
Task Force on Climate-Related
Financial Disclosure (TCFD)
2025
cosan

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## ACRONYMS AND ABBREVIATIONS

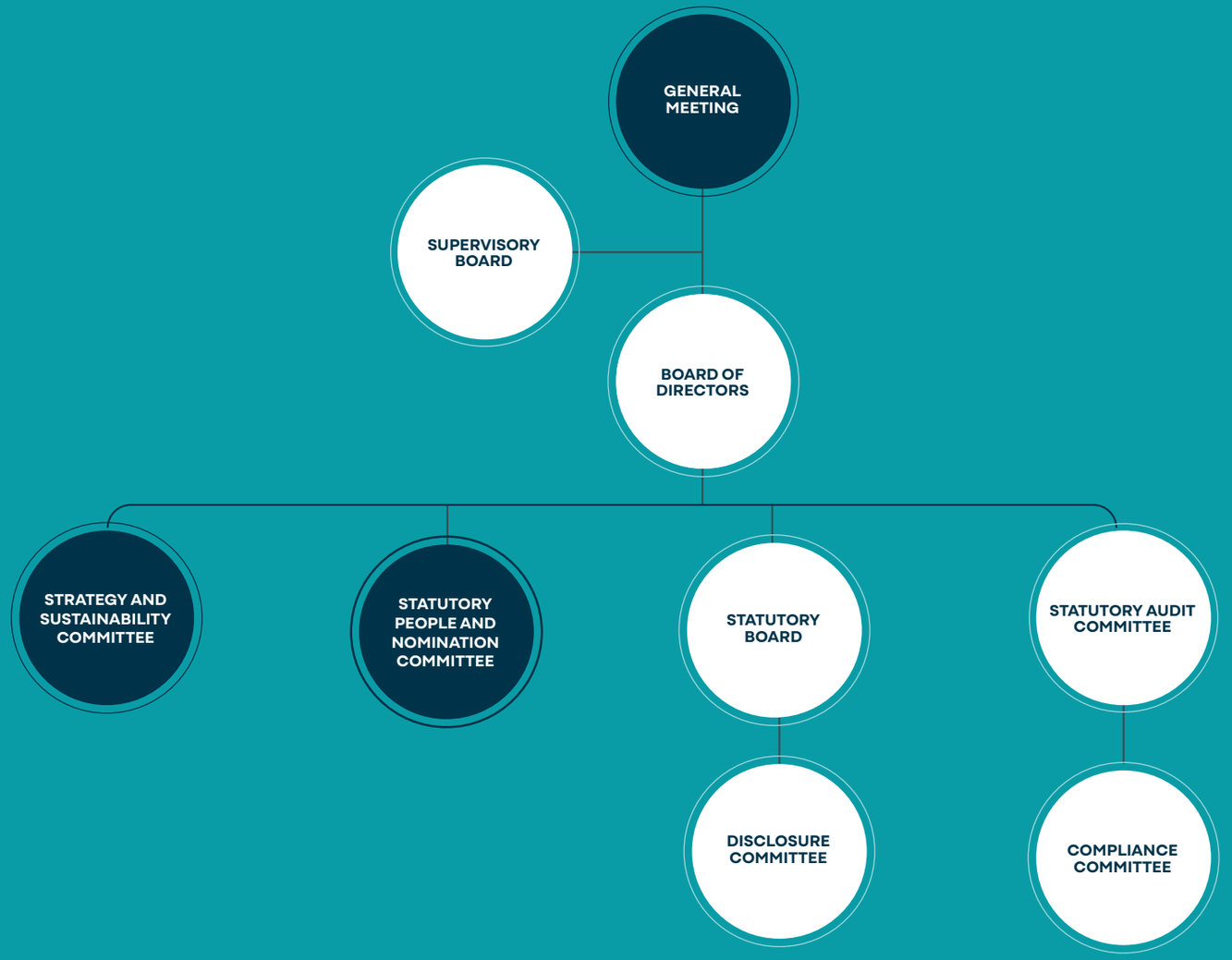
| Acronyms | Description |
|---|---|
| APS | Announced Pledge Scenario |
| BAU | *Business as Usual* |
| GHG | Greenhouse Gases |
| IEA | International Energy Agency |
| IPCC | Intergovernmental Panel on Climate Change |
| KPI | *Key Performance Indicator* |
| NZE | *Net Zero Emissions* |
| SDG | Sustainable Development Goals |
| SSP | *Shared Socioeconomic Pathways* |
| STEPS | *Stated Policies Scenario* |
| TCFD | *Taskforce on Climate-related Financial Disclosure* |
| WEO | World Energy Outlook |

# Climate Change Governance

Cosan's climate change governance ensures that the climate risks and opportunities identified in our businessess are properly incorporated and managed throughout our organizational structure, in accordance with the recommendations of the *Taskforce on Climate-related Financial Disclosures - TCFD*[1].

At the executive level, governance is centered on the **Board of Directors** which, through the three (3) directly subordinate **Committees** and **Statutory Board**, observes and deals strategically with the issues that can influence the sustainability of our business. The members of the Board of Directors are elected by the General Shareholders' Meeting, which in turn elects the Statutory Board for two (2) year terms.

## EXECUTIVE GOVERNANCE STRUCTURE OF COSAN, 2023:

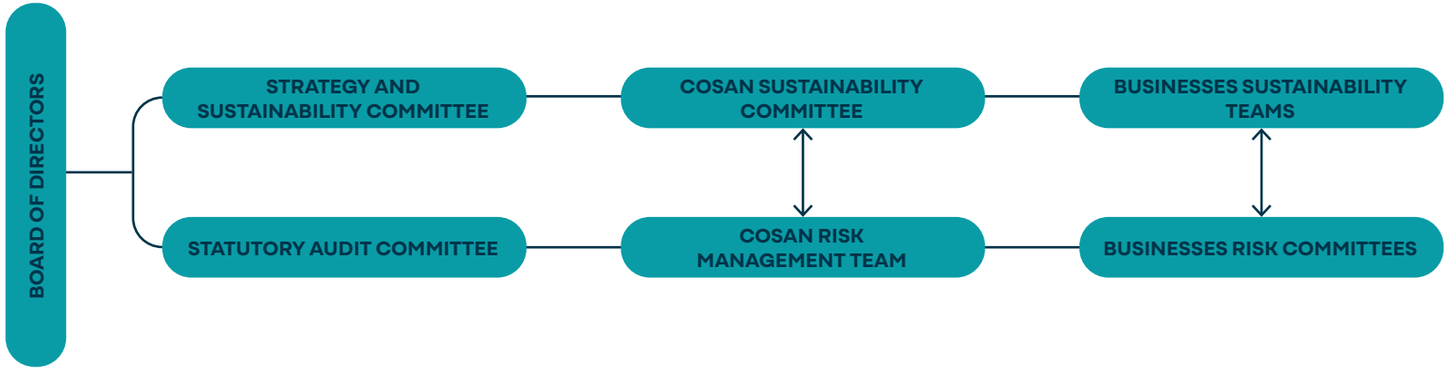



1 FINAL-2017-TCFD-Report.pdf (bbhub.io)

With recognition of the growing challenges posed by the topics covering the sustainability agenda in our company, Cosan strengthened its corporate governance by establishing the **Strategy and Sustainability Committee** in 2021. This committee plays a crucial role in strategically addressing environmental and social issues with the Board of Directors, ensuring that these aspects are effectively integrated into our decision-making processes.

The **Strategy and Sustainability Committee** is made up of four (4) members of the Board of Directors, including the CEO and the Vice-Chairman for Strategy, and is chaired by an independent executive. In addition to promoting a wide-ranging debate on the various issues on the ESG agenda, including climate change, and monitoring the progress of our commitments and our sustainability strategy, the **ESG Vision 2030**[2], the committee holds discussions on the impacts, risks and opportunities arising from climate change at least twice a year. The main results of these discussions are communicated to the Board of Directors and the CEO every six months.

## COSAN GROUP'S MULTI-DISCIPLINARY CLIMATE CHANGE GOVERNANCE STRUCTURE, 2023:




The sustainability issues discussed by **the Strategy and Sustainability Committee** are proposed by the **Sustainability Commission**, made up of the sustainability teams from **Cosan** and the businesses. The main objectives of this commission are: (i) to implement and monitor the commitments and targets made; (ii) to monitor and discuss ESG trends; (iii) to identify synergies, and (IV) to promote the exchange of good practices between the businesses.

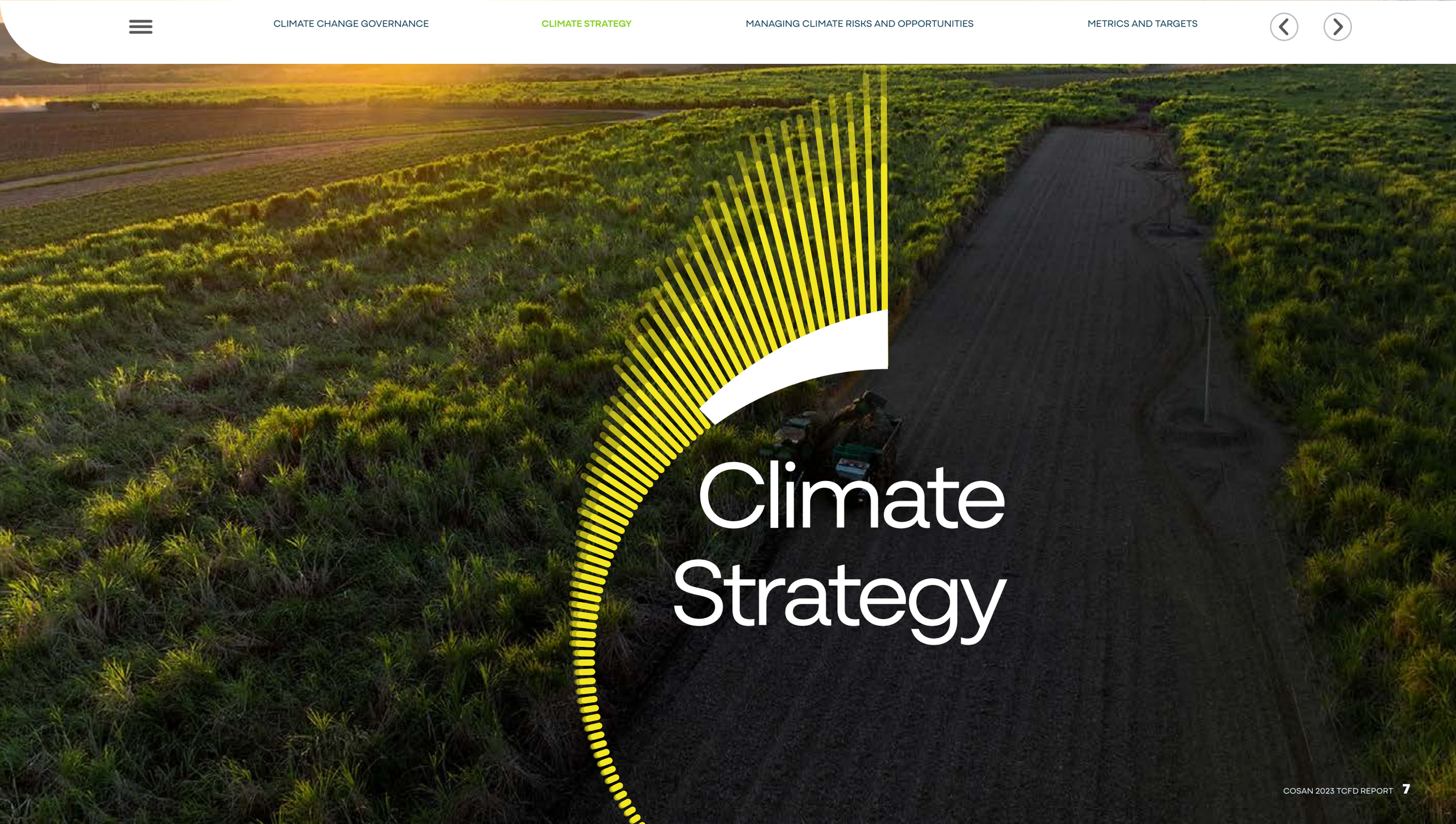
In addition to the committees and the board of directors, Cosan has a robust **risk management** structure, backed by a senior team that acts in an integrated manner with the businessess teams through Risk Committees established in each company. The aim is to identify risks and opportunities that could impact our operations, influencing strategic decision-making.

This process is supported by the **Statutory Audit Committee**, which acts on behalf of all Cosan's companies by sharing best practices and risk management experiences in forums and working groups. It is also responsible for assessing all the risks to which Cosan and its businesses are exposed, covering corporate, strategic and climatic aspects.

2 Sustainability - Cosan

| | |
|---|---|
| BOARD OF DIRECTORS | The highest governance and collegiate decision-making body, comprising a minimum of 5 (five) and a maximum of 20 (twenty) effective members- 20% of whom are independent, elected by the General Shareholders' Meeting for a term of two (2) years, with re-election permitted. |
| | Responsible for defining general business guidelines and policies, monitoring the implementation of these guidelines, and supervising the management of investees. |
| | Plays a frontline role in supporting and monitoring the company's sustainable transformation, based on the Sustainability Strategy - Vision 2030, which includes the issue of climate change. At least twice a year, the Board of Directors is informed of the impacts, risks and opportunities arising from environmental, social and governance aspects by the Strategy and Sustainability Committee. |
| CEO | The CEOs of the investees (Compass, Radar, Moove, Raízen, Rumo) act jointly with the Board of Directors. In addition, they have specific responsibilities related to climate change in their respective businesses. |
| | The responsibilities include monitoring progress against corporate targets, including those related to climate issues; and assessing and managing risks and opportunities related to climate change. |
| | Raízen's CEO, for example, actively participates in approving (a) Raízen's risk matrix, (b) public commitments, such as GHG reduction targets, and in monitoring (c) the evolution of strategic climate change indicators. |
| STATUTORY BOARD | Composed of four (4) people elected by the Board Members for two (2) year terms, with re-election permitted. |
| | The statutory directors legally represent the company and are responsible for ensuring internal organization and the smooth functioning of day-to-day operations in accordance with the general guidelines set by the Board of Directors. |
| STATUTORY AUDIT COMMITTEE | Made up of 100% independent members. |
| | Responsible for advising the Board of Directors on internal control processes; directing, supporting, and monitoring activities related to risk management - including those arising from climate change; supervising the activities of internal audit, the activities of independent audit firms within Cosan; and monitoring the topic of cybersecurity. |
| STRATEGY AND SUSTAINABILITY COMMITTEE - non-statutory | Made up of (4) four members of the Board of Directors, including the CEO and the Vice-Chairman of Strategy, and chaired by an independent director.<br><br>The Strategy and Sustainability Committee informs the Board of Directors and CEO on a quarterly basis of the main impacts, risks and opportunities relating to ESG and Climate Change issues and promotes debates on these issues at least twice a year. |
| | Responsible for advising the Board of Directors on integrating ESG - environmental, social and governance - and climate change issues into the decision-making process; promoting a broad debate on trends in the ESG and climate change agenda; monitoring the sustainability policy and strategy - Vision 2030 - of Cosan, public commitments and performance in the main indexes and ratings.<br><br>Its responsibilities about Climate Change include:<br><br>• Monitoring climate risks and opportunities;<br><br>• Integration of the climate agenda with corporate strategy;<br><br>• Discussion of trends and new regulations;<br><br>• Defining and monitoring public commitments; and<br><br>• Monitoring progress against established targets |
| | This committee is essential for enhancing the senior leadership's perspective on the performance of ESG and climate change topics, as the ESG Strategy - Vision 2030 translates common objectives and presents shared goals for Cosan and its businesses. |

The importance of the climate agenda is also reflected in Cosan's Remuneration Policy. This policy entails establishing financial and sustainability goals to assess the individual performance of the company's directors and executives. This long-term incentive model for senior leadership sets metrics linked to Cosan's performance and its businesses in key ESG indices and ratings. Additionally, it includes specific goals related to climate and other sustainability themes, tailored to the realities and challenges faced by each business. This approach ensures that progress towards climate and sustainability goals is integrated into the organizational strategy and culture and incentivized through long-term incentives.

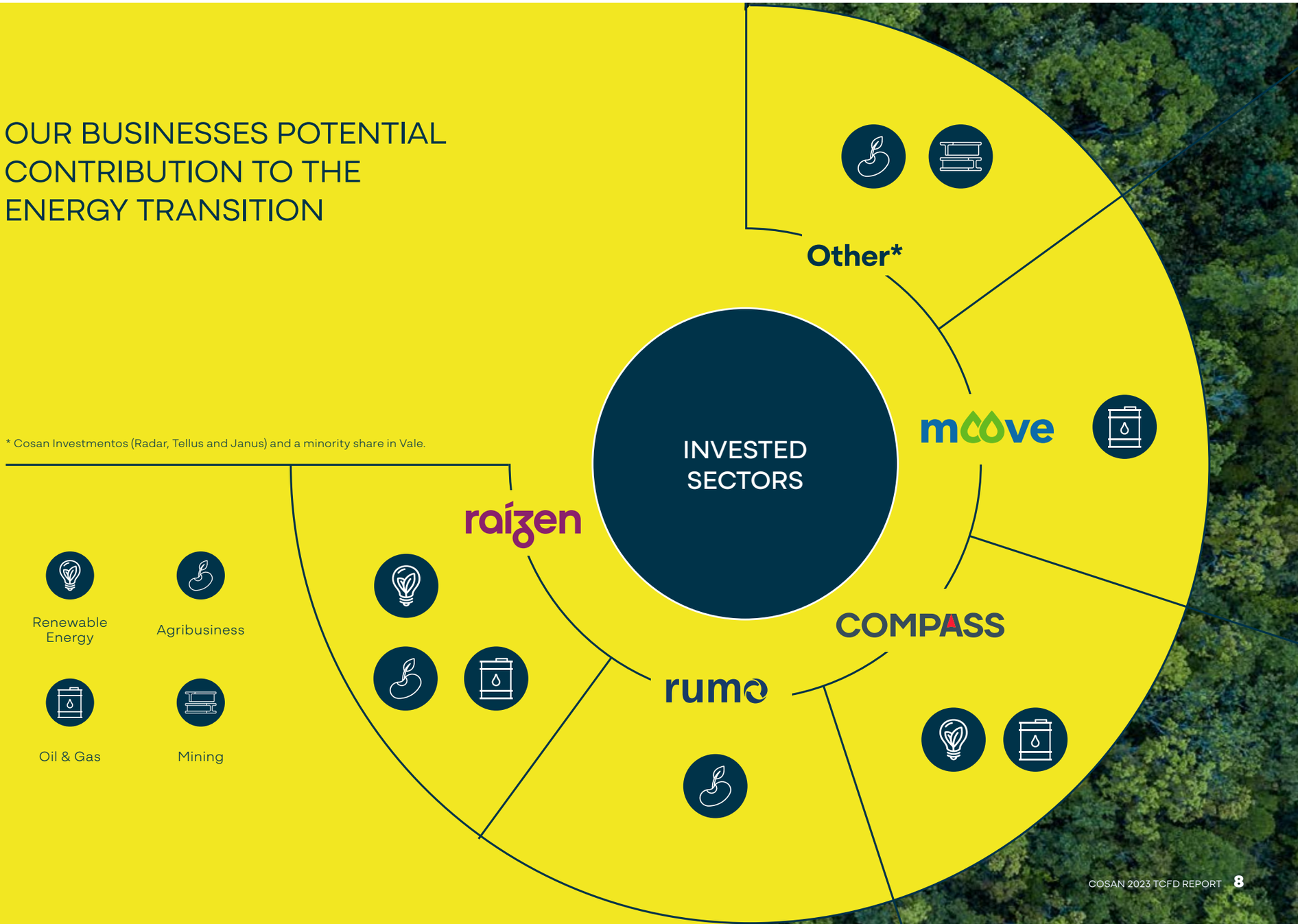


# Climate Strategy

We invest in sectors in which the country has competitive and comparative advantages, such as agribusiness, renewable energies, oil and gas and mining.

**Our goal is to maximize the role of these sectors in driving a transition to a low-carbon economy, thereby not only fostering economic growth but also enhancing the sustainability and resilience of Brazil and the world in response to Climate Change.**

# OUR BUSINESSES POTENTIAL CONTRIBUTION TO THE ENERGY TRANSITION

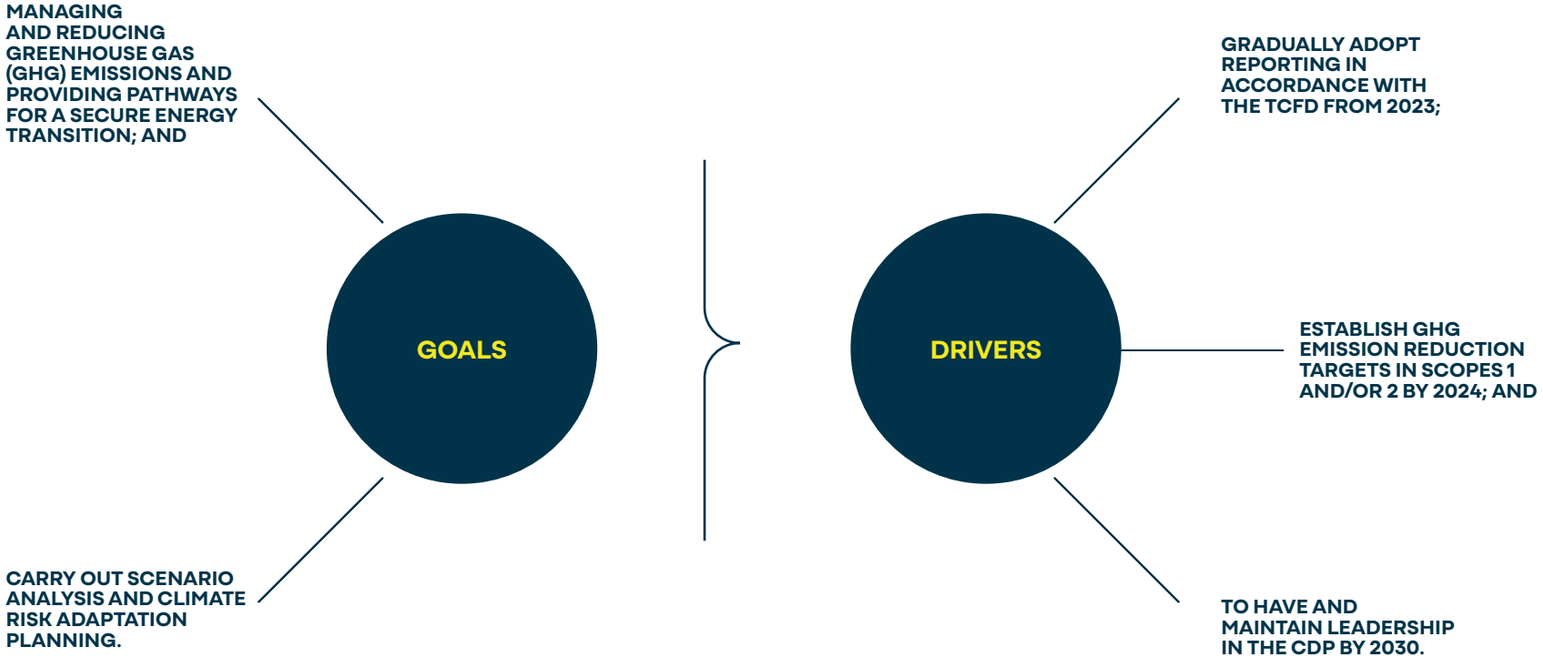


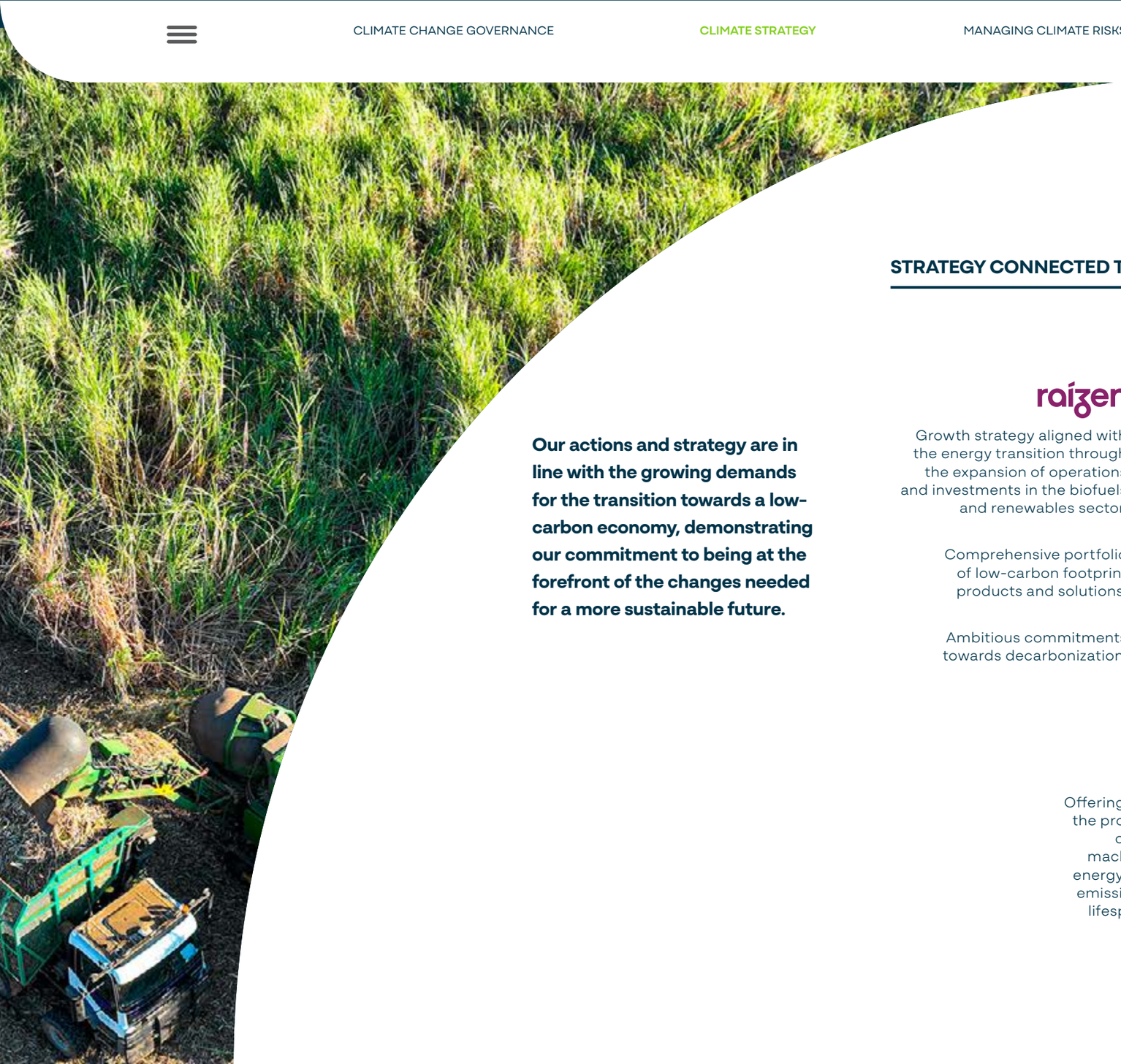

* Cosan Investmentos (Radar, Tellus and Janus) and a minority share in Vale.

To achieve this goal, we drive our business forward using best management practices and clear guidelines, such as outlined in our "ESG Vision 2030." This **strategy not only guides our operations but also wields a constructive and impactful influence, serving as a benchmark for our businesses practices**. It encompasses objectives and guidelines that will steer our environmental, social, and governance performance in the coming years, aligning with the vision of transitioning to a low-carbon economy.

The Climate Change theme is one of the five pillars of our strategy, with established objectives and guidelines for the entire company.

## ESG 2030 VISION FOR CLIMATE CHANGE





**Our actions and strategy are in line with the growing demands for the transition towards a low-carbon economy, demonstrating our commitment to being at the forefront of the changes needed for a more sustainable future.**

## STRATEGY CONNECTED TO THE ENERGY TRANSITION

raízen

Growth strategy aligned with the energy transition through the expansion of operations and investments in the biofuels and renewables sector.

Comprehensive portfolio of low-carbon footprint products and solutions.

Ambitious commitments towards decarbonization.

rumo

Reducing greenhouse gas emissions (GHG) in the railway sector, which already provides a more sustainable logistic solution compared to other transportation modes, by enhancing energy efficiency, reducing fuel consumption, and implementing technological innovations.

COMPASS

Expanding the role of natural gas in the energy transition through the expansion of distribution networks and services.

Leading the distribution of renewable-origin gas in Brazil.

moove

Offering products that enhance the productivity and efficiency of vehicles and industrial machinery, aiming to reduce energy consumption and GHG emissions while extending the lifespan of these equipment.

radar

Preserving environmental conservation areas and conducting restoration activities in degraded areas.

## raízen

Guided by the purpose of reshaping the future of energy, Raízen commenced operations as a joint venture between Cosan and Shell, integrating their assets and long-term strategies grounded in the biofuels, sugar, renewable energy, and mobility markets. Since then, it has solidified its position as one of Brazil's largest companies with global scale in its fields of operation.

With a growth strategy aligned with the energy transition through operations in the biofuels and renewables sector, Raízen has developed a comprehensive portfolio of low-carbon footprint solutions and products that bolster its ambitious commitments to decarbonization.

Notably, **second-generation ethanol (E2G)**, one of Raízen's key ventures in the energy transition, surpassed operational capacity, achieving a record production of 30 million liters in the harvest, a 64% increase compared to the previous harvest volume. Additionally, a record volume of E2G was agreed upon for commercialization with Shell, with a total of eight E2G plants under development, all with signed contracts.

E2G is Raízen's proprietary technology produced from the reuse of sugarcane bagasse, resulting in up to a 50% increase in ethanol production without expanding the planted area. Furthermore, this biofuel presents a 30% lower greenhouse gas emission index compared to ethanol (E1G) and up to 80% lower compared to gasoline.

**35** Bioenergy parks

**6** E2G plants under construction

**5** million tons of $CO_2e$ avoided per year through the offering of renewable products

**3** TWH of renewable electricity generated through biomass

First ethanol producer worldwide certified by ISCC CORSIA

## COMPASS

With its expanding gas distribution platform and new investments in EDGE, the company has evolved its positioning to support a safe, competitive, and efficient energy transition.

A-List CDP in 2023

**Compass and Orizon**
Partnership for the construction of a biogas purification plant

**64%**
reduction in scope 1 GHG emissions at Comgás (2023/2019)

**Sustainble Cities** Project
(Necta - the first biogas distribution network in the northwest of São Paulo)

**Natural gas plays a crucial role in the energy transition due to its lower carbon impact compared to other fossil fuels.** By displacing these more polluting fuels, natural gas helps reduce greenhouse gas emissions and contributes to mitigating climate change.

Furthermore, natural gas can serve as a complementary source of renewable energy, helping to balance the intermittency of sources such as solar and wind, thereby providing greater security and stability to the energy system.

Moreover, to further drive the climate agenda, the company is committed to enhancing the distribution of renewable gas in Brazil. In the last year, important investments have been made in sustainable and efficient alternatives, such as biomethane.

## rumo

Rumo is the largest independent **railway logistics** operator in Brazil. Through railway concessions, it currently operates in nine Brazilian states, offering railway transportation, storage, and transshipment services.

The company boasts over 13,500 km of railway lines and ten terminals. Through its operations, it connects major producers and exporters across various economic sectors, including agricultural commodities (such as soybeans, soybean meal, corn, sugar, etc.), fertilizers, liquid fuels, paper, and pulp, to the main national ports: Santos (SP), Paranaguá (PR), São Francisco do Sul (SC), and Rio Grande (RS).

Through its extensive operations, the company contributes to the transformation of Brazil's infrastructure, focusing on increasing transportation capacity and improving energy efficiency. Rumo works continuously to prevent and mitigate potential impacts on its operations related to climate change and exposure to physical risks, while also identifying associated opportunities.

**39%** reduction in emissions per TKU (ton per useful kilometer) since 2015

Up to **7.6%** fewer greenhouse gas emissions compared to less efficient modes of transportation

Issuance of the first Green Bond for freight railways in Latin America, in 2020, raising **$ 500 million** for investments in infrastructure and rolling stock acquisition, ensuring gains in performance and efficiency linked to lower greenhouse gas emissions

Early achievement of the goal to reduce emissions per TKU by **15% by** 2023, based on a comparison with 2019, reaching **17.4%**

## moove

Focused on lubricants and offering premium lubricants, industrial and automotive specialties, and services, Moove has expanded its presence in the global market over the years and achieved record results by leveraging the potential of its differentiated assets and focusing on executing strategic priorities – developing high-performance teams, fostering a culture of efficiency, and expanding businesses.

In the ESG agenda, **Moove seeks to strengthen sustainability partnerships, promote the premium offering of products and services, and amplify positive impacts on customers' value chain**.

With a focus on advancing commitments reinforcing an established strategy for sustainable environmental practices and mitigating the effects of climate change, the company is progressing in monitoring greenhouse gas emissions throughout the value chain. It is focusing on energy efficiency, water and effluent management, and waste management through packaging and material circularity.

Gold Seal in the Brazilian GHG Protocol Program for the **2nd** consecutive year

Achievement of the goal to have **15%** Recycled Plastic in plastic packaging

**Premium** lubricants providing increased productivity and efficiency at low cost, both in vehicles and industrial plants

## radar

Recognized as a benchmark in agricultural property management in Brazil, our land portfolio stands out for its diversity and uniqueness, driven by the quality and extent of our territories. With a total area of 315,000 hectares spread over 7 Brazilian states, our territorial presence covers a variety of climates and soils ideal for a wide range of agricultural crops and with potential to act in the carbon economy.

**This segment continues to explore investment opportunities in new crops, irrigation techniques and establishing strategic partnerships to maximize the potential of our land, while also exploring the opportunities of the carbon market in Brazil.**

In 2023, we monitored over
**800,000**
hectares surrounding our properties using our fire detection intelligence

We restored over
**2,200** hectares
of native vegetation in the last 10 years

**100** hectares
were restored in 2023 and an additional
**150** hectares are already planned for 2024

However, along with the opportunities offered by the energy transition mentioned above, we are also **susceptible to risks from climate change**. We seek to strengthen climate change mitigation measures in our businesses by setting emission reduction targets and investing in cleaner and more efficient technologies. **In addition, we are committed to formalizing and establishing ESG criteria in the allocation of our capital, ensuring that our investments are aligned with the environmental, social and governance principles we seek.**

The resilience of our strategy is vulnerable to a set of risks which, are classified according to their nature as (a) strategic, (b) financial, (c) compliance, and (d) operational, depending on the area(s) of the organization affected by the events and their origin (internal or external).

The risks and opportunities related to climate change identified in our businessess represent an important external source of risk, which translates into the four (4) categories of risks mentioned above or enhances risks originating from other sources.

# DIFFERENT TYPES OF RISKS

The risks identified are categorized according to their origin (internal or external) and nature and divided into four classifications:

### STRATEGIC

Associated with senior management decision-making, which can lead to a substantial loss in economic value.

### FINANCIAL

Associated with the exposure of our financial operations.

### COMPLIANCE

Resulting from non-compliance with laws and regulations or even internal rules.

### OPERATIONAL

Resulting from failures, deficiencies or inadequacy of internal processes, people and systems, as well as natural disasters or strikes capable of generating losses in production, assets, clients or revenue.

## EXAMPLE OF STRATEGIC RISKS RELATED TO CLIMATE CHANGE:

| RISK CATEGORY | RISK TYPE | IMPACT ON COSAN | POTENTIAL ADAPTATION/ MITIGATION MEASURES |
|---|---|---|---|
| Strategic and Financial | Change in customer behavior towards products and solutions with reduced environmental impact | Loss of market share, jeopardizing business growth strategies and affecting investments returns. | Businesses: Actions and investments to reduce the carbon footprint of the portfolio of products and services; dissemination of social and environmental practices among suppliers and the supply chain;<br><br>Cosan: Directing investments in low-carbon products and solutions and/or those aimed at increasing energy efficiency; strategies for expanding commercial agreements, establishing new partnerships and reviewing the capital allocation strategy. |

The risk associated with the change in customer behavior is intrinsically linked to the transition to a low-carbon economy, representing the so-called transition risks. A clear example of this scenario is the **growing demand from international markets for the sustainability attributes of products, such as carbon emissions and the traceability of inputs**. This rising demand could represent a risk for Cosan and its businesses. If we do not adapt to this trend and manage to maintain and improve sustainability attributes in our products, such as low emissions and traceability of inputs, we run the risk of losing competitiveness to our competitors in these key markets.

This represents a strategic and financial risk for Cosan, affecting not only the financial performance of the company, but also the reputation and competitive position of our company. It is crucial that we are aware of these trends and take proactive measures to mitigate these risks, thus ensuring the sustainability and success of our investments in the long term.

This example demonstrates how the risks arising from climate change in our operations represent a strategic challenge for Cosan, threatening our growth strategies and the expected returns from our investments. In addition, these risks have the potential to significantly amplify other risks identified in our monitoring.

In this way, mapping the risks and opportunities related to climate change in our businesses has become a central part of our Sustainability Strategy – Vision ESG 2030, boosting our understanding and compliance with the recommendations of the *Taskforce on Climate-related Financial Disclosures* – TCFD.

In recent years, we have dedicated significant efforts to improving our corporate risk matrix, identifying, and detailing climate risks and opportunities and understanding their impact on our planning and strategy.

# Managing Climate Risks and Opportunities

Over the last few years, we have improved the process of identifying, assessing and managing risks and opportunities related to climate change throughout Cosan and its businesses, following the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

The management of climate risks in each business is aligned with Cosan's risk management guidelines, covering stages that include the identification of risks and opportunities, prioritization, implementation of mitigation measures and continuous monitoring.

In order to manage the risks to which we are exposed, the Risk Management, Audit, Internal Controls, Information Security and Legal Compliance areas work in an integrated manner for the benefit of all Cosan's companies.

**Our risk management methodology includes assessments of the probability of occurrence and the financial, environmental, social, commercial, legal/regulatory, health, safety, image, and reputation impacts.** Those that have a high impact and are more likely to occur are classified as priorities. The definition of action plans and controls involves the board responsible for the process in which the risk was identified, and the priority risks are reported periodically to the senior management of Cosan and its businesses.

The priority risks mapped are brought to the attention of the Audit Committee for discussion. Although the risk management process is conducted in a coordinated manner, from identification to prioritization and categorization, the implementation of the action plans is the responsibility of the managers of each Cosan's business. These companies have structures dedicated to governance, including Internal Controls, Health, Safety and Environment (HSE), Crisis Management and Information, and Cyber Security.

It is important to note that, at the same time, a process of decentralization in risk management was initiated, with the aim of improving risk practices in all the companies. To this end, focal points were appointed in various areas, Risk Committees were set up, and training and workshops were implemented to disseminate knowledge on the subject. Although the process is ongoing and should extend throughout 2024, **there is already a significant level of governance and progress in the Cosan's businesses, which are now managing their own risk matrices.** This decentralization strengthens organizational resilience and adaptive capacity in the face of emerging challenges and threats.

In addition, in order to improve climate risk management in our company, we have developed a specific matrix for each company. These matrices were integrated both into the general risk matrix of each business and, in a consolidated manner, into Cosan's matrix. **This initiative aims to strengthen Cosan's climate strategy, ensuring continuous monitoring of the vulnerability of our operations to climate risks, as well as the adoption of actions to mitigate and adapt to climate change.**

The in-depth study carried out in recent years and the prioritization of climate risks and opportunities reinforce our understanding of the challenges associated with climate change identified in each of our businesses, as summarized below. **Initially, the study was conducted for Rumo, Raízen, Moove and Compass. However, we intend to expand this analysis to also include Radar and other businesses that we incorporate into our company.**

## EFFECTS OF CLIMATE CHANGE ON COSAN'S BUSINESSES

raízen

Extreme weather conditions can directly affect the productivity and quality of sugarcane, reducing sugar and ethanol production capacity and affecting the company's revenue generation.

Transition risks related to carbon pricing and taxation mechanisms, such as the Renovabio program, along with the growing rigor of international markets regarding the sustainability aspects of products also represent an important risk for the business.

rumo

Rumo is subject to the impacts of physical climate risks on its infrastructure and operations, such as interruptions caused by landslides during extreme rainfall. Changes in rainfall and temperature patterns can also affect the agricultural sector, posing a significant risk to Rumo. A decrease in agricultural productivity could result in a reduction in demand for its rail transportation services, directly affecting the supply of products to the market.

The demand for low-carbon transportation services and technologies, along with the potential need to adapt to new regulatory requirements, and possible carbon taxes also lead to potential impacts on the business.

moove

With operations in South America, and also with assets in Europe and the United States, Moove is subject to the impacts of physical weather risks in its operational units, which can impact the company's routine operations, the receipt of inputs or even cause direct damage to facilities.

Stricter regulations for GHG emissions from products in the countries in which Moove operates, as well as the trend towards technological and market demand for the supply of alternative products with a reduced carbon footprint, could impact the company's business.

COMPASS

Acting in the natural gas and energy sector in Brazil, the company is exposed to climatic events that may affect its extensive line of gas pipelines in Brazilian territory, as well as regasification terminals. The tendency for acute weather events to increase could cause impacts and damage to facilities, affecting gas distribution;

As global pressure to reduce carbon emissions increases, there is a possible transition from traditional natural gas to cleaner energy sources in the long term, affecting the company's value generation. In addition, aspects related to carbon pricing, taxation and new regulatory mandates could impact the company's business model.

This process of mapping and prioritizing climate risks and opportunities for each business was developed based on five main stages:

## PROCESS FOR IDENTIFYING AND ASSESSING RISKS AND OPPORTUNITIES RELATED TO CLIMATE CHANGE AT COSAN

### A – SELECTING PARAMETERS TO CLIMATE RISKS ASSESSMENT

**Time Horizons**
- Baseline (2022)
- Short-term (2030)
- Medium Term (2050)

**Climate Scenarios**
- Physical Risks - Shared Socioeconomic Pathways (SSP) from IPCC AR6, 2021[1].
  - Optimistic: SSP1-2.6
  - Pessimistic: SSP5-8.5
- Transition Risks - International Energy Agency (IEA, 2022)[2]
  - Net Zero Emissions (NZE)
  - Announced Pledges Scenarios (APS)
  - Stated Policies Scenarios (STEPS)

### B – IDENTIFICATION OF CLIMATE RISKS AND OPPORTUNITIES

**Physical Risks:**
- 9 types of climate events
- Climate modeling based on various climate data sources: NASA, IPCC, NOAA, WRI aqueduct.

**Transition Risks and Opportunities:**
- Cosan's climate strategy
- Corporate risk matrix
- Sectoral and market analyses
- Brazilian and international regulatory scenarios

### C – PRIORITIZATION OF RISKS AND OPPORTUNITIES

The identified risks were prioritized following the methodology and risk dimensions adopted in Cosan's risk management process:

- Qualitative analysis of the impacts of risks on the business
- Evaluation of the adaptation and mitigation measures already adopted
- Definition of the level of impact and probability of each risk
- Construction of prioritized risk matrices for each business

### D – ASSESSMENT OF FINANCIAL IMPACTS

**Physical Risks:**
- Disruption of our activities
- Infrastructure damage
- Necessary mitigation and adaptation actions

**Transition Risks and Opportunities:**
- Impacts on strategic planning, revenue, and operational costs

### E – ACTION PLANS AND MONITORING

- Definition and control of mitigating actions
- Definition of metrics and goals for monitoring
- Periodic reporting to the Executive Board, Audit Committee, and Board of Directors
- Periodic review of risk exposure

[1] AR6 2021 | IPCC

[2] WEO 2022 | IEA

# Selecting Parameters to Climate Risk Assessment

We began the process of managing climate risks and opportunities by carefully selecting methodological references, the essential parameters for climate modeling (including types of risks, time horizons and climate scenarios) and defining the scope (involving assets and operations). Our goal is to ensure alignment with the best scientific references and market practices.

**Type of Risks**

We considered the TCFD taxonomy to select the risks we analyzed, as well as some corporate risks that relate to the drivers of the transition to a low-carbon economy, such as market and regulatory risks.

## CORPORATE RISKS RELATED TO CLIMATE CHANGE

PHYSICAL

### ACUTE AND CHRONIC

- Impacts of extreme weather conditions or gradual changes in weather patterns on the organization's physical assets. This can include extreme weather events such as intense storms, floods, prolonged droughts, heat waves, forest fires and rising sea levels.
- Damage to infrastructure, Disruption to operations, Impact on safety and the environment.

REGULATIONS

### CURRENT AND EMERGING

- Carbon Pricing Mechanisms, Sectoral Regulations, Mandatory Reporting of Emissions and National Targets (NDC).

TECHNOLOGY

### SHORT AND LONG TERM

- Availability of more renewable and efficient energy sources; need for technological adaptations to manufacture and distribute products with a low carbon footprint.

MARKET

### CUSTOMERS & SUPPLIERS

- Impact on the demand, supply and cost relationships of raw materials and products due to the need to adapt to the transition to a low-carbon economy, with the use of renewable energy and demand for products with a low carbon footprint.

REPUTATIONAL

### STAKEHOLDER PERCEPTION

- Consumer, market, and other stakeholders' perception of companies may be influenced by their actions and stance regarding combating Climate Change.

**Geographic Scope**

To assess the physical risks of climate change, each business selected the assets units or sections that are considered most representative of its operations. This selection was made considering both the type of activities carried out and the physical location of the assets.

For Raízen, assets located across all regions of Brazilian territory and in Argentine territory have been selected.

For Rumo, all the railroad networks under the company's concession until 2023 were included - Railroads Norte, Paulista, Central, Sul and Oeste, which operate in different regions of Brazil, as well as the port terminals of Santos (SP), Paranaguá (PR), São Francisco do Sul (SC) and Rio Grande (RS).

Regarding Moove, four operational units were considered for assessment, two of which are factories (Rio de Janeiro/RJ and the United Kingdom) and two terminals (Duque de Caxias/RJ and Buenos Aires/Argentina); and one outsourced terminal abroad (Texas/United States).

Compass considered the gas pipeline lines belonging to Comgás and Sulgás in the southeast and south of Brazil, as well as the Terminal de Regaseificação de São Paulo (TRSP), located in Santos/SP.

Initially, the study was conducted for Rumo, Raízen, Moove and Compass. However, we intend to expand this analysis to also include Radar and other businesses that we incorporate into our company.

**Time Horizons**

To make climate modeling feasible, we followed the recommendations of the TCFD by adopting the intervals indicated by the Intergovernmental Panel on Climate Change (IPCC) to select the following time horizons:

- Baseline (2022);
- Short term (2030); and
- Medium term (2050).

**Climate Scenarios**

To assess the behavior of climate risks in extreme situations, we follow the recommendations of the TCFD by considering climate scenarios that capture a variety of future outcomes, both favorable and unfavorable. This includes at least one optimistic and one pessimistic scenario.

- **Physical Risks** – IPCC AR6 *Shared Socioeconomic Pathways* - SSP scenarios, 2021[1]:
  - Optimistic: SSP1-2.6, in line with the objective of limiting global warming to 1.5ºC or 2ºC; and
  - Pessimistic: SSP5-8.5, Business as Usual - BAU.
- **Transition Risks** – International Energy Agency (IEA) from *World Energy Outlook (WEO 2022)*[2]:
  - Optimistic: Net Zero Emissions (NZE), aligned with the goal of limiting the increase in global temperature to 1.5ºC by 2100 (above pre-industrial levels), considering the fulfillment of the main UN SDGs related to energy;
  - Conservative: Announced Pledges Scenario (APS), considering a global temperature increase of 1.7ºC in 2100 (above pre-industrial levels), considering the fulfillment of all climate-related commitments already announced, in full and on time, by governments; and the commitments made by companies and other stakeholders that contribute to the ambition set by governments; and
  - Pessimistic: Stated Policies Scenarios (STEPS), which considers a global temperature increase of 2.4ºC by the year 2100 compared to pre-industrial levels. This scenario takes into account the policies and measures that governments are currently implementing to achieve their goals and objectives in the energy sector and throughout the economy.

[1] AR6 2021 | IPCC

[2] WEO 2022 | IEA

# Identifying Climate Risks

The parameters selected allowed us to identify the main risks and opportunities related to climate change that have the potential to impact our business and operations.

**Physical Risks**

Based on the definition of the geographical scope (selection of assets and points of interest), climate scenarios and time horizons, 9 (nine) types of climate events were analyzed to capture the behavior of these risks in the baseline (2022), as well as the increasing trend in the short and medium term (2030 and 2050), including: extreme heat and cold, tropical cyclones; forest fires, coastal, river and extreme rainfall flooding, landslides, water scarcity and drought.

This assessment was carried out through climate modeling that accessed the main climate databases, such as the *Earth Observatory of the National Aeronautics and Space Administration* (NASA), the *Intergovernmental Panel on Climate Change* (IPCC), the *National Oceanic and Atmospheric Administration* (NOAA), the *Water Risks Atlas of the World Resources Institute* (WRI Aqueduct), among others.

As a result of the climate modeling, we obtained an initial map of the main physical risks to which our operations may be subject, which enabled us to reflect on their potential impacts and the adaptation and mitigation measures already adopted by the business. **Based on this initial analysis, we drew up a matrix of priority climate risks specific to each business.**

**Transition Risks**

The identification of the transition risks most relevant to the business initially involved a qualitative analysis of the drivers of each risk selected, taking into account those already listed in corporate risks, as well as those commonly pointed out in analyses of our sector and market. We identified as the main vectors of transition risks for our business the imminent establishment of a Carbon Market in Brazil and its potential impact on the sectors assessed and their operators, the technological challenges for the transition to a low-carbon economy and possible changes in the behavior of clients in certain sectors in the face of the impacts of climate change.

Climate modeling of transition risks allowed us to assess the behavior of these risks in optimistic and pessimistic scenarios, highlighting their materiality in the short term (up to 2030) and medium term (up to 2050).

# Prioritizing Risks and Identifying Opportunities

To prioritize the risks identified, we carried out a qualitative analysis of the potential impacts on each of our businesses and operations, using as a tool the risk dimensions of Cosan's corporate risk matrix, which includes environmental, social, health and safety, commercial, operational and reputation aspects. At the same time, we identified the adaptation and mitigation measures already adopted, as well as additional measures and opportunities related to climate change.

This exercise made it possible to classify risks and opportunities according to their level of impact and probability.

**As a result, we built a matrix of climate risks and opportunities for each business, which allowed us to prioritize the risks according to the priority risk zone considered in our methodology.**

It should be noted that the identification of material physical risks for each business unit was carried out conservatively, considering the most critical result among all the locations analyzed for each business. Once a material physical risk was identified for at least one location, it was also considered material for the business unit in question. Therefore, not all of the company's locations and assets necessarily have the level of risk indicated.

Below we present the priority risks and opportunities for each of our businesses. In the following tables, we highlight only the risks identified as material for each business.

**For more detailed information on the risks affecting each of our companies, please refer to the respective Annual Reports or specific TCFD reports.**

## PHYSICAL CLIMATE RISKS[1]

| Category | Driver | Risk Level | | Business | Impact on Business | Risk Management |
|---|---|---|---|---|---|---|
| | | Baseline | 2050 | | | Adaptation/Mitigation Measures |
| Chronic | Changes in rainfall patterns and water stress (drought) | Low | High | RAÍZEN | • In our sugar, ethanol, and bioenergy production operations, we have influence over one of the largest agricultural areas in the world, with more than 1,330,450 hectares of arable land.<br>• Sugarcane yields and sucrose content are mainly influenced by climatic conditions such as rainfall and temperature.<br>• Therefore, a change in rainfall patterns in the center-south region of Brazil, where our bioenergy parks are located, especially an increase in periods of drought, could cause a reduction in the amount of sucrose per planted area, impacting the final volume of sugar, bioenergy and ethanol produced, generating a possible drop in revenue for this line of business. | • We continuously monitor the compatibility of the sugarcane variety with the climatic conditions in the states of São Paulo, Goiás and Mato Grosso do Sul and make the appropriate adjustments according to the conditions found.<br>• Implementation of good management practices to ensure greater resilience to harvesting, including assessment of the appropriate time for harvesting, planting, and sugarcane nutrition, to favor water collection.<br>• Development of products that do not depend on an increase in planted area, such as E2G, since the material used is actually a residue from the primary process (mainly first-generation ethanol and sugar production). |
| | Extreme Heat | High | High | RUMO | • Originates buckling of the rails and damage to the structure, increasing the risk of train derailments and the leakage of cargo and fuel and, consequently, jeopardizing the fulfillment of commercial contracts.<br>• Presents risks to employees' health and safety. | • Installation of derailment and rail break detectors at various points along the rail network;<br>• Operational health and safety plan for extreme temperatures. |
| | | Medium | High | MOOVE | • Compromises the functionality of the infrastructure and measurement and control equipment;<br>• Potential environmental damage due to the increased risk of fires in places where dangerous/inflammable products are stored and/or distributed; and<br>• Presents risks to employees' health and safety. | • Operational health and safety plans and procedures for dealing with extreme temperatures;<br>• Facilities that provide greater thermal comfort;<br>• Increased localized temperature control and monitoring. |
| Acute | Rain-induced Landslides | Medium | Medium | COMPASS | • Originates leakage of natural gas due to the rupture of buried pipes or via an aerial crossing, compromising gas distribution and putting the safety of teams and surrounding communities at risk;<br>• Affects the operation of the system, generating impacts on operating costs and revenues. | • In thermoelectric power plants, provide redundant power supply, ensuring greater stability and safety;<br>• Use emergency devices to quickly isolate and close pipelines - Shut Down Valves (SDV) - in the event of a leak.<br>• Asset Integrity Management System anchored in the pillars of: Operational Risk Management, Damage Prevention, Emergency and Repair Program and Integrated Asset Register. |

[1] The geographical scope of the physical risk assessment covers several regions, reflecting significant variability in the levels of risk in each location. Thus, the risk classification indicates the highest level identified in the locations assessed, without necessarily covering all the operations assessed.

## PHYSICAL CLIMATE RISKS[1]

| Category | Driver | Risk Level | | Business | Impact on Business | Risk Management |
|---|---|---|---|---|---|---|
| | | Baseline | 2050 | | | Adaptation/Mitigation Measures |
| Acute | Rain-induced Landslides | High | High | RUMO | • Overturning of Wagons and potential leaks of cargo and fuel, jeopardizing the delivery of goods and contaminating waterways and soil.<br>• Damages roads and signaling equipment, putting the safety of employees, users, and the surrounding communities at risk. | • Installation of weather stations on the most critical stretches to predict extreme weather events and ensure early action to mitigate potential impacts. |
| | Forest Fires | High | Critical | RUMO | • Damages roads and signaling equipment, putting the safety of employees, users, and the surrounding communities at risk.<br>• Paralyzes the movement of trains until the damage to the train is repaired, impacting the maintenance of commercial contracts (cargo). | • Installation of weather stations on the most critical stretches to predict extreme weather events and ensure early action to mitigate potential impacts. |
| | Extreme Rainfall Flooding | Critical | Critical | RUMO | • Paralyzes the movement of trains, impacting the maintenance of commercial contracts (cargo);<br>• Cargo leaks compromise the delivery of goods and possibly contaminating adjacent areas. | • Installation of weather stations on critical stretches to predict extreme weather events and ensure early action to mitigate potential impacts. |
| | | High | High | MOOVE | • Hinders access to facilities, and interrupts the flow of in coming raw materials and outgoing products;<br>• Stops operations; and<br>• Impacts the environment through effluent overflow. | • Weather monitoring and forecasting systems to predict extreme weather events and ensure early action to mitigate potential impacts.<br>• Operational procedures and infrastructure maintained according to established plans;<br>• Control systems and resources and additional contingencies |

[1] The geographical scope of the physical risk assessment covers several regions, reflecting significant variability in the levels of risk in each location. Thus, the risk classification indicates the highest level identified in the locations assessed, without necessarily covering all the operations assessed.

## PHYSICAL CLIMATE RISKS[1]

| Category | Driver | Risk Level | | Business | Impact on Business | Risk Management |
|---|---|---|---|---|---|---|
| | | Baseline | 2050 | | | Adaptation/Mitigation Measures |
| Acute | Extreme Rainfall Flooding | High | High | COMPASS | • Originates leakage of natural gas due to the rupture of buried pipes or via an aerial crossing, compromising gas distribution and putting the safety of teams and surrounding communities at risk;<br>• Originates river erosion, which could expose the buried natural gas network and rupture due to lack of supporting soil; and<br>• Exposes crossing structures to the impact of debris carried by the current. | • In thermoelectric power plants, provide redundant power supply, ensuring greater stability and safety;<br>• Use emergency devices to quickly isolate and close pipelines - Shut Down Valves (SDV) - in the event of a leak.<br>• Asset Integrity Management System anchored in the pillars of: Operational Risk Management, Damage Prevention, Emergency and Repair Program and Integrated Asset Register. |
| | Extreme Winds and Storms / Tropical Cyclones | High | Critical | MOOVE | • Places the health and safety of employees and suppliers at risk;<br>• Makes it difficult to receive inputs at our terminals, jeopardizing production. | • Increase of infrastructure resilience; and<br>• Greater monitoring and control of climate forecasts and projections related to rainfall and the behavior of tides and winds. |
| | | High | High | RUMO | • Damages roads and signaling equipment, putting the safety of employees, users and the surrounding communities at risk. | • Installation of weather stations on the most critical stretches to predict extreme weather events and ensure early action to mitigate potential impacts. |

[1] The geographical scope of the physical risk assessment covers several regions, reflecting significant variability in the levels of risk in each location. Thus, the risk classification indicates the highest level identified in the locations assessed, without necessarily covering all the operations assessed.

## TRANSITION RISKS

| Category | Risk | Risk Level | | Business | Impact on Business | Risk Management |
|---|---|---|---|---|---|---|
| | | 2030 | 2050 | | | Risk Adaptation/Mitigation Measures |
| Political and Legal | Increased Pricing of GHG Emissions - CBIOs (Decarbonization Credit) | High | Undefined | RAÍZEN | Carbon pricing and taxation mechanisms, for companies working in the fuel distribution sector and present risks that must be managed, as the costs related to operating a carbon pricing program can be significant, mainly due to the volatility of market prices and the possible lack of commitment from other players in the sector.<br><br>In 2016, Brazil's Ministry of Mines and Energy (MME) launched Renovabio, which aims to expand biofuel production by selling decarbonization credits (Cbios). In this sense, the power plants generate these credits, and the fuel distributors must buy quotas. This initiative, however, could increase operating costs and impact the margins of committed companies such as Raízen. | We manage this risk differently from other distributors, as we also generate CBIOs, which has a smaller impact on the balance sheet.<br><br>To mitigate this risk, the market intelligence team monitors the supply and demand of CBIOs, as well as price fluctuations, to identify the best time to buy the credits.<br><br>To capture the associated opportunity, Raízen maintains a robust management of its emissions and maps out the best ways to reduce the carbon intensity of production, in order to increase the generation of credits as bioenergy parks evolve in efficiency. |
| | Pricing GHG Emissions | High | Medium | RUMO | Cosan, in sectors such as renewable energy, oil and gas, agribusiness, mining, and carbon economy, engages in activities traditionally associated with carbon-intensive practices, especially in the distribution of fossil fuels and mining. As a result, the company faces potential impacts from carbon pricing policies in the markets in which we operate. Recent developments in the regulated carbon market in Brazil represent a material risk for the coming years. Although our businesses are dedicated to reducing carbon emissions, implementing a pricing mechanism can entail additional costs, including taxes, fees, and compliance-related expenses. In addition, it may require an additional allocation of capital for the adoption of low-carbon technologies. These adjustments could also have an impact on product prices for consumers. Cosan, as a portfolio manager, is also subject to the impacts caused by carbon pricing, increasing operating leverage and bringing uncertainties about future cash flows related to the portfolio. | Cosan, is attentive to the global energy transition scenario. In partnership with our businesses, we have directed significant efforts and investments into initiatives that drive this transition. Innovative projects such as E2G and biomethane distribution are among the priorities, demonstrating our commitment to low-carbon solutions. In addition, we are focusing our efforts on reducing emissions from our businesses, participating in forums and events to capture expectations about the implementation of the carbon market in Brazil, and we are also carrying out studies to evaluate future scenarios and adopt mitigation actions, such as the internal carbon pricing. |
| | | High | Medium | MOOVE | | |
| | | High | Medium | COMPASS | | |

## TRANSITION RISKS

| Category | Risk | Risk Level | | Business | Impact on Business | Risk Management |
|---|---|---|---|---|---|---|
| | | 2030 | 2050 | | | Risk Adaptation/Mitigation Measures |
| Political and Legal | Mandates and Regulation of Existing Products and Services | Medium | High | MOOVE | Moove could face stricter regulations if the countries where it operates pursue more ambitious national climate targets (NDCs), and the development of sectoral plans for specific areas. Such advances can:<br>· Influence the prices of crude oil, natural gas and chemical products in the short term, putting downward pressure on the demand for fossil-based products and their prices;<br>· Demand higher production standards;<br>· Increase operating costs related to the purchase of fossil raw materials. | · Monitoring the regulatory environment in the markets where MOOVE operates and, during the due diligence process, in the markets of interest;<br>· Analysis of existing/emerging standards and legislation to establish the parameters on which the company will establish its operations and corporate governance. |
| | | Medium | High | COMPASS | GHG emissions could become more strictly regulated if Brazil pursues more ambitious national climate targets (NDCs), and the development of sectoral plans for specific areas. Such advances could affect crude oil and natural gas prices in the short term, impacting operating costs and the value of the business. | · Participation in forums and events on the expected implementation of this type of regulation, and anticipation of the movements of other companies in the sector;<br>· Carrying out studies to assess future scenarios and adopt mitigation actions, such as internal carbon pricing. |
| Technology | Cost of Transition to a low-carbon economy | Low | High | RUMO | The demand for low-carbon transport services, which are more energy efficient and/or use renewable energy, may require the adoption of new technologies, technical specifications and operating standards. This could have an impact on the company's operating costs and revenue generation. | · Investments in research and development to find solutions that meet the future expectations of customers (new raw materials, products and/or technologies), considering renewable energy sources in technological innovations for the transportation sector;<br>· Feasibility studies for adapting existing assets/ equipment and/or gradually replacing them. |
| | | High | Medium | COMPASS | The company's ability to develop innovative solutions to meet growing demands for alternatives with a lower carbon footprint represents an opportunity. However, failure to do so can result in risks, reducing market reach and affecting revenues. The rise of new low-carbon technologies to replace fossil energy sources could require significant investment in R&D and infrastructure adaptation, as well as affecting the demand for natural gas. | · Investment in research and development to find solutions that meet customers' future expectations (new raw materials, products and/or technologies).<br>· Investments to increase the share of renewable alternatives in our business revenue. For example, recent investments in biomethane. |

## TRANSITION RISKS

| Category | Risk | Risk Level | | Business | Impact on Business | Risk Management |
|---|---|---|---|---|---|---|
| | | 2030 | 2050 | | | Risk Adaptation/Mitigation Measures |
| Markets | Changing Customer Behavior | Medium | High | MOOVE | Potential changes in consumer behavior could result in a reduction in the purchase of oil-based products, just as the climate strategies of industries could result in the search for raw materials from other sources, reducing the market for the company's products and its projects. | • Evaluation of customer behavior in relation to technological advances and changes in the technical specifications of their products; and of<br>• Study of other markets/possibilities for product application. |
| | | Medium | High | COMPASS | The increased preference for renewable sources and the search for more efficient solutions could have an impact on the demand for natural gas:<br>• In the B2B sector, companies' decarbonization commitments can drive an increase in the share of renewable sources in the energy mix;<br>• In the B2C sector, price pass-through and the acceleration of electrification tends to drive the replacement of natural gas-powered equipment, impacting the demand. | Consider in the business model the needs of different audiences (clients and consumers) in the short, medium, and long term in order to find solutions (products/services) that meet their expectations. |
| | | Low | Undefined | Raízen | A significant part of Raízen's revenue comes from bioproducts, such as sugar, ethanol, and bioenergy; and from advanced products, such as second-generation (2G) ethanol, biomethane and biogas; which are sold to international markets that are increasingly strict with aspects of product sustainability, such as their emissions. This growing concern on international markets about the level of emissions associated with products could represent a risk for our portfolio if we don't follow this trend and take care of our emissions. In line with the risk of strong competition in our business, if we are unable to maintain the sustainability attributes (emissions management, traceability, and others) of our products, there will be a risk of loss of competitiveness in relation to competitors in these relevant markets. | • Raízen maintains a robust management of its emissions and maps out the best ways to reduce the carbon intensity of its products, with a public commitment to reduce ethanol's carbon footprint by 20% by 2030.<br>• Development of low-carbon products, such as E2G, which emits 30% less $CO_2$ than traditional ethanol.<br>• Continuous contact with the body responsible for assessing our products in relation to environmental criteria, in order to better understand their demands and transparency for the continuity of the relationship and maintain their certification strategy. |

## TRANSITION OPPORTUNITIES

| Category | Opportunity | Level | | Business | Impact on Business | Capturing the Opportunity |
|---|---|---|---|---|---|---|
| | | 2030 | 2050 | | | Risk Adaptation/Mitigation Measures |
| Markets | Generation of decarbonization credits (CBIOs) | Medium-High | Undefined | RAÍZEN | Raízen has an opportunity to stand out as a major generator of CBIOs from the federal government's Renovabio program, mentioned in the transition risks section.<br><br>Raízen is one of the country's leading ethanol producers and has a great opportunity to become one of the largest generators of CBIOs credits in the country. In Renovabio's first year, Raízen's CBIO generation potential was 2,398,000, resulting in an increase in the company's revenue of more than R$ 80 million. In addition, due to the company's robust emissions management and the certification of most of its plants by Renovabio, Raízen has already identified the best ways to reduce the carbon intensity of its ethanol and thus increase its generation of credits. | To capture the associated opportunity, Raízen maintains a robust management of its emissions and maps out the best ways to reduce the carbon intensity of production, in order to increase the generation of credits as bioenergy parks evolve in efficiency. |
| Products and Services | Increased demand for low-carbon goods and services | The realization of this opportunity is contingent upon the increase in demand for low-emission products and the speed of advancement in new technologies, such as electrification. | Undefined | RAÍZEN | Demand for biofuels has experienced a significant increase in recent times, and projections indicate that this trend will continue, driven by decarbonization targets around the world.<br><br>There is significant potential to expand our participation in demanding markets such as California and the European Union, which value low-carbon products even more. This is because our ethanol, produced from sugarcane, already has a reduced average carbon footprint (55g$CO_2$ / MJ) compared to ethanol produced from corn (79.9g$CO_2$ / MJ) - the main type of ethanol produced in the United States. We are also constantly reducing the carbon footprint of our products, which increases their added value. In addition, E2G has a 30% lower rate of greenhouse gas emissions compared to ethanol (E1G), further reinforcing the potential of this opportunity. | • Raízen maintains a robust management of its emissions and maps out the best ways to reduce the carbon intensity of its products, with a public commitment to reduce ethanol's carbon footprint by 20% by 2030.<br>• Development of low-carbon products, such as E2G, which emits 30% less $CO_2$ than traditional ethanol.<br>• Creation of a specialized team to monitor biofuel market variations and trends, as well as the attributes that can be better remunerated and valued in well-established global markets, with the aim of improving the company's performance through informed and sustainable decisions. |

## TRANSITION OPPORTUNITIES

| Category | Opportunity | Level | | Business | Impact on Business | Capturing the Opportunity |
|---|---|---|---|---|---|---|
| | | 2030 | 2050 | | | Risk Adaptation/Mitigation Measures |
| Products and Services | Increased demand for low-carbon goods and services | The realization of this opportunity is contingent upon the increase in demand for low-emission products and the speed of advancement in new technologies, such as electrification. | The realization of this opportunity is contingent upon the increase in demand for low-emission products and the speed of advancement in new technologies, such as electrification. | RAÍZEN e COMPASS | The advance of bioenergy technologies, such as biomethane and green hydrogen, and the incorporation of these sources into the portfolio of products marketed by Compass and Raízen could represent an opportunity to diversify the product portfolio and increase revenue generation.<br><br>According to the Brazilian Biogas and Biomethane Association, Brazil is the country with the greatest production potential on the planet. The use of biogas and biomethane has advantages in relation to GHG emissions and is being used in the decarbonization path of certain sectors, such as electricity generation and the transport sector.<br><br>In this way, there is an opportunity for Raízen and Compass to further expand the production and distribution of biogas in order to broaden their portfolio of renewable solutions in the country. In the case of Compass, this is possible due to the interchangeable nature of natural gas in relation to the other biofuels (biomethane, hydrogen and synthetic methane) in its distribution network. | Capturing this opportunity involves the:<br><br>• Definition and establishment of regulations that provide the necessary legal certainty for the connection between generation, distribution and marketing of bio-energy;<br><br>• Development of new business models and investment in research and development to implement the technologies associated with these models.<br><br>• Compass: The creation of Edge, which encompasses biomethane and LNG operations, the recent contracts signed with biomethane distribution companies and Gas Brasiliano's Sustainable Cities Project, which is the first distribution pipeline network exclusively for biomethane in Brazil, are examples of initiatives being developed to capture this opportunity. |
| | | The realization of this opportunity will depend on the consolidation of the increased demand for low-emission transport and the speed of progress in new technologies, such as electrification. | The realization of this opportunity will depend on the consolidation of the increased demand for low-emission transport and the speed of progress in new technologies, such as electrification. | RUMO | Rumo, with its extensive rail network, stands out as a more sustainable alternative to road transportation. In addition, the company has demonstrated a commitment to sustainability by investing in increased energy efficiency and studying alternatives such as the use of hybrid locomotives and alternative fuels. | To capture this opportunity, Rumo has an approach to managing the risks of transitioning to a low-carbon economy in line with the company's growth strategy and the development of new technologies to increase energy efficiency. The company is attentive to changes in the market and is continually studying the implementation of new technologies to reduce emissions in its operations. |

## TRANSITION OPPORTUNITIES

| Category | Opportunity | Level | | Business | Impact on Business | Capturing the Opportunity |
|---|---|---|---|---|---|---|
| | | 2030 | 2050 | | | Risk Adaptation/Mitigation Measures |
| Products and Services | Displacement of more polluting fossil fuels | High | In medium term, confirmation of the opportunity will be conditional on the advance of new technologies, such as electrification, green hydrogen, etc. | COMPASS | Due to its lower environmental impact compared to other fossil fuels, natural gas - commonly referred to as the "transition fuel" - has a key role to play in replacing fossil fuels.<br><br>Natural gas should remain a relevant energy source for the coming years. Natural gas also already plays an important role in balancing the intermittency of renewable energies, guaranteeing the security of the energy transition. | Capturing this opportunity in the short term can be leveraged by a favorable domestic context, which includes:<br>• The opening up of the natural gas market at state and national level (with the New Gas Law), increasing the company's participation in new markets, favoring the displacement of consumption of more carbon-intensive fuels;<br>• The emergence of new technologies in natural gas air conditioning and water heating systems, driven by changes in temperature patterns<br>• The sale of liquefied natural gas (LNG) to the transportation sector.<br><br>To make this opportunity viable, the company will have to size up these new markets and may look for new sources of natural gas supply to meet the projected demand. |

# Assessment of the Financial Impacts of Priority Risks

In the context of both risk and opportunity, the analysis of the financial impact is crucial for the resilience of the business and its integration into the company's strategic planning. **This analysis is fundamental for assessing the feasibility of implementing adaptation and mitigation actions, ensuring that the decisions made are aligned with the company's long-term financial objectives.**

From the point of view of physical climate risk, we are working internally to monetize the financial impact because of the interruption of our activities, potential damage to our infrastructure, or emergency actions that may be necessary because of the impact of extreme weather events. This analysis was made possible thanks to this in-depth study, which provided a more robust understanding of the impacts on various risk dimensions.

In order to assess the financial impacts related to the risks and opportunities of the transition to a low-carbon economy, we are internally structuring a flow to incorporate these variables into our financial planning and developing tools to enable us to strategically manage these variables and make better business decisions.

Integrating the risks and opportunities associated with climate change into our corporate risk management, as well as into our strategic and financial planning, will substantially strengthen our business strategy and our sustainability initiatives aimed at energy transition.


# Metrics and Targets

# Cosan's businesses recognized with the GHG Protocol Gold Seal.

A fundamental part of managing and monitoring the risks and opportunities related to climate change is the selection of metrics and the setting of targets associated with adaptation and mitigation actions. These metrics and targets are carefully chosen to address identified risks and capture opportunities, always in line with our portfolio's business strategies and risk management process.

From the point of view of ESG management, Cosan and its businesses set long-term ESG targets, which include socio-environmental performance indicators, among them targets to reduce specific greenhouse gas (GHG) emissions.

**Each Cosan's businesses conducts an annual GHG inventory. This not only ensures transparency but also facilitates effective management and helps us meet our established reduction targets.** The inventory results and achievement of targets are disclosed annually in each company's public reports. This underscores the organization's commitment to transparency and environmental responsibility.

Since 2019, we have prepared and kept up-to-date GHG emissions data for all businesses based on the guidelines of the GHG Protocol and its national version, the Brazilian GHG Protocol Program, for Scopes 1, 2 and 3. **In 2023, all Cosan's Businesess were recognized by the GHG with the Gold seal, awarded to companies that meet all the transparency criteria when publishing their emissions data and submit them to verification by an independent institution.**

Below are the main metrics and indicators we use to monitor the climate performance of Cosan.

## TOTAL GHG EMISSIONS BY BUSINESS

| Year | Companies | Scope 1 | Scope 2 | Scope 3 | Total |
|---|---|---|---|---|---|
| 2020 | Cosan[1] | 252 | 20 | 18 | **290** |
| | Raízen | 2,427,765 | 11,741 | 44,582,401 | **47,021,907** |
| | Rumo | 895,366 | 2,164 | 577,515 | **1,475,045** |
| | Compass | 12,219 | 232 | 8,440,833 | **8,453,284** |
| | Moove | 4,633 | 343 | 10,238 | **15,214** |
| 2021 | Cosan[1] | 166 | 38 | 21 | **225** |
| | Raízen | 2,409,015 | 16,763 | 49,282,717 | **51,708,495** |
| | Rumo | 881,421 | 7,504 | 863,791 | **1,752,716** |
| | Compass | 11,164 | 491 | 9,674,635 | **9,686,289** |
| | Moove | 4,539 | 677 | 32,98 | **38,196** |
| 2022 | Cosan[1] | 167 | 13 | 88 | **268** |
| | Raízen | 2,742,975 | 14,135 | 53,110,338 | **55,867,448** |
| | Rumo | 981,114 | 2,632 | 264,468 | **1,248,214** |
| | Compass | 9,398 | 223 | 12,578,248 | **12,587,869** |
| | Moove | 4,816 | - | 285,269 | **290,085** |
| 2023 | Cosan[1] | 256 | 13 | 23,848,591[2] | **23,848,860** |
| | Raízen[3] | - | - | - | **-** |
| | Rumo | 1,008,862 | 1,429 | 662,444 | **1,672,735** |
| | Compass | 9,474 | 172 | 10,760,722 | **10,770,368** |
| | Moove[4] | 5,674 | 296 | 58,815 | **64,785** |

1. Our Greenhouse Gas (GHG) inventory covers emissions from Cosan's corporate activities, which is limited to administrative operations. The inventory considers emissions according to mapped sources and data availability.
2. The significant increase in scope 3 emissions is due to the inclusion, in category 15, of **financed emissions (scopes 1, 2, and 3) related to Cosan's 4.9% stake in Vale, totaling 23,848,300 $tCO_2$**. Vale's 2023 data had not yet been published at the time of this report's publication. Therefore, for emissions calculation purposes, we are considering emissions from the year 2022. **Scope 3 emissions from Cosan's corporate activities amounted to 291 $tCO_2$.**
3. Raízen adopts the crop year as its publication period, consequently, the emissions for 2023 had not yet been audited and made publicly available on the date of publication of this Report.
4. Moove's data had not yet been audited at the time of publication of this report. The audited information will be available in Moove's report to be published later.

## COSAN CONSOLIDATED EMISSIONS - OPERATIONAL CONTROL APPROACH[1]

| Ano | Companies | Scope 1 | Scope 2 | Scope 3 | Total |
|---|---|---|---|---|---|
| 2023 | Cosan | 256 | 13 | 23,848,591[2] | **23,796,398** |
| | Raízen (50%)[3] | 1,371,488 | 7,067 | 26,555,169 | **27,933,724** |
| | Rumo | 1,008,862 | 1,429 | 662,444 | **1,672,735** |
| | Compass | 9,474 | 172 | 10,760,722 | **10,770,368** |
| | Moove[4] | 5,674 | 296 | 58,815 | **64,785** |
| | **TOTAL** | **2,395,754** | **8,978** | **61,885,741** | **64,290,472** |

1. Starting this year (2023), we will begin disclosing our consolidated emissions under the operational control approach, consolidating 100% of the emissions from Rumo, Compass, and Moove, and 50% of the emissions from Raízen (Joint-venture).
2. The significant increase in scope 3 emissions is due to the inclusion, in category 15, of **financed emissions (scopes 1, 2, and 3) related to Cosan's 4.9% stake in Vale, totaling 23,848,300 $tCO_2$**. Vale's 2023 data had not yet been published at the time of this report's publication. Therefore, for emissions calculation purposes, we are considering emissions from the year 2022. **Scope 3 emissions from Cosan's corporate activities amounted to 291 $tCO_2$.**
3. Raízen uses the crop year as its publication period. **Thus, for the purposes of calculating the consolidated emissions of the Cosan Portfolio, we are considering emissions from 2022.**
4. Moove's data had not yet been audited at the time of publication of this report. The audited information will be available in Moove's report to be published later.

## CONSOLIDATED EMISSIONS – EQUITY SHARE APPROACH[1]

| Year | Companies | Scope 1 | Scope 2 | Scope 3 | Total |
|---|---|---|---|---|---|
| 2023 | Cosan | 256 | 13 | 291 | **560** |
| | Raízen (44%)[2] | 1,206,909 | 6,219 | 23,368,549 | **24,581,677** |
| | Rumo (30.3%) | 305,685 | 433 | 200,72 | **506,839** |
| | Compass (88%) | 8,337 | 151 | 9,469,435 | **9,477,924** |
| | Moove (70%)[3] | 3,972 | 207 | 41,171 | **45,350** |
| | Vale (4.9%)[4] | 421,4 | 14,700 | 23,412,200 | **23,848,300** |
| | **TOTAL** | **1,946,559** | **21,724** | **56,492,366** | **58,460,650** |

1. Starting this year (2023), we will also begin disclosing our emissions according to our shareholding in each business, aligning with our strategy and positioning.
2. Raízen uses the crop year as its publication period. **Thus, for the purposes of calculating the consolidated emissions of the Cosan Portfolio, we are considering emissions from 2022.**
3. Moove's data had not yet been audited at the time of publication of this report. The audited information will be available in Moove's report to be published later.
4. Vale's emissions data for 2023 had not yet been published at the time of this report's publication. T**herefore, for the purpose of calculating the consolidated emissions of the Cosan Portfolio, we are considering Vale's emissions from 2022.**

## GHG EMISSIONS INTENSITY (GEE)


1. Based on the operational control approach, we consolidate 100% of the scope 1 and 2 emissions from Rumo, Compass, and Moove, and 50% of the emissions from Raízen (Joint-venture).
2. Calculation considering the Scope 1 and 2 emissions of our portfolio. Unaudited data from 2023 was used for Raízen and Moove.
3. Considering Rumo's Scope 1 emissions.
4. Considering Compass' Scope 1 and 2 emissions.
5. Considering Moove's Scope 1 and 2 emissions. Taking into account only the operations of the lubricant factory in Brazil.
6. Considering Raízen's Scope 1 and 2 emissions. The emissions data from Raízen had not yet been audited at the time of this report's publication. The audited information will be available in Raízen's report to be published later.

Reinforcing our commitment to mitigating climate change and acting as protagonists in the energy transition, we encourage our businesses to set climate targets as shown in the figure beside.

## COSAN'S BUSINESSES' CLIMATE COMMITMENTS AND TARGETS:

### raízen

**80%** increase in renewable energy production by 2030;

Reduction of ethanol's carbon footprint by **20%** by 2030 (base year 2018/2019);

Reduce the carbon intensity of product use by **10%** by 2030

Increase the share of renewable businesses in adjusted EBITDA to **80%**

### rumo

Reduce specific emissions by **15%** by 2023 (base year 2019)

**target achieved**

Reduce specific emissions by **21%** by 2030 (base year 2020)

### moove

Incorporate **15%** recycled plastic in packaging by 2025.

### COMPASS

Achieve **carbon neutrality** (Net Zero) in scopes 1 and 2 in the distribution business by 2030;

**Leading** the distribution of gas from renewable sources in Brazil;

**Boost** the use of gas in the national transportation matrix, replacing more polluting fuels.

**Project management**

Cosan – ESG and Risk teams

ERM Brazil

**Writing**

Cosan - ESG Team

ERM Brazil

For more information about Cosan, visit: **Cosan.com.br**

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