

Climate-related Risks

*As per Task Force on Climate-related Financial Disclosures
(TCFD) recommendations*

Issue Brief

CLIMATE CHANGE

Climate change has become a significant global concern in recent decades. With rising temperatures, extreme weather events, and changing precipitation patterns, companies are facing new climate-related challenges and uncertainties. Discussions about how climate change influences companies' strategies and how its impacts can benefit their performance and sustainability are increasingly prevalent among business leaders.

THE TCFD INITIATIVE

TCFD is the acronym for Task Force on Climate-related Financial Disclosures , which can be translated as the Task Force on Climate-related Financial Disclosures. The TCFD was established in 2015 by the Financial Stability Board (FSB), an international organization that coordinates and monitors the global financial system. The FSB, in turn, was created by the Group of Twenty (G20) to oversee the proper functioning of the financial system. Its members include investors, insurance companies, large non-financial corporations, accounting and consulting firms, and credit rating agencies.

The TCFD recommendations were published in 2017, marking an important milestone in the move toward greater climate transparency and accountability in the financial sector. These guidelines aim to increase transparency regarding the risks associated with climate change. It is hoped that by adopting these recommendations, organizations will be able to adequately consider such risks and assess how they are managing them in their operations.



Governance

In December 2020, TIM created the ESG Committee to advise the Company's Board of Directors on the development and implementation of issues related to Environmental, Social and Governance strategy and principles.

The Committee also assesses TIM's participation in voluntary initiatives and commitments and oversees the management of risks and opportunities associated with sustainability issues with the support of the Steering Committee. ESG Committee, composed of TIM directors from strategic areas directly involved in the areas of Regulation, Institutions, Public Relations & Sustainability, Legal and Corporate Affairs and Human Resources.

Additionally, TIM has a Control and Risk Committee, responsible for assessing and monitoring the company's risks. The Committee monitors ESG KPIs quarterly to track their performance and potential impacts on the company's strategies, as ESG is part of TIM's Strategic Plan.

The Committee's composition and activities are listed in its Internal Regulations available at <https://ri.tim.com.br/en/esg/governance/management/>.

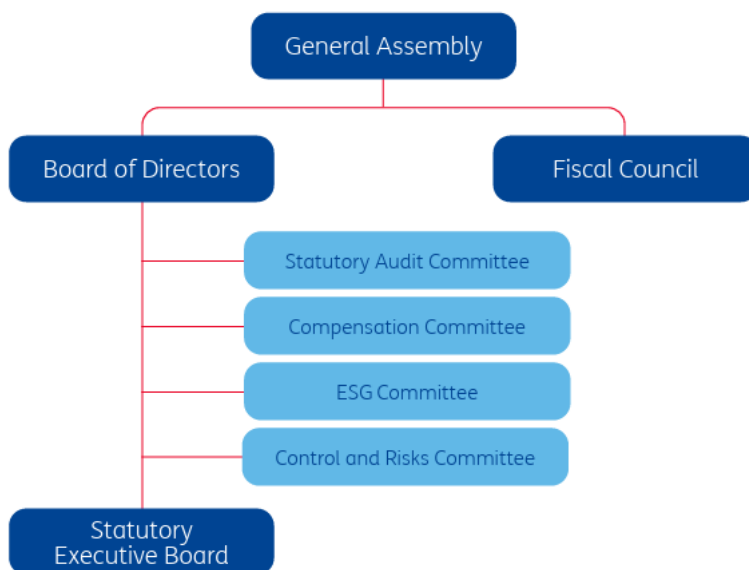
The Regulation, Institutions, Public Relations & Sustainability department is also responsible for representing TIM in the industry associations and organizations of which the company is a member. By internal directive, all TIM positions in deliberations, decisions, and activities, where the company has a seat on governance bodies, are aligned with the Paris Agreement.

Alignment requires that the work of TIM and these industry associations and organizations be consistent with Brazil's climate-resilient development and net-zero emissions goals. It must also be compatible with the Paris Agreement's long-term decarbonization objective.

Over time, we review and monitor our controls to assess whether our public policy engagements are aligned with the Paris Agreement and whether the positions of the associations we are part of conflict with our own positions.

Sustainability Governance Structure

Board of Directors (BoD) is composed of ten members, including four independent members and three women, representing 30% of the total. The Board of Directors is responsible for making strategic decisions to ensure business continuity and conduct management with good governance practices and transparency. Its members are elected by the General Shareholders' Meeting for two-year terms, with the possibility of reelection. The Board of Directors is responsible for ensuring the company's sustainability, considering economic, social, environmental, and corporate governance aspects in its decisions. The Board of Directors and TIM's advisory committees meet at least once a quarter.



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- **Control and Risk Committee (CCR)** - Monitors compliance with corporate governance rules, supervises risk management, internal controls and SOx, Integrity Program and corporate social responsibility actions and initiatives.
- **ESG Committee (CESG)** - Assists in the development and implementation of the ESG strategy and principles. Its responsibilities include defining and annually reviewing targets and monitoring the ESG Plan, assessing TIM's participation in voluntary initiatives and commitments, and overseeing the management of risks and opportunities associated with ESG issues, including climate change.
- **Statutory Audit Committee (CAE)** - Ensures compliance with TIM's regulatory and statutory standards. It oversees the quality and integrity of financial reports and compliance with legislation, in addition to monitoring risk management processes, internal controls, and auditors' activities. The CAE also evaluates contracts between the company, its subsidiaries, the controlling shareholder, and related parties.

The body is responsible for informing the Board of Directors, CAE and CCR of situations involving ESG topics and approaches that may impact the Company's image, reputation and assets.

Strategy

The Task Force Strategy session on Climate-related Financial Disclosures (TCFD) covers a range of crucial topics for companies assessing the risks and opportunities related to climate change. It is essential for companies to describe their approach to managing climate risks and opportunities, considering various scenarios. In this context, it is necessary to identify and analyze the potential impacts of climate change on the business, as well as assess the company's resilience under different climate scenarios.

TIM's ESG Journey

TIM has been working for over a decade to integrate ESG—the acronym for Environmental, Social, and Governance—into its corporate culture and decision-making. In 2020, TIM launched its ESG Plan, updated annually, which defines short-, medium-, and long-term environmental goals and commitments for key corporate sustainability topics, such as Renewable Energy, Indirect Emissions, Carbon Neutrality, Net-Zero, and Data Traffic Eco-Efficiency.

TIM has a set of policies and processes that guide its practices and actions on socio-environmental issues and reinforce its commitment to environmental management. The Company's goal is to always stay ahead of the demands of society and legislation, contributing as a leading player in the advancement of the telecommunications sector.

Since 2010, TIM has had environmental certification under ISO 14001 and discloses its performance and management of greenhouse gas (GHG) emissions in the Brazilian GHG Protocol Program and the Carbon Disclosure Project (CDP).

TIM's Environmental Policy encompasses all of the Company's operations and is based on three pillars: environmental protection, compliance with corporate legal and regulatory requirements, and the continuous improvement of its Environmental Management System (EMS). This policy aims to provide TIM with a framework to protect the environment, enabling it to respond to changing environmental conditions in balance with socioeconomic needs. Furthermore, it aims to continuously improve the organization's environmental performance and ensure compliance with the activities carried out in accordance with the Environmental Policy.

This perspective is supported by the Company's Climate Change Management Policy, which establishes the pillars for managing this issue, taking into account national and international legislation, regulatory agencies' determinations, and TIM Group guidelines. Mitigating greenhouse gas (GHG) emissions and adapting operations to the already irreversible effects of climate change are strategic for TIM's value creation. Furthermore, the company integrates climate considerations into its long-term strategy by establishing emissions reduction targets, increasing energy efficiency, and exploring new sustainable technologies.

Furthermore, the Strategy section also addresses how companies incorporate climate considerations into their long-term strategies, including emissions reduction targets, the adoption of clean technologies, and the transition to a low-carbon economy. The TCFD emphasizes the importance of a robust and adaptive climate strategy that enables companies to anticipate and respond to the challenges and opportunities arising from climate change, while ensuring the creation of sustainable value for shareholders and society as a whole.

TIM recognizes the importance of considering climate risks and opportunities. Although the company already has initiatives related to the renewable energy transition, including a distributed generation sector, it is seeking to enhance its structure and disclosure in accordance with TCFD and CDP guidelines. This includes implementing a comprehensive climate scenario analysis, which has allowed the company to assess the risks and opportunities arising from climate change under different future scenarios.

TIM is committed to integrating climate considerations into its long-term strategies, including emissions reduction targets and the transition to a low-carbon economy. By anticipating the challenges and seizing the opportunities arising from climate change, TIM seeks to create sustainable value for its shareholders and society as a whole.

Time Horizons of the TIM ESG Strategy

TIM's industrial plan strategy has a three-year horizon, with targets reviewed and recalibrated annually. Furthermore, budgets are planned annually, and the company's sustainability data is monitored and disclosed annually. Therefore, one year can be considered short-term. The ESG Plan's environmental goals, such as increasing renewable energy in operations, reducing emissions, increasing efficiency, and improving production processes through the eco-efficiency indicator, are monitored quarterly and reviewed and externally audited annually.

I.Short-term strategy: 1 to 3 years

Description:

- The short-term goals of the ESG Strategy are influenced by the performance of the ESG Plan indicators, which have an impact on the MBO (Management by Objectives) of the Administration, as well as on the LTI (Long-Term Incentive) of the Executive Board, including, for example, the Eco-efficiency indicator (Indicator measured in bits traveled per Joule, energy consumed)
- As defined in the Management Compensation Policy, the general criteria for the MBO bonus are approved by the Company's Board of Directors and provide that eligible statutory directors and other managers may receive an amount based on organizational functions and certain pre-established performance targets.
- The incentive program for corporate executives has components related to the achievement of individual goals and/or areas of responsibility for functions relevant to the goals based on the ESG Plan KPIs, which in turn have disclosed environmental goals directly related to Climate Change.

TIM's short-term climate goal, aligned with the Science Based Targets Initiative (SBTi), is to increase its annual renewable electricity supply from 25% in 2019 to 100% by 2025. Since 2021,

TIM in Brazil has already achieved 100% renewable energy use, contributing to the Group's global commitment. One of our main strategies to ensure the renewable origin of this energy and minimize the environmental impact of our operations is the Distributed Generation (DG) Project. This strategy is complemented by the purchase of energy on the Free Market and the acquisition of Renewable Energy Certificates of Origin (I-RECs).

II. Medium-term strategy: 4 to 6 years

Description:

- **Renewable Energy:** TIM prioritizes the adoption of renewable energy, considering energy savings targets, efficiency initiatives, and strategic plans. This approach is directly linked to the continuous reduction of Scope 2 CO₂ emissions, which encompass indirect emissions from electricity consumption. Since 2021, the company has already achieved the 100% renewable energy milestone, using exclusively clean and sustainable sources. In its energy source strategy, TIM adopts small-scale plants in its Distributed Generation project, which plays a key role in supplying its telecommunications network. Furthermore, the company also purchases energy on the Free Market, strengthening its strategy of transitioning to a more sustainable energy matrix and ultimately offsetting energy consumed from the SIN¹ with the acquisition of Renewable Energy Certificates of Origin (I-RECs). This achievement was so significant that the target was updated to maintain 100% renewable energy by 2025.
- **Eco-efficiency:** Compared to 2019, in 2024, we improved our energy efficiency (bits/Joule) in data traffic by 127%. Although data traffic grew 0.06% compared to 2023, the corresponding energy consumption increased only 5%, because of actions to increase eco-efficiency. TIM's commitment to issue R\$1.6 billion in Sustainability -Linked Bonds (SLB), debentures linked to social and sustainability goals, was made in 2021 and updated in 2024. This Eco-efficiency indicator was included in the financial operation. The eco-efficiency indicator is calculated based on the relationship between the data service offered to the customer (bits) and the company's impact on the environment (joules of energy consumed).
 - Debentures < 2nd Issue < Second Party Opinion (post-issuance) – 2024
- **Scope 3:** Establishment of GHG Protocol Scope 3 emission reduction targets by 2030. Scope 3 GHG emissions are associated with the company's indirect activities, occur throughout its value chain, and are outside its direct operational control. TIM's targets, aligned with the Science Based Targets initiative (SBTi), focus primarily on reducing GHG emissions from Scope 3 Categories 1, 2, and 11, which account for most of the the company's emissions, by 42%.
 - Cat 1- Goods and services purchased.
 - Cat 2- Capital goods.
 - Cat 11- Use of goods and services sold

III. Long-term Strategy: 7 to 12 years²

Description:

¹ SIN ([NATIONAL INTERCONNECTED SYSTEM](#)) : Brazil's electricity production and transmission system

² It may be higher for climate scenarios such as the Long-Term Net-Zero Goal and future projections from Climate Scenario Analysis.

○ **Net-Zero Goal (Scopes 1, 2 and 3)**

It covers Scopes 1, 2, and 3 and signifies that the company is committed to reducing its greenhouse gas emissions to the lowest possible level and neutralizing any residual emissions by the "net-zero" target date of 2040. The "Net-Zero" target aims to contribute to a global objective of significantly reducing greenhouse gas emissions and limiting global warming to 1.5°C above pre-industrial levels.

○ **Carbon Neutral Goal (Scopes 1 and 2)**

TIM has a goal of reducing its absolute emissions by 75% in accordance with the SBTi by 2030 and offsetting residual emissions until it reaches 100% of its net GHG emissions from Scopes 01 and 02 in relation to its 2019 carbon emissions.

Emissions Reduction

To reduce its emissions, TIM has implemented several initiatives across its operations and value chain. As part of this strategy, we maintain our goal of obtaining 100% of our energy consumption from renewable sources by 2025 (achieved since 2021) through our Distributed Generation program, along with the acquisition of energy from the Free-Market Network and Renewable Energy Certificates of Origin (I-RECs). Furthermore, we maintain our goal of increasing eco-efficiency in data traffic by +110% (compared to 2019), which has proven possible with the acquisition of more efficient equipment and smarter energy consumption strategies, also aiming to prepare the company for the expansion of the 5G network.

Examples of initiatives to reduce emissions in our value chain include partnerships with customers and consumers to reduce resource consumption (water, energy, fuel, paper) and the digitalization of sales and contracting channels (website, Meu TIM app, MetaLoja, digital invoice).

Emissions offsetting

TIM understands that offsetting is an additional action, which must occur in parallel with efforts to decarbonize its operations and value chain, following the goals established in the SBTi and the corporate goal of being "Net-Zero" by 2040.

Our offsets are realized through the acquisition of carbon credits from projects that adhere to rigorous standards. Understanding the importance of mitigation actions and contributions beyond its value chain, TIM helps finance climate action projects that do not directly involve its value chain through the acquisition of carbon credits .

Scenario strategy

Scenario analysis has proven to be an important tool for assessing business risks and opportunities arising from climate change. It's worth noting that extreme weather events, such as more intense storms, prolonged droughts, and floods, can impact operations and the supply chain, resulting in disruptions, physical damage, and financial losses for companies. Furthermore, stricter regulations related to greenhouse gas emissions and the use of natural resources are

being adopted, which can affect corporate profitability. In this context, scenario analysis emerges as a tool for anticipating and managing these impacts.

Scenario analysis involves creating future projections based on different plausible climate scenarios.

For example, the TCFD proposes the use of RCP (Representative Concentration Pathway), such as RCP 2.6 (significant emissions reduction) and RCP 8.5 (continued emissions growth), to assess the risks and opportunities associated with climate change.

By considering different scenarios, companies can identify potential effects on market demands, operations, natural resources, and government policies, enabling better preparation and adaptation.

Scenario analysis also offers companies the opportunity to explore competitive advantages and new business opportunities. The transition to a low-carbon economy, for example, can pave the way for the development of innovative products and services, such as renewable energy, clean technologies, and energy efficiency solutions. Companies that anticipate these changes and adapt quickly can position themselves as market leaders and win the favor of climate-conscious consumers.

Another important aspect of scenario analysis is the disclosure of information related to climate and climate risk. This transparency strengthens the confidence of investors, shareholders, and consumers, in addition to improving corporate governance and corporate responsibility.

Faced with the challenges posed by climate change, TIM considers scenario analysis a valuable tool for assessing business risks and opportunities.

Criteria for constructing scenario analysis

To define the geographic scope of the scenario analysis, TIM assessed the representativeness and impact of its activities in three groups: **energy, operations and logistics, and infrastructure**. These sectors are particularly important because they are more susceptible to climate impacts and are relevant to TIM's business strategy.

The climate scenarios were constructed based on the projections of the Intergovernmental Panel on Climate Change (IPCC) and using the dataset Coupled Model Intercomparison Project Phase 5 (CMIP5), considering three variables: temperature, precipitation and consecutive dry days.

The three selected variables (maximum number of consecutive dry days, maximum temperature and precipitation) are relevant to TIM as they have impacts on the Distributed Generation area and the transmission system, which are considered extremely important for the service delivery and operation of the services offered.

The variables “Precipitation” and “Consecutive dry days” will provide an important contrast, since throughout the year there are periods of rain according to the seasons, thus demonstrating the true impact on rainfall intensity and prolonged periods of drought.

The Coupled Model Intercomparison Project Phase 5 (CMIP5) is a global project that brings together several models climate studies developed by research institutions around the world, led by the World Climate Programme Climate Research (World Climate Research Programme - WCRP), with the main objective of evaluating and comparing the climate projections for the future. CMIP5 models were used in the IPCC Fifth Assessment Report and provided important subsidies for understanding the impacts of greenhouse gas emissions on temperature global, us standards of precipitation, us events extremes and in others aspects of system climate.

Following the IPCC guidelines, the scenarios used were RCP 2.6 and 8.5, with the time horizon up to 2060, having as a baseline the period 1995-2014, and two regions were pre-established (southeast and northeast of South America) and evaluated.

The **IPCC** (Intergovernmental Panel on Climate Change) is an intergovernmental science organization that provides comprehensive assessments of science, impacts, and policies related to climate change. Its assessment reports contain projections of future climate scenarios based on different greenhouse gas emissions trajectories. These scenarios provide crucial information for companies to assess the risks and opportunities arising from climate change.

The International Energy Agency (**IEA**) is an autonomous agency that serves as the energy body of the Organization for Economic Cooperation and Development (OECD). It develops energy analyses and scenarios, including Net-Zero Emissions (NZE), which outlines a pathway to achieving net-zero carbon emissions. IEA scenarios help companies understand energy transition pathways and identify opportunities related to clean energy sources and low-carbon technologies.

Collaboration between the IPCC and the IEA is crucial for developing robust and accurate climate scenarios. reliable, which support scenario analysis and help companies make informed decisions in the face of challenges of changes climate.

IPCC Physical Scenario - RCP

The physical scenario refers to a representation of future climate and physical environment conditions resulting from climate change. It is constructed based on climate models, historical data, greenhouse gas emission projections, and other relevant factors. The goal of the physical scenario is to provide a vision of what may occur in the future in terms of temperature, precipitation, sea levels, extreme weather events, and other climate parameters. This information is crucial for assessing the potential impacts of climate change on sectors such as agriculture, infrastructure, health, ecosystems, and the economy in general.

RCP 2.6 “Net-Zero”

The RCP 2.6 scenario represents a low-emissions scenario in which significant mitigation policies are implemented and emissions are reduced throughout the 21st century. RCP 2.6 assumes the adoption of ambitious mitigation measures, a transition to renewable energy sources, increased energy efficiency, and substantial changes in consumption patterns. This scenario aims to limit global temperature rise to approximately 2°C above pre-industrial levels, as established in the Paris Agreement.

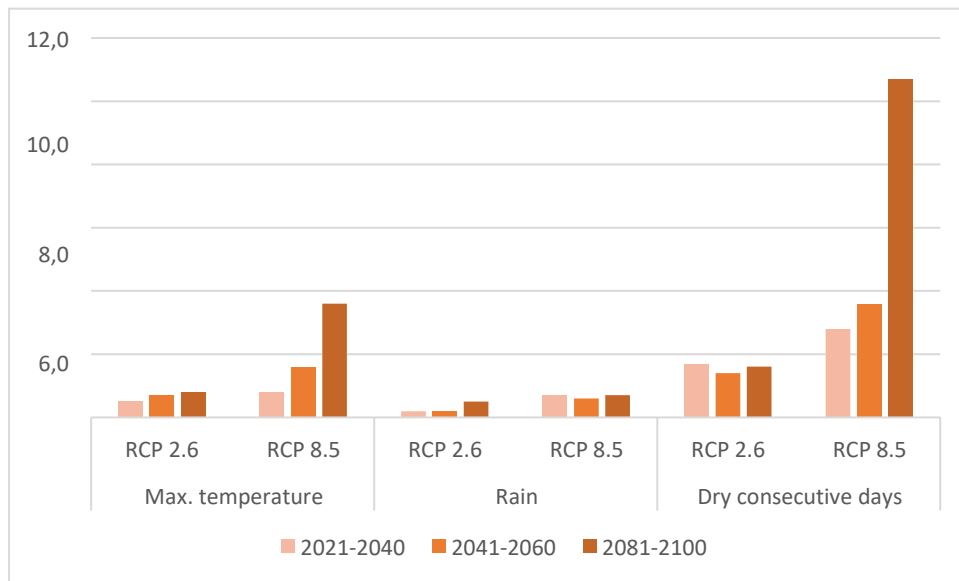
RCP 2.6 projections indicate a gradual reduction in atmospheric greenhouse gas concentrations, resulting in less global warming and more moderate climate impacts. RCP 2.6 is used as a benchmark to explore the implications of an emissions trajectory aligned with long-term climate change mitigation objectives.

The RCP 2.6 scenario projected by TIM showed a tendency for temperature variation to stabilize (0.5 °C by 2040; 0.7°C by 2060) . The most negative forecasts also demonstrated a tendency for stability in the volume of intense rainfall and drought, with a slight increase of 1.7 consecutive dry days by 2040.

RCP 8.5 “Business as usual”

The RCP 8.5 scenario represents a high-emissions scenario in which no significant mitigation policies are implemented, and emissions continue to rise throughout the 21st century. RCP 8.5 assumes a scenario of accelerated economic growth, increased energy demand, and predominant use of fossil fuels. As a result, this scenario predicts a sharp increase in atmospheric concentrations of carbon dioxide (CO₂) and other greenhouse gases. Consequently, RCP 8.5 projections point to a significant increase in global temperature, with potential associated impacts such as rising sea levels, more frequent extreme weather events, and changes in precipitation patterns.

The RCP 8.5 scenario projected by TIM presented a short-term temperature increase (0.8°C by 2040; 1.6°C by 2060), with a high upward trend after 2060. Precipitation forecasts showed a median increase of 2.0% to 7.5%, a range of variation that may indicate more intense rainfall and droughts. The graph below shows the difference between the two scenarios in the three variables analyzed in the intervals 2021-2040, 2041-2060, and 2081-2100.



Source: TIM Brasil Scenario Analysis Study

The RCP 8.5 scenario indicates an increase in all variables over the years when compared to the RCP 2.6 scenario, with emphasis on consecutive dry days that have a significant increase in the period 2081-2100.

Conclusion Analysis of Physical Risk Scenarios

The variations presented in the RCP 2.6 and RCP 8.5 scenarios have significant implications for TIM in terms of risks and opportunities related to climate change.

The main physical risks identified were:

- Interruption of our services due to damage to our infrastructure and equipment due to extreme weather events such as storms, floods, landslides and droughts.
- Increased operating costs linked to increased temperatures, due to the possible need for greater cooling of data centers and other equipment, as well as possible failures and reduced useful life of this equipment.
- Increase in operating costs linked to electricity, with decreased precipitation and increased dry days, considering the Brazilian hydroelectric energy matrix.

The main actions to mitigate and/or remediate these risks have been:

- Risk assessments and execution of resilience plans to identify vulnerabilities and potential impacts, aiming to increase network infrastructure resilience, as well as implementing contingency plans to ensure service continuity and minimize interruptions.
- Purchase of more eco-efficient equipment and data centers, including cooling, as well as annual eco-efficiency targets and monitoring of PUE (Power Usage Effectiveness) of data centers.

- Investment, monitoring and annual targets for Renewable Energy and Distributed Generation and Eco-efficiency, linked to the Company's ESG Strategic Plan.

On the other hand, the identified climate change-related opportunities include the possibility of developing new products and services, such as renewable energy solutions (such as Distributed Generation) and carbon emissions reduction, sustainable resource management and more energy-efficient products.

Recognizing its role in building a low-carbon future, primarily through connectivity, digitalization, and data intelligence products and services, TIM seeks innovative solutions that contribute to the decarbonization journey of customers and consumers, promoting sustainable lifestyles, driving digital transformation, and contributing to mitigating and adapting to climate change.

Examples of initiatives include partnerships with customers and consumers to reduce resource consumption (paper, water, energy, fuel), the migration of data centers to the cloud, the use of more eco-efficient equipment, and partnerships with public authorities for smart and eco-efficient public lighting, among others disclosed in our reports and press releases. Also worth highlighting are initiatives to digitize sales and contracting channels (website, Meu TIM app, MetaLoja, digital invoice), which can contribute to reducing emissions related to the consumption of our products and services by our customers and consumers.

TIM is aware that scenario assessment is a constantly evolving process and must be continually updated and refined as new information and data become available.

Transition Scenarios

The transition scenario refers to a framework that describes a trajectory of change from a current system to a new one, with the goal of achieving a low-carbon, climate-resilient economy. This scenario is constructed taking into account the reduction of greenhouse gas emissions, the increase in energy efficiency, the transition to renewable energy sources, the adoption of sustainable practices, and the implementation of mitigation policies. It aims to balance the need to reduce carbon emissions with the maintenance of economic growth and energy security. It involves the transformation of key sectors, such as energy, transportation, industry, and agriculture, and entails changes in consumption patterns and behavior.

TIM chose the IEA Net-Zero 2050 ("NZE") and IEA Stated Policies Scenarios ("STEPS") because contrasting optimistic and pessimistic scenarios for the transition to a low-carbon economy and energy provides rich insight into its risk and opportunity assessments. The IEA STEPS selection considers countries' existing policies and commitments, reflecting a trajectory based on current actions and national plans. This allows TIM to present a vision beyond the company itself and consider the region in which it operates. The IEA NZE was selected because it aligns with future goals related to electricity and brings a more challenging vision to the company. Since electricity is extremely important to TIM, being at the forefront of the low-carbon energy transition will prepare the company for the future.

IEA Net-Zero 2050 Scenario ("NZE")

The IEA Net-Zero 2050 transition scenario focuses on drastically reducing greenhouse gas emissions through the implementation of ambitious measures and systemic transformations across all sectors of the economy. The NZE involves phasing out the use of fossil fuels,

significantly increasing the use of renewable energy, improving energy efficiency, electrifying sectors such as transport and heating, and adopting carbon capture and storage technologies. It seeks to promote climate resilience, sustainability, and energy security, while simultaneously delivering economic and social benefits.

This scenario from the IEA (International Energy Agency) outlines a pathway for the global energy sector to achieve net-zero CO₂ emissions by 2050. This perspective also meets key United Nations Sustainable Development Goals (SDGs) related to energy, such as Affordable and Clean Energy. The 2050 NZE Scenario is built on the principles of an orderly transition across the energy sector, including ensuring security of fuel and electricity supply and minimizing stranded assets wherever possible.

In recent years, the energy sector has been responsible for about three-quarters of global greenhouse gas (GHG) emissions. Achieving net-zero CO₂ emissions **from** energy and industrial processes by 2050 under the NZE Scenario depends heavily on action in areas of the energy sector.

IEA Stated Policies Scenarios (“STEPS”)

The Stated Policies Scenario (STEPS) is considered a more pessimistic scenario. Based on a more conservative reference for the future, it assumes that governments will not achieve all announced targets. STEPS is based on current policies and assumes that global primary energy demand will grow at a rate of 0.8% per year until 2040, with oil and natural gas meeting 54% of global needs in 2030 and 53% in 2040.

Conclusion Analysis of Transition Scenarios

The low-carbon energy transition is a major challenge, and being at the forefront of this change, as TIM is, is extremely important for future energy resilience.

Since 2017, TIM Brasil has been working on developing its Distributed Generation portfolio. This project is part of an energy sustainability plan, bringing energy security and reducing GHG emissions.

From 2017 to 2020, the project evolved and with the acquisition of new plants, TIM achieved, in 2021, its ambition of 100% electricity from renewable sources, with 40% coming from its portfolio and the remaining 60% from renewable energy.

By the end of 2022, TIM had 53 active power plants, which, together with energy purchases on the Free Market, enabled it to reach 70% renewable energy for its total consumption in December (70% annual average). With the acquisition of Renewable Energy Certificates of Origin (I-RECs), TIM once again reached the 100% renewable energy milestone in its operations.

By the end of 2023, TIM had 101 small-scale power plants powering its operations in various states, with solar plants predominating. By 2024, TIM expanded to 129 solar, hydro, and biogas plants, plus three natural gas plants, located in 22 states and the Federal District. The project was responsible for supplying more than 17,000 sites, producing approximately 427 gigawatt-hours per year.

Our DG matrix was responsible for almost half of the company's total consumption. By purchasing energy on the Free Market and acquiring Renewable Energy Certificates of Origin (I-RECs), We maintained the 100% renewable electricity target in our operations, in line with our ongoing goal of 100 % renewable electricity by 2025. This ambition, implemented in recent years by TIM Brasil, aligns the company with the IEA NZE transition scenario, which focuses primarily on a transition to a low-carbon economy focused on electricity. Therefore, the physical risk assessment strategy is extremely important within TIM Brasil's distributed energy generation sector, as it will ensure that its energy transition is consolidated in the coming years.

Key transition risks identified in the study include:

- Rising carbon prices;
- Stricter regulation on greenhouse gas emissions;
- Changing consumer demand for low-carbon products and services.

The main actions to mitigate and/or remediate these risks have been:

- Planning and hiring of consultancy for internal carbon pricing;
- New activity of analyzing regulatory trends in ESG and Climate by the ESG area;
- Raising awareness and developing projects with TIM departments responsible for developing new products and services.

The main transition opportunities identified include:

- Transition to renewable energy, including the expansion of the Distributed Generation project (GD);
- Continuous improvement in energy efficiency through energy management and data traffic optimization;
- Programs and projects involving digital transformation (encouraging the sustainable use of resources such as water, paper, energy, fuel, among others, contributing to the decarbonization of TIM's operations and its value chain, upstream and downstream); sustainable management of electronic waste; engagement with the value chain, upstream and downstream, including environmental and climate literacy actions.

Consolidated Scenario Analysis Overview

The TCFD strategy section addresses the following topics:

- a.** Describe you risks and opportunities related to the climate what the enterprise identified the short, average and far away term.
- b.** Describe the impact of the risks and related opportunities to the climate in business, strategy and planning financial of the company.
- c.** Describe the resilience from the strategy from the enterprise, taking in different considerations scenarios related to the climate, including one scenario of 2°C or less.

For topic “a”, the RCP 2.6 scenario was disregarded in the medium and long term, as it does not demonstrate a large variation in relation to the current scenario, as explained previously in this document.

TIM consolidates the results of the scenario analysis and responds to the three topics in the table below:

Consolidated Scenario Analysis Overview – Examples of Physical Risks and Transition Risks

	Short Term (2040)		Average Term (2060)		Far away Term (2100)	
	Physical Both	Transition Both	Physical CPR 8.5	Transition NZE50	Physical CPR 8.5	Transition NZE50
Topic a.	THE increase from the frequency and gravity of the events climate extremes he candamage the infrastructure telecommunications, interrupt the services and affect the generation of energy electrical.	Higher energy costs highs and possible failures in power grid can impact the operations from thecompany and increase the costs.	The increase of precipitation generating floods more frequent can damage the infrastructure and cause service interruptions .	Changes regulatory,as pricing of carbon or emissions reduction , can increase the company costs or reduce the demand put your services.	Climate change continuous can lead to more weather events frequent and severe, water shortages and others physical risks that can impact infrastructure and the company's operations, as also the structure and the production of energy from the GD.	The increase in pressure regulatory to reduce emissions may require significant changes in the business model and operations of enterprise.

For the medium and long term, the most relevant impact risks to TIM were disclosed, considering the most relevant variations in 2060 and 2100. Thus, physical risks present greater changes and challenges within the RCP 8.5 scenario. NZE transition risks were presented because they align with TIM's current and future strategy and challenges, as the company is on the path towards "Net-Zero."

	Risks in the Enterprise	Impacts in the Strategy	Financial Impacts on Enterprise
Topic b.	Infrastructure damage and service interruptions may affect TIM's ability to provide services to customers, leading to reputational damage and loss potential of customers. Costs of energy more highs can also increase expenses operational.	Climate-related risks are on the radar of TIM, which has already been applying innovations in the model of business and operational practices to adapt. Measures of protection of infrastructure to mitigate the risks of extreme weather events and development plans to to guarantee the business continuity as independence energetics.	Climate-related risks can increase expenses operational due the need of invest in measures of protection of infrastructure or pay costs of energy more high. Also he can to take the possible penalties cool and regulatory if thecompany is not in compliance with the regulations environmental.

	CPR 8.5	CPR 2.6	IEA STEPS	IEA NZE
Topic c	<p>Adaptation to high emission scenarios:</p> <p>Development of disaster mapping natural, through the plan of monitoring of Brazilian cities where if find infrastructure of the TIM in the area from GD and ERBs (Radio Base Stations).</p>	<p>Development of technologies of low carbon:</p> <p>TIM stays ahead of the trends, already exercising the transition to one enterprise of low carbon. One of the projects includes reducing carbon consumption energy through of one improvement in the efficiency of transmission of data.</p>	<p>Development of energy efficiency structures:</p> <p>Reducing energy consumption and optimizing energy use. TIM has been implementing energy efficiency projects in recent years.</p>	<p>Transition to sources of energy renewable:</p> <p>THE TIM Brasil demonstrates resilience put already be implementing the GD project and each year developing more that project.</p>

Next steps in scenario analysis

As climate change continues to evolve and new studies emerge, it becomes crucial to update and consider new parameters in scenario analysis to reflect changing conditions and emerging risks and opportunities.

In the future, TIM Brasil's analyses may consider more variables and explore more regional factors to gain a more comprehensive understanding of the potential impact of climate change on its business.

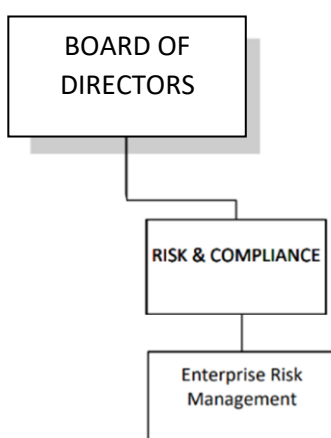
By staying ahead of the curve and proactively managing climate opportunities and risks, TIM Brasil seeks to maintain the longevity of its business and contribute to a more sustainable future.

Risk management

TIM understands that Risk Management is a strategic tool in creating value for the Company, therefore, in line with the Telecom Italia Group, it has adopted an Enterprise Risk Management Model (ERM) that allows the identification and management of risks in the Group's companies, highlighting potential synergies between the Functions involved in the company's Internal Control System.

The processes established in the Risk Management Policy identify, prioritize and define action plans to mitigate corporate and operational, financial, ethics and compliance, environmental, health and safety and reputational risks.

The ERM process involves several functions within the company's organizational structure. The architecture of information/communication flows between the functions involved in the ERM process has the following structure 3:



Risk management at TIM is aligned with international standards, such as the Committee of Sponsoring Organizations of the The Treadway Commission (COSO), a non-profit organization that guides fraud prevention in the company's processes and procedures, which are incorporated into the TIM Group's risk management policy. It encompasses corporate and operational processes, financial processes, ethics and compliance, environmental processes (including climate change), health and safety, and reputational risk management.

The ERM Process aims to manage risks effectively, including:

- Assist the company in risk management, enabling the achievement of strategic objectives;
- Decision support;
- Improve the identification of threats and opportunities;
- Avoid damage to the company's reputation;
- Prevent or minimize socio-environmental risks, among others.

³ Situation as of June 2023 .

Climate risk assessment

TIM implements an analysis model designed to determine the probability of risk occurrence and its relative impact, as well as to define a risk response strategy. Once a year, the Corporate Risk Management area conducts a risk reassessment process to classify existing risks or identify newly emerging ones. As a result of this process, high- and medium-level risks, assessed as partially monitored, are monitored through action plans.

In 2022, the Company formally assumed a climate change risk in the Corporate Risk Management process to strategically monitor failure or inadequate execution in the provision of services due to extreme weather events.



Other topics related to TIM's risk management and assessment can be found in the Thematic Report on Emerging Risks on our [ESG Reports page](#).

Climate Change Adaptation Actions

TIM understands that the risks associated with climate change can have physical, economic, and regulatory implications, with financial repercussions on TIM's image and reputation. These risks are monitored, prevented, and mitigated, and are part of the Company's risk matrix, aiming to propose adaptation actions to anticipate and prevent adverse effects.

In its most recent climate scenario analysis, TIM found that for the energy sector, consecutive dry days pose a greater threat to hydroelectric plants (e.g., a long period of drought causing a water crisis in 2021 and increasing the SIN emission factor for that year).

Considering that 75% of TIM Brasil's hydroelectric plants are in the state of Minas Gerais (MG), it is important to evaluate regions that already suffer from droughts, providing additional information for decision-making regarding the addition and removal of plants from the portfolio.

These disasters are likely to be more frequent and intense, according to the RCP 8.5 scenario, as discussed earlier in this document.

In the current disaster scenario, the northern area of the southeast region and the northeast region recorded droughts and the southeast region recorded rainfall disasters.

TIM has identified adaptation initiatives aimed at mitigating damage to facilities and infrastructure, which have a direct impact on TIM's business, in addition to exploring associated opportunities.

This suggested adaptation plan considered the infrastructure whose future risk associated with the meteorological event was considered 'High' or 'Significant' and its initiatives are listed below:

- 1) Mapping high-risk areas: Identify and geographically map the areas most prone to extreme weather events, taking this data into account when implementing new facilities. This will result in action plans to adapt new facilities to scenarios of heavy rainfall, strong winds, flooding, landslides, and other events.
- 2) Partnerships with climate monitoring entities: establish collaborations with organizations specializing in climate monitoring and disaster prevention. The goal is to prepare existing locations that may be affected by climate events, reducing potential damage.
- 3) Recording and analyzing climate damage: Include information on the types of damage caused by climate events and the type of event causing them in site maintenance routines. This data allows mapping climate effects on maintenance costs and correlating equipment damage with climate events. This facilitates the development and updating of controlled risk studies, as well as the establishment of preventive measures, registering the information in the system for traceability and access.
- 4) Integrating climate risk into corporate planning: consider "climate risk" in corporate and operational planning actions, considering the potential impacts of extreme weather events.
- 5) Study solutions to reduce vulnerabilities: Conduct analyses and studies on existing facilities to identify ways to reduce the vulnerability of each location. For example, relocating equipment such as generators to higher ground to minimize damage from flooding. Additionally, evaluate the possibility of reducing areas of influence by planting appropriate species.

These measures aim to adapt the company to extreme weather events, reduce damage and prevent negative impacts on the company's operations and infrastructure.

risk assessments and resilience plans for all its major operations and projects to identify vulnerabilities and assess potential impacts. TIM also implements adaptation measures to increase the resilience of its telecommunications network infrastructure. Through contingency

plans, the company seeks to ensure service continuity and minimize interruptions, as reflected in its internal process structure.

Metrics and goals

Mitigating greenhouse gas (GHG) emissions and adapting operations to the already irreversible effects of climate change are strategic for TIM's value creation. TIM's GHG inventory is prepared annually in accordance with the Brazilian GHG Protocol Program and is audited by a third party. The Company also monitors a series of sustainability indicators across its operations on a quarterly basis through its own internal system.

Climate Metrics and TIM ESG Plan Management

Since 2020, with the launch of the ESG Plan, TIM has undertaken long-term public commitments that are reviewed annually and whose details can be verified in the ESG Report and in the chapter that deals with the “**ESG Journey**” at TIM, in this same document.

2025-27 ESG Plan <small>GRI 2-24, 2-25</small>						
TIM Group's commitment SLB Sustainability-linked bond New target						
Pillar	Commitments	2024-26 Plan	Term	2024 Results	2025-27 Plan	Term
 Environmental	Net Zero (scopes 1, 2 and 3) tCO ₂ e 	Net Zero	2040	585,439 ^{1,2}	Net Zero	2040
	Reduction of scope 3 emissions tCO ₂ e 	-42%	2030	585,439 ¹	-1	2030
	Carbon neutral (scopes 1 and 2) tCO ₂ e 	Carbon neutral	2030	0 ²	Carbon neutral	2030
	Renewable electricity 	100%	2025	100% ³	100%	2025
	Eco-efficiency in data traffic ⁴ (bit/Joule) <small>SLB</small>	+110%	2025	+148%	+110%	2025
	Reuse or recycling of solid waste ⁵	≥95%	2026	99.9%	≥95%	2026

2024-26 ESG Plan – Environmental Pillar

ESG Report 2024, page 16

Electric energy

TIM relies on a constant supply of electricity to power the physical infrastructure of its telecommunications network, operations, data centers, stores, and administrative headquarters. Due to its strategic importance and the impacts associated with energy consumption, this issue is material and is part of the ESG Plan's commitments.

Since 2021, TIM has reached the milestone of 100% renewable energy consumption through the acquisition of Renewable Energy Certificates of Origin (I-RECs). The ESG Plan aims to maintain this achievement.

Scope 1 - Emissions direct operations associated with the operation, mainly fuel combustion and maintenance of air conditioning and fire-fighting systems.

GHG emissions of Scope 1 (tCO₂e) GRI 305-1

	2022	2023	2024
Fleet emissions of TIM operational control vehicles	320	239	257
Stationary emissions (generators, machinery and other equipment)	2,194	2,571	2,872 ¹
Fugitive emissions (refrigerant gases and fire extinguishers)	4,506	6,697	9,033 ²
Effluents	2	2	0.3 ³
Total Kyoto GHG	7,022	9,509	12,162
Fugitive emissions (refrigerant gases) Non-Kyoto	2,529	2,455	4,456 ²
Total GHG of Scope 1	9,551	11,964	16,618⁴

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Scope 2 - Indirect emissions from electricity purchases. For the location-based approach, emissions are calculated using the average emission factor of the National Interconnected System (SIN), meaning it does not consider the traceability of renewable energy purchased on the free market and through distributed generation. For the purchase-choice approach, renewable energy purchased with proven traceability (via renewable energy certificates, I-RECs) is considered.

GHG emissions of Scope 2 (tCO₂e) GRI 305-2

	2022	2023	2024
Location-based approach	15,346	13,096 ¹	16,268 ²
Market-based approach	0	0	0

Scope 3 - Indirect emissions

Scope 3 emissions are indirect emissions resulting from the activities of third parties, such as suppliers, customers and users of products sold by TIM.

TIM Group - TIM Group's Scope 3 emissions are directly linked to the purchase of goods and services (category 1), the purchase of capital goods (category 2), and the use of products sold by the company (category 11). In 2022, TIM, through the TIM Group, joined the Science Based Target Initiative (SBTi), an initiative that promotes science-based targets for reducing greenhouse gas emissions.

With this commitment, TIM has set an ambitious target of reducing its emissions in these three categories by 42% by 2030, in line with SBTi guidelines.

In 2024, indirect emissions generated by the Group's upstream and downstream activities totaled 2,025,399.85 tCO₂e, with 71.1% of these emissions coming from Italy and 29% from Brazil. It is important to emphasize that Brazil also plays a significant role in the TIM Group's Scope 3 emissions.

These emissions can be distributed as follows:

- 74.4% (1,507,169.99 tCO₂e) result from the purchase of goods and services (category 1);
- 15% (303,900.22 tCO₂e) are due to the purchase of capital goods (category 2);
- 9.2% (186,054.21 tCO₂e) are generated by the use of products sold by the company (category 11).

This data demonstrates TIM's efforts to measure and reduce its greenhouse gas emissions, primarily through the management of indirect activities (Scope 3) that involve its value chain.

TIM SA - TIM SA's value chain also considers emissions categories other than Group Emissions. Currently, this category includes employee commuting, air travel, waste treatment, and logistics activities, among other emission sources. In 2021, TIM revised its Scope 3 category, disregarding losses from electricity transmission and distribution. Therefore, the 2019 and 2020 figures were recalculated using this same criterion.

GHG emissions of Scope 3 (tCO₂e) GRI 305-3

	2022	2023	2024
GHG emissions of Scope 3	4,354 ¹	226,172 ²	585,439 ³

¹ Value calculated according to the methodology and scope applied by TIM in Brazil up to the end of 2022, with direct data collection from categories 1, 3, 4, 5, and 6, which was still under development. As of 2023, the calculation of TIM's Scope 3 emissions in Brazil has been carried out by the TIM Group.

² Value considers only categories 1, 2, and 11, in accordance with the calculation methodology applied by the TIM Group to calculate TIM Brazil's Scope 3 emissions for 2023. If categories 3, 4, 5, and 6—accounted for only in Brazil—were also considered, the total emissions would amount to 231,030 tCO₂e.

³ Since 2023, the TIM Group has been responsible for calculating TIM Brazil's Scope 3 emissions and has improved the calculation base for 2024 by including categories 1, 2, 3, 11, and 12. As a result, the values found were significantly higher when compared to the previous year. If categories 4, 5, and 6—accounted for only in Brazil—were also considered, the total emissions would amount to 589,748 tCO₂e.

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Emission intensity

Emissions intensity

Indicator ¹	Description	Unit	2022	2023	2024
Intensity by Revenue	Emissions related to the organization's total revenue.	KgCO ₂ e/ million Real	0.88	0.93	1.14
Intensity by Data Traffic GRI 305-4	Emissions associated with the volume of data transmitted.	kgCO ₂ e/ Terabit	0.41	0.37	0.49
Intensity by Employee	Total emissions per employee, considering Scopes 1, 2, and 3.	KgCO ₂ e/ employee	2,286	2,602	3,449

¹ Considers Scope 1 and 2 emissions, localization approach, without considering carbon credits.

2024 ESG Report , page 99

Reference	Indicator/Data	Conversion unit	2024
2024 ESG Report , page 97	Direct greenhouse gas emissions (Scope 1)	tCO ₂ e	16,618
2024 ESG Report , page 98	GHG Emissions (Scope 2) Located Based	tCO ₂ e	16,268
2024 ESG Report, page 98	Total emissions (1+2 Lctd) Bsd) - w/ o Cred . Carbon	tCO ₂ e	32,886
Financial Statements 2024	Total Net Revenue 2024	in millions of R\$	25,447.93
Emission Intensity	Emissions Intensity per Revenue: (1) / (2)	(tCO ₂ e/million R\$)	1,292

Carbon Footprint

In 2020, TIM conducted a study of the Carbon Footprint of 1Mb of traffic using 4G technology. The objective of the study was to map the impacts of greenhouse gas (GHG) emissions throughout the lifecycle of the 4G service offered by TIM at one of its Radio Base Stations (ERBs).

The study revealed that every 1Mb of traffic (4G) produced by TIM generates approximately 1.47g of CO₂e (carbon dioxide equivalent). The main critical points identified in the process are related to the burning of diesel in the generator and the electricity consumption in operations.

This Carbon Footprint analysis allowed TIM to understand the environmental impact of its 4G service and identify areas where improvements can be made to reduce greenhouse gas emissions.

Residual Emissions Compensation

In 2024, TIM invested in offsetting part of the GHG emissions released into the atmosphere by its operations, through the acquisition of carbon credits from Reducing Emissions from Deforestation and Degradation (REDD+) and Renewable Energy (RE) projects, both already supported in 2023.

The two REDD+ projects aim to preserve the Amazon biome: the Rio Preto-Jacundá Extractive Reserve in Rondônia and Envira Amazônia in Acre. In the former, proceeds from the sale of carbon credits are reinvested in the community, aiming to improve local quality of life. The latter converted 200,000 hectares of rainforest from livestock farming into conservation areas. Both are certified with the Verified Carbon Standard (VSC) and Climate, Community & Biodiversity Standard (CCB).

Kitambar Project Biomass (ER), in Pernambuco, uses renewable biomass fuels such as cashew prunings, coconut husks, and wood waste—to fuel its kilns in the production of bricks and tiles. It is recognized with the VCS + Social Carbon seal for offering, in addition to carbon credits, social and environmental benefits to the local community.

Low Carbon Products and Services

TIM is aware of its role in building a low-carbon future. The company understands that the telecommunications sector can contribute to reducing global emissions with digital solutions such as videoconferencing platforms, remote work, connected homes, education platforms, marketplaces, Industry 4.0, and the Internet of Things. These are all services that can encourage more sustainable lifestyles, enabling activities with less transportation and travel, reducing greenhouse gas emissions, and preserving the environment.

An example of this is that by the end of 2024, TIM had 63.5 million accesses across postpaid, prepaid, landline, and internet services. Invoicing and billing consumed 162 tons of paper (FSC) during the period, a 26% decrease compared to the previous year. As part of our climate change initiatives, we encouraged the adoption of digital billing. With this initiative, we avoided the use of approximately 8,100 tons of paper throughout 2024 and the potential generation of waste, saving R\$471 million and reducing emissions equivalent to 10,735 tCO₂ and Scope 3 emissions, considering the life cycle analysis method for raw materials used, recognized by the GHG Protocol.

TIM and TCFD

 TCFD

Support the TCFD

Since May 2022, TIM has publicly declared its support for the TCFD recommendations through its list of supporters, demonstrating better information as a basis for a better understanding of climate risks in its journey to transition to a low-carbon economy. (<https://www.fsb-tcdf.org/supporters/>)

TIM and SBTi



In its 2021 ESG Report, TIM announced its commitment to the Science-Based Targets (SBTi) initiative to establish greenhouse gas (GHG) reduction targets based on a scientifically validated trajectory to keep global temperatures below 1.5°C, in line with the target set by the Paris Agreement at COP21 in 2015. TIM is among the companies working with the Science-Based Targets (SBTi) initiative to reduce its emissions in line with climate science. (<https://sciencebasedtargets.org/companies-taking-action#table>).

Note: The scope 3 reduction target has been reworked to -42% due to the baseline shift to 2023 and in line with SBTi's indications of the expected annual reduction until 2030.

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