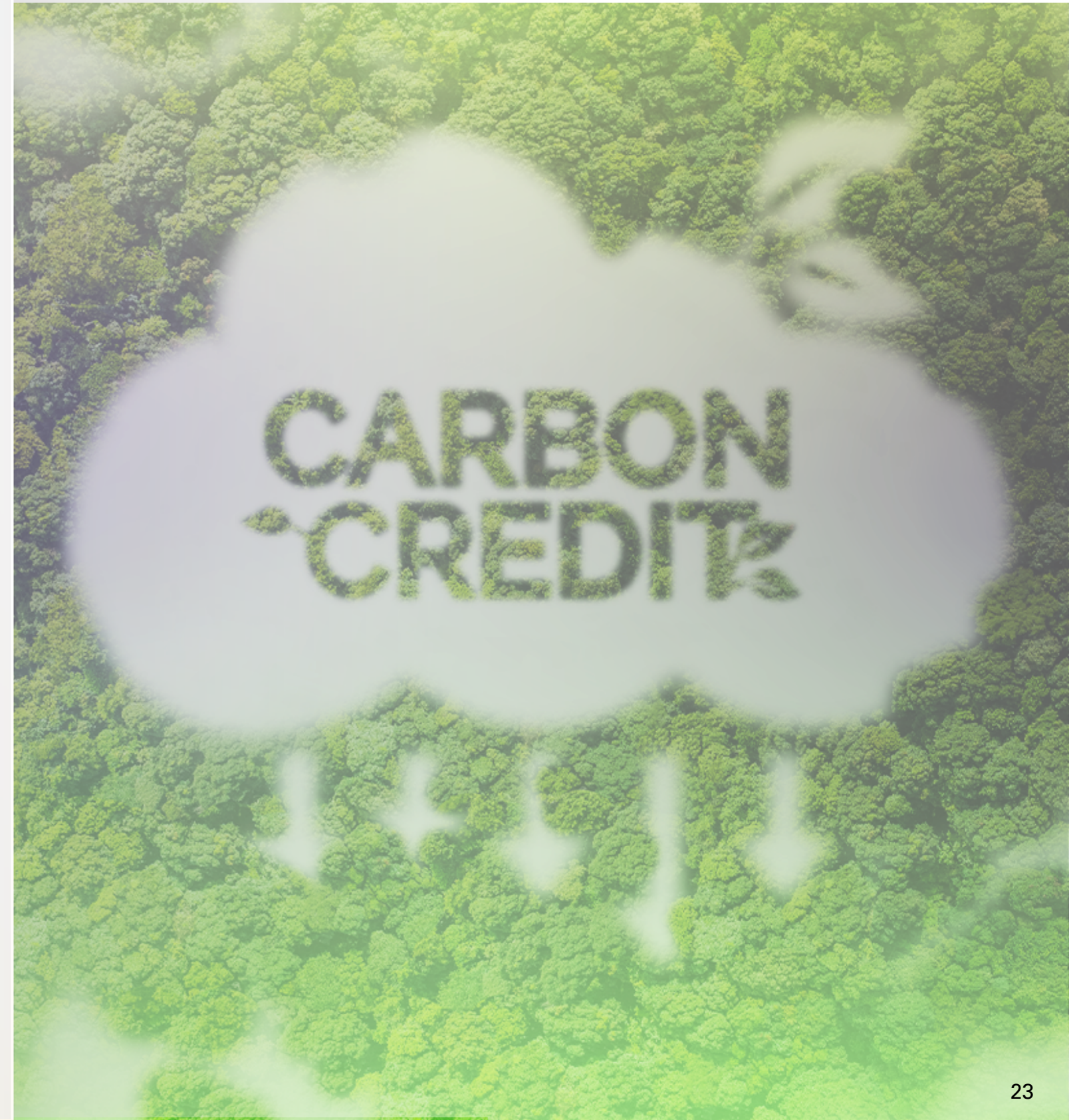
It is important to note that the purchase of credits does not replace corporate emission reduction actions but is an additional and supporting effort. The nature of the carbon *removals* that will contribute to *Net Zero* will be better defined in the future through regulatory frameworks and certification schemes that are not available to date, and this will allow for more precise identification of eligible project types and technologies, similar to what is done for certified carbon credits.

## The voluntary carbon market and Open Fiber's neutralization strategy

In the voluntary carbon market, companies and individuals buy and sell certified credits to finance climate action: certified credits support projects to sustain ecosystems and disadvantaged communities, and enable companies to extend their mitigation strategy beyond reducing their own emissions. Carbon credits are verified by third-party entities according to certification standards such as Gold Standard or Verified Carbon Standard. A credit represents the reduction or removal of one ton of CO<sub>2</sub> equivalent and, to be certifiable, must be additional, real, measurable, verified, permanent, and unique, according to appropriate technical requirements defined by ICROA<sup>9</sup>. The ways in which climate action is financed through certified credits can cover different types of projects, which can be classified as either "avoidance" projects, i.e., which reduce emissions relative to a baseline scenario, or "removal" projects, which absorb CO<sub>2</sub> from the atmosphere according to methodologies under development based on nature or technological innovations. Nature-based solutions are already applicable today and offer climate and other benefits. However, by themselves, they are not sufficient to remove the high amounts of CO<sub>2</sub> in the atmosphere, and technological solutions for removal are still limited and expensive. Therefore, a forward-looking business strategy requires significant investment in research and development to develop scalable and reliable technologies and solutions to address the need for emissions removal in the long term.

<sup>9</sup> *International Carbon Reduction and Offset Alliance*, a nonprofit organization with the goal of defining the quality criteria within the voluntary carbon market.

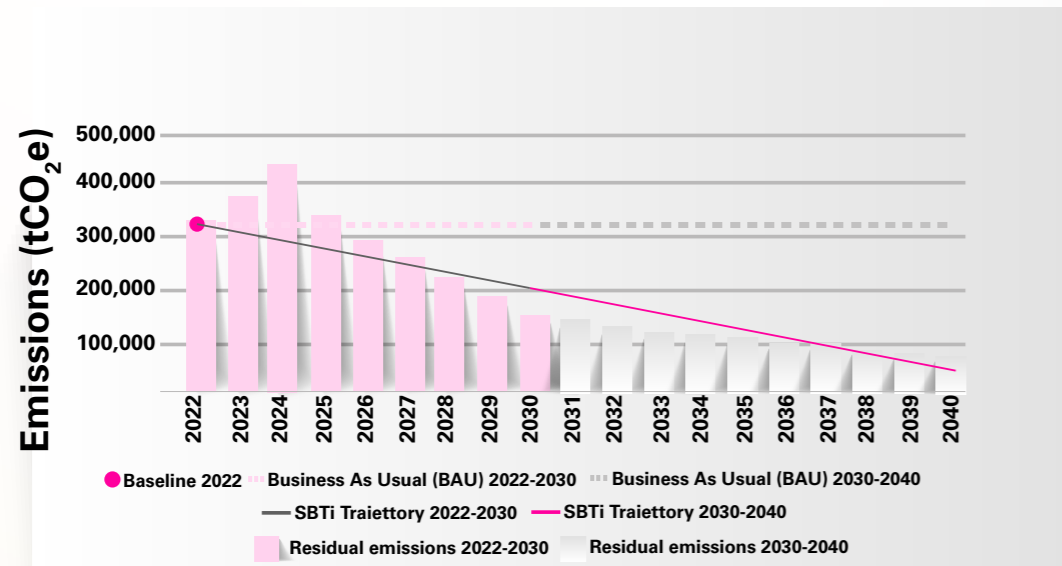
**Open Fiber, as part of its climate journey, has chosen to offset residual emissions from the near future through the purchase of certified climate action credits**, in anticipation of investing in the longer term on carbon removals useful for achieving *Net Zero* status by 2040. This strategy, fully aligned with SBTi's *Beyond Value Chain Mitigation* concept, will first focus efforts on Scope 1 and 2 emissions, annually determining the amount of credits to be purchased and projects to be supported based on progress achieved through reduction actions. **Scope 3**



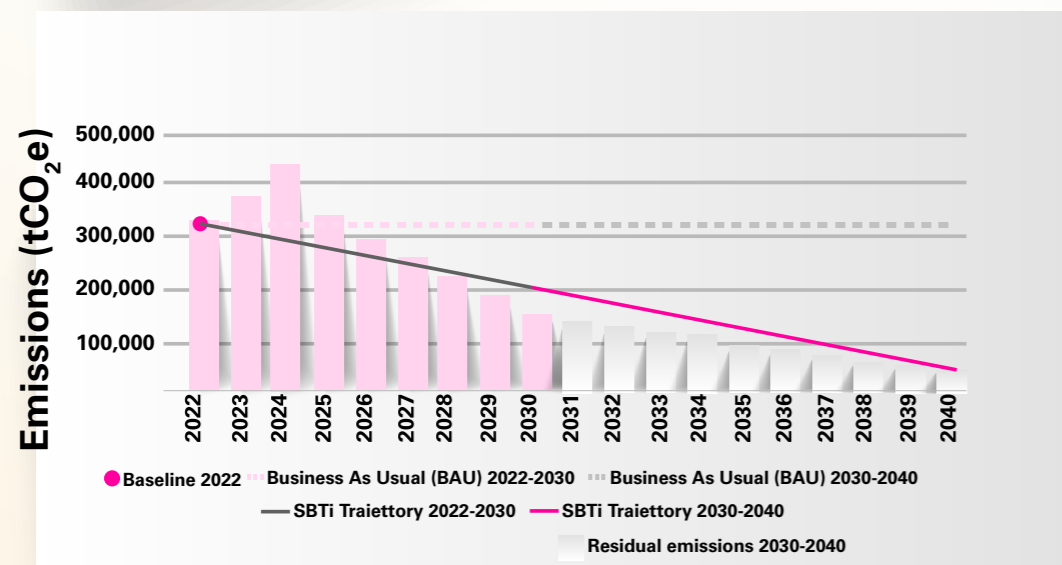
# 05 Goals of the Net Zero Plan

Leveraging the combination of the above decarbonization actions, Open Fiber has developed two primary decarbonization scenarios for 2030 and 2040:

**1. Industrial Scenario**, which includes the actions planned by the Energy Plan, the effects of business evolution, and the effect due to external scenarios related to the evolution of the energy landscape.



**2. Ambitious Scenario**, which adds decarbonization opportunities from supplementary and enabling actions to the actions already included in the Industrial Scenario.



From the analysis of the decarbonization potential of the outlined scenarios, the following conclusions emerge:

- With reference to Scope 1 and 2 emissions, implementation of additional actions is necessary to achieve the level of reduction required by the ambitious SBTi criteria (-42% by 2030 and -90% by 2040);
- With reference to Scope 3 emissions, the trajectories show that Open Fiber has the potential to achieve in the Industrial Scenario a level of emission reduction compatible with the ambition required by SBTi at 2030, leaving a small gap to be closed for the projected 2040 target. Achieving the 2040 target would become possible by including enabling actions as well.

As previously reported, these forecasts also depend on the assumed external scenario, which implies a general level of decarbonization in line with containing temperatures to within 1.5°C across industries.

Based on these scenarios, Open Fiber has set and approved reduction targets aligned to 1.5°C, the maximum level of ambition required to join the Science Based Targets initiative:

- **Scope 1 and 2:** absolute emissions reduction of 42% by 2030 and 90% by 2040, from a 2022 base year;
- **Scope 3** (with reference to Purchased Goods and Services and Capital Goods categories): absolute emissions reduction of 42% by 2030 and 90% by 2040, from a 2022 base year.

Along with the reduction actions, Open Fiber will undertake offsetting actions in line with SBTi's *Beyond Value Chain Mitigation* strategy on the path to Net Zero, investing in climate action financing sufficient to cover the amount of current Scope 1 and 2 emissions, even before they are reduced according to the planned decarbonization actions.

# 06 Conclusions

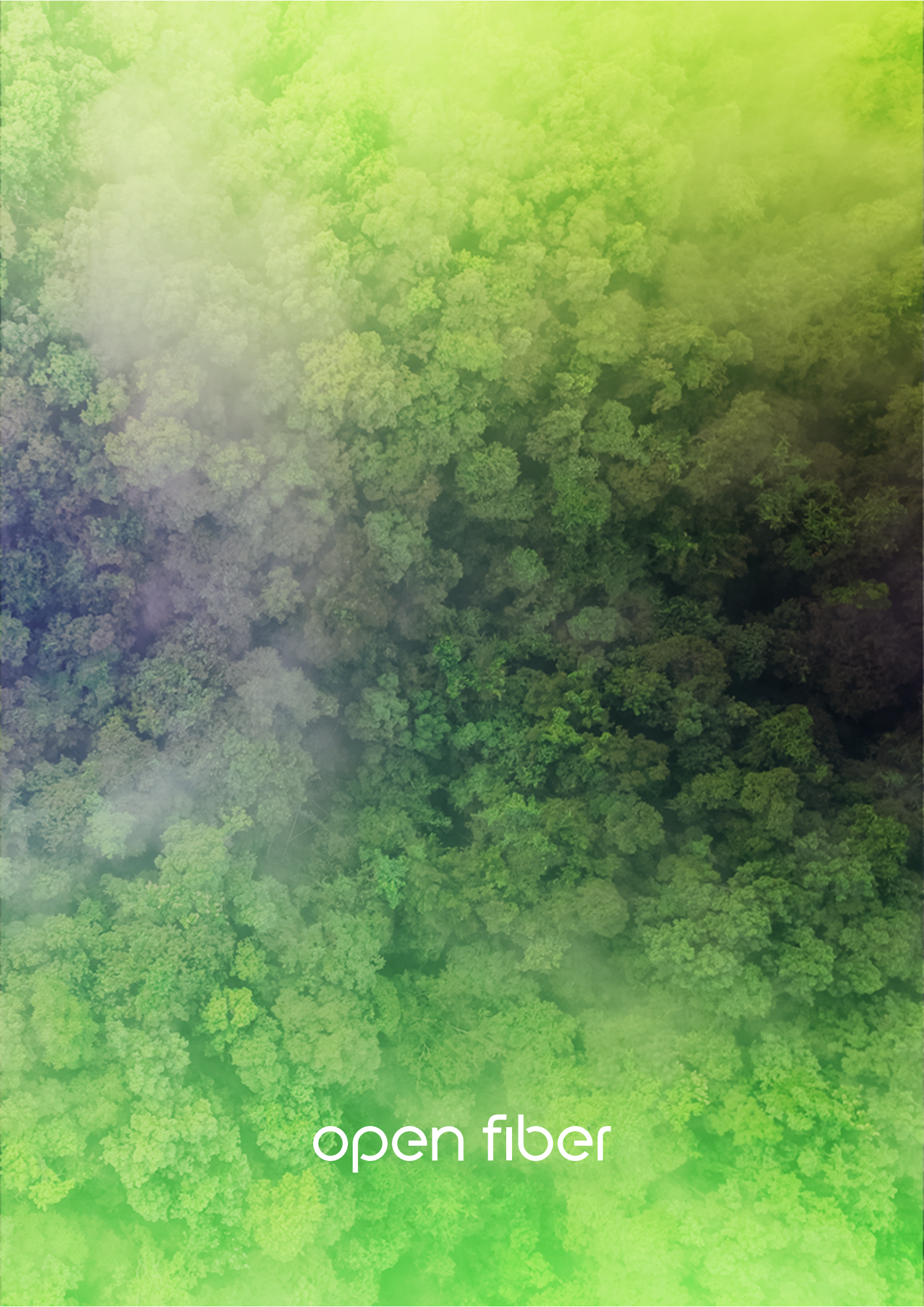
The evolution of Open Fiber's business, as identified in the Business Plan guidelines, is a key element in the company's decarbonization path. Thanks to the contribution of its Energy Plan, external decarbonization scenarios, and the evolution of the business itself, the company will, over the next few years, achieve a progressive reduction in overall emissions associated with its activities and value chain. Realizing that this is not enough with respect to the urgency of addressing climate change, Open Fiber's Net Zero Plan incorporates additional efforts needed to meet SBTi requirements on the path to *Net Zero*, in terms of:

- assessment of challenging actions (defined as additional and enabling) to be taken towards science-based reduction targets at 2030 and 2040;
- future commitment to use carbon *removals* to neutralize unabated emissions by 2040;
- commitment in the near term in financing climate action outside its value chain by entering the voluntary carbon market.

Open Fiber will proceed in 2024 by submitting the targets to SBTi, in line with the *commitment* signed during 2023. In parallel to the commitment with SBTi, the Net Zero Plan will be monitored annually to verify the alignment of the company's emission profile with the scenarios developed.

If a mismatch is found between the assumed scenario and the actually measured contribution, an *action plan* will be defined or, alternatively, alternative and/or supplementary actions will be identified to reduce emissions.

In case of substantial changes to the company's core business, the plan will be reviewed and updated, with the aim of adjusting the reduction trajectories and scenarios and identifying appropriate *reduction actions* on the new scope of emissions involved.



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