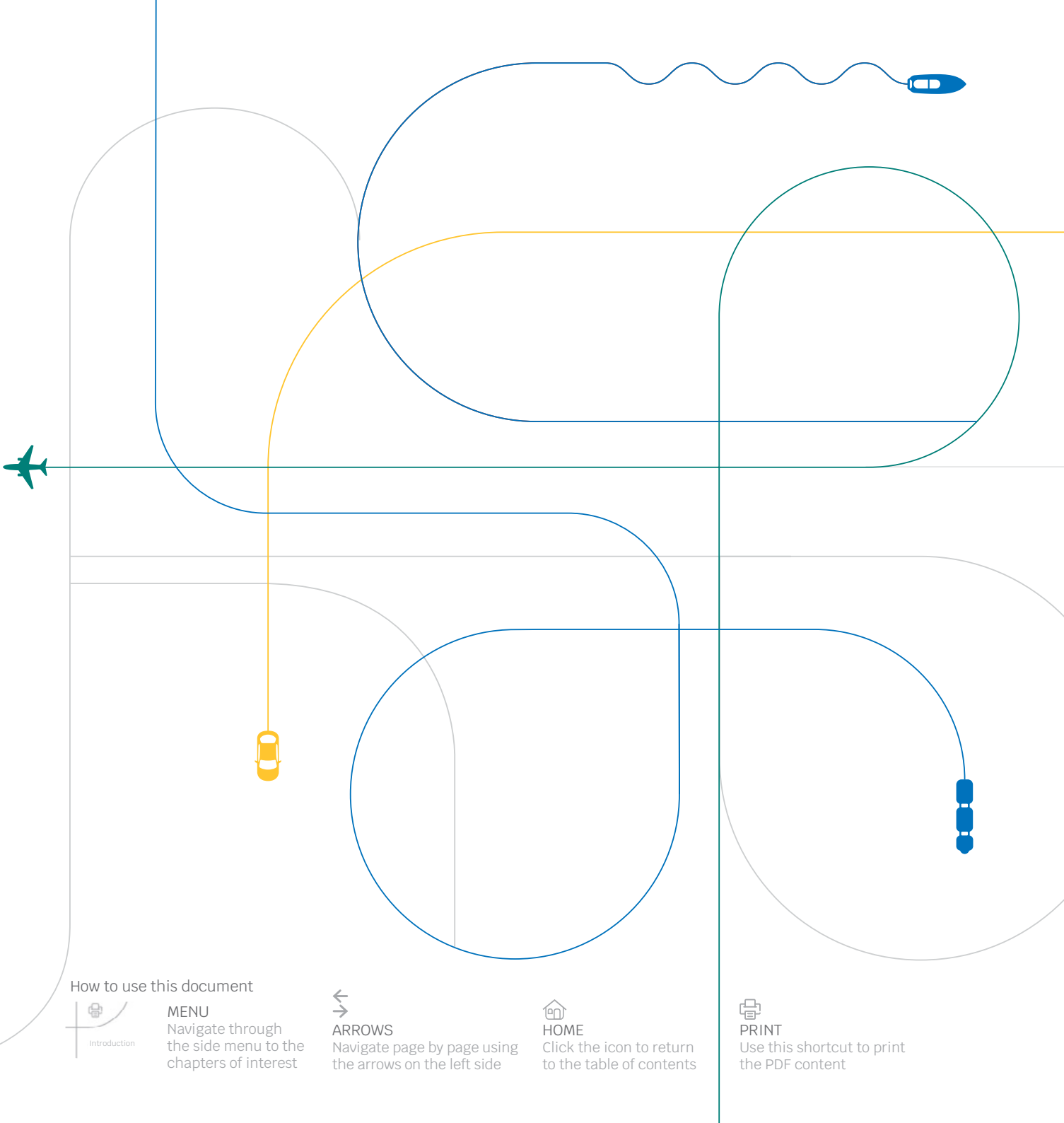
Communicative Greenhouse Gas Inventory Base year **2019**

CCR | 20 ANOS

Contents



How to use this document

MENU
Navigate through the side menu to the chapters of interest

ARROWS
Navigate page by page using the arrows on the left side

HOME
Click the icon to return to the table of contents

PRINT
Use this shortcut to print the PDF content

Introduction

Since 2012, following the guidelines of the Brazilian GHG Protocol Program, we have published our inventory of greenhouse gas (GHG) emissions. Information for 2019 and previous years is available to all those interested in the public record of emissions.

As part of our company's commitment to transparency and accountability for all stakeholders, we have also prepared this communicative version of the GHG inventory. The document complements other publications published annually in order to provide information on our results, advances and management models in order to align the business with global and multilateral initiatives in favor of sustainable development. This edition covers data for the base year 2019.

We also believe that this version helps to highlight the alignment of our actions and projects with the 2030 Agenda and the Sustainable Development Goals (SDGs), proposed by the United Nations in 2015. That year, the Paris Agreement signed by 195 countries during COP-21 set a global goal to prevent the planet's average temperature from increasing by more than 2ºC by the end of the century.

SDG 13 – "Take urgent action to combat climate change and its impacts" – specifically addresses a set of actions that can contribute to overcoming this unprecedented challenge for society (click here and learn more on the UN website).

Therefore, we understand that establishing a business adaptation strategy and mitigating risks associated with the context of climate change is a responsible attitude of our governance to ensure the generation of financial, environmental and social value for all our stakeholders, in a structured manner and in the long term.

To learn more

Access the other publications that are part of our Annual and Sustainability Report

To learn more

Learn more about the GHG emissions inventory in the public record of emissions

Climate change: global context

1. There is consensus in the scientific community that the planet is undergoing a process of global warming, known as climate change.

2. The Kyoto Protocol, signed in 1997, established the first international treaty for reducing greenhouse gas emissions and was in force between 2005 and 2012.

3. The Paris Agreement, drafted in 2015 and signed by 195 countries at COP-21 (UN Climate Change Conference), allowed each nation to submit its goals to jointly combat global warming, promote adaptation actions, and strengthen international cooperation. Brazil has defined the following objectives:

- 37% reduction in GHG emissions by 2025 (compared to 2005 levels).
- 43% reduction in GHG emissions by 2030 (compared to 2005 levels).

4. The Sustainable Development Goals (SDGs), defined by the UN in 2015, include a goal specifically aimed at combating climate change.

5. In Brazil, the National Policy on Climate Change, instituted in 2009, and the National Plan for Adaptation to Climate Change, of 2016, are the main regulatory frameworks at the federal level. Several states have established specific legislation, with emphasis on São Paulo, Rio de Janeiro, and Paraná.

6. In the capital market, investors seek opportunities that are in line with the challenge of achieving a low-carbon economy. References for this include the B3 Corporate Sustainability Index and the Carbon Efficient Index, as well as the CDP questionnaires and assessments.

7. To meet these demands from society and the capital market, companies are increasingly attentive to the topic of climate change. The first step is to map and understand its greenhouse gas emissions, with the preparation of the GHG inventory, in order to define mitigation and adaptation strategies.

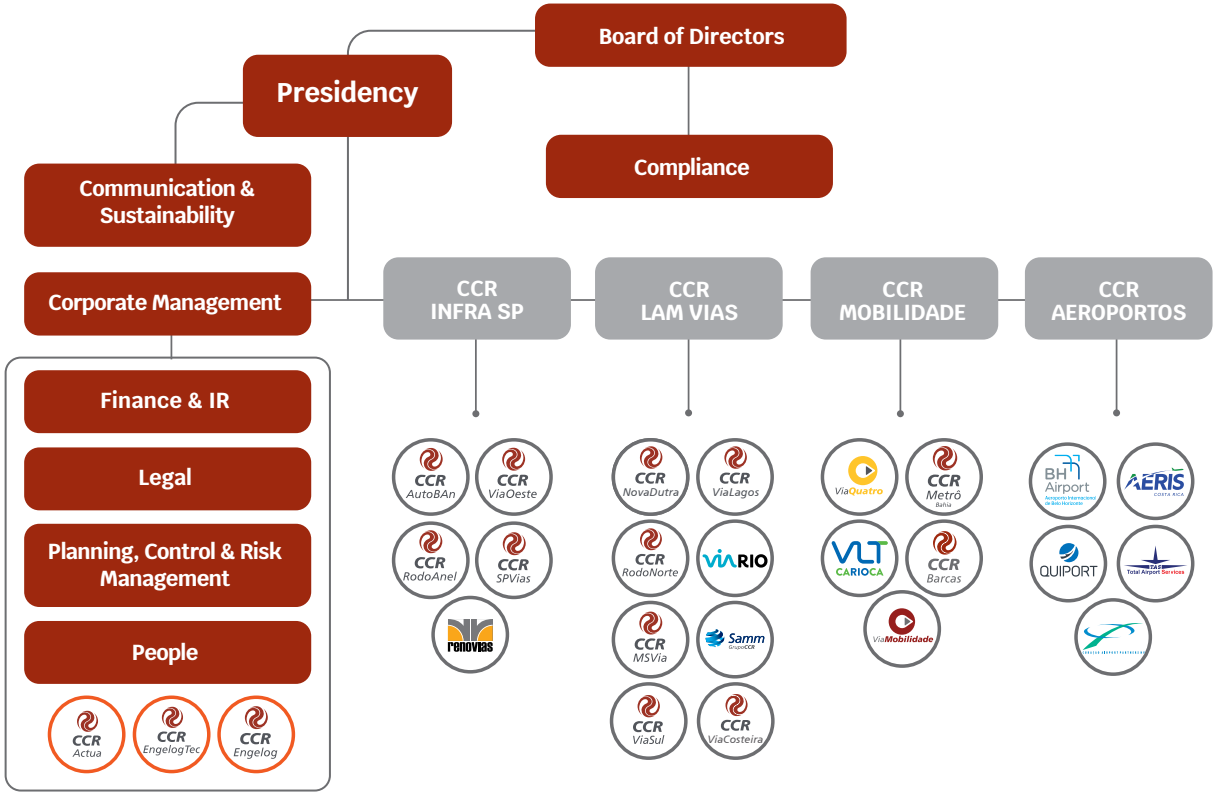
Our strategy

CCR Group is the largest company in the mobility infrastructure segment in Brazil. Our history, started 20 years ago, goes hand in hand with the development of the concession model in Brazil and continues to be written with the aim of offering the best experience to customers who use our highways, airports, and urban mobility assets.

Our units are managed in an integrated manner, through a corporate structure featuring four business divisions – CCR Aeroportos, CCR Mobilidade, CCR Infra SP, and CCR Lam Vias. The CCR Actua, CCR Engelog and CCR EngelogTec Shared Service and Competence Centers support the Group's companies with teams that specialize in people management, engineering, and technology.

Business vision

To be an infrastructure company focused on mobility that, with high-impact local and international projects, ensures that the customer experience is transformed into a better quality of life.



Our figures

2% reduction
in CCR Group's total GHG emissions

22.8 million passengers
boarding at airports

25.7% reduction
in waste generation

2 million passengers
used our urban mobility assets daily

R$ 9.5 billion
in net revenue*
**Excluding construction revenue*

2.2 million vehicles
per day on managed highways

12,200
employees

447.7 MWh
saved with eco-efficiency projects

Climate governance

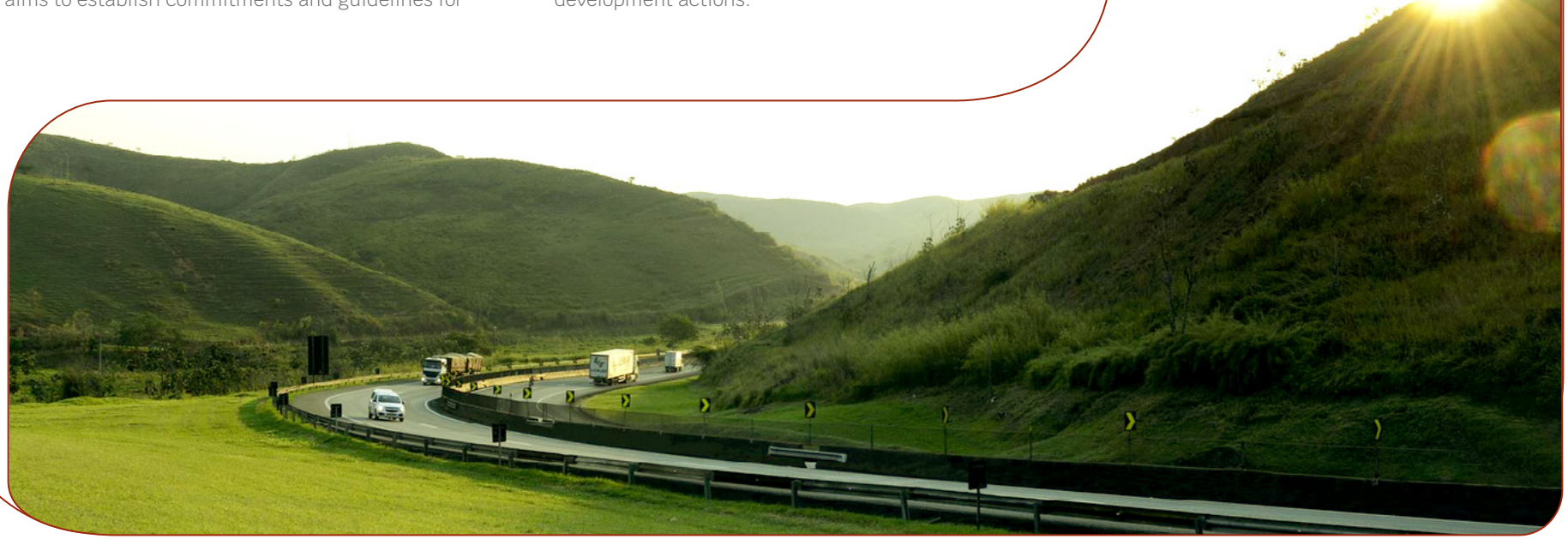
CCR Group's participation in the global effort to reduce the concentration of greenhouse gases (GHG) in the atmosphere is one of the ways to expand the benefits of investments and improvements in infrastructure. By promoting a more eco-efficient business model at concessionaires, including issues related to climate change in the decision-making process, we contribute to the socio-environmental balance in the cities where we operate, reducing impacts on the populations most vulnerable to climate change, and supporting the evolution to a low-carbon economic model.

To carry out an efficient management of this issue in our activities, we have implemented, since 2016, the **Corporate Policy on Climate Change**. The document aims to establish commitments and guidelines for the management of risks and impacts of climate change resulting from global warming, providing mechanisms for:

(i) control and reduction of GHG emissions

(ii) mitigation and adaptation of business to the effects of GHG concentration

In our corporate governance structure, the Board of Directors is responsible for evaluating and monitoring the implementation of this Policy in our business. In this effort, it is supported by the Risks and Reputation Committee, a body whose tasks include identifying trends and aligning business practices with multilateral sustainable development actions.



In the Executive Board, responsible for proposing and implementing the strategic business plan, topics related to climate change are addressed by the Communication and Sustainability Board. In its corporate performance model, the area assesses the development of action plans and is responsible for reporting progress and results to the Risks and Reputation Committee.

CCR Actua, from the Shared Services and Competence Centers, centralizes the management of socio-environmental indicators monitored by the business units – including GHG emissions from operations. The unit has its own team for the management of sustainability, covering the processes of internal engagement and communication with stakeholders.

At the units, we have employees working in the position of Advanced Sustainability Posts. These professionals are responsible for managing the subject while being closer to the reality of each concessionaire and for multiplying good corporate practices.

To learn more

On the evolution of our corporate governance and the corporate risk management model, access the **Annual and Sustainability Report.**

Commitment to our Corporate Policy on Climate Change

Include the issue in strategic and investment decision-making processes

Participate in voluntary initiatives, contributing to a low-carbon economy

Engage external stakeholders to extend the understanding of climate change

Manage risks associated with climate change by implementing adaptation strategies

Promote new services, products or business models that make it possible to reduce GHG emissions

Incorporate the analysis of GHG emissions into supplier selection and development

Set goals for direct or indirect reduction of emissions

Widely **disseminate** the Policy and publish the GHG emissions inventory on an annual basis

Define variable compensation criteria linked to improving performance improvement on the issue

Antecipate compliance with regulatory regimes still under discussion

To learn more

Access our **Corporate Policy on Climate Change.**

Risks and opportunities

Climate change and society's growing concern regarding possible impacts resulting from the increase in the concentration of GHG can have significant impacts on our business model. For this reason, the assessment of risks and opportunities related to this issue was strategically incorporated into our company, supported by our climate governance structure.

In 2019, our governance structure was improved with the creation of a specific area to support corporate risk management, dedicated to improving the model for identifying, prioritizing and evaluating the mechanisms for addressing the main risks to the business. This process also considers impacts and opportunities associated with climate change.

The investments, projects and initiatives carried out at the units aim to ensure the appropriate treatment to the risks identified and capture opportunities to ensure that our services can be more eco-efficient and to offer well-being to all customers.

This management model, as well as the possible risks and opportunities, is also detailed in the questionnaire on climate change that we answer annually and voluntarily to the Carbon Disclosure Program (CDP) – learn more on page 17.

Outstanding initiatives

Relevant projects and advances in the modes in which we operate have contributed to mitigating the impacts on GHG emissions resulting from our activities. Learn more about some of them in this section.

Clean energy and efficient consumption

In October 2019, ViaRio installed two photovoltaic plants in a toll plaza and a toll loop, which allowed the self-generation of enough renewable energy to meet 100% of consumption in these locations. The plants have a capacity of 300 kWp and 900 kWp, which account for the peak power for power generation, under ideal conditions. In the first three months of operation, these plants enabled savings of 60 MWh, which represents 4.4 tCO_2e avoided.

CCR ViaSul, which began in 2019 the management of Rodovia de Integração do Sul (Southern Integration Highway), is installing solar panels along the route, with energy generation from this source being estimated to start in 2020. It will consist of 6,900 plates across 10 different points on the highway, comprising micro- and mini-generation plants across a total area of 30,000 square meters.

A practice already established on the highways and which is being expanded year by year is the replacement of sodium-vapor lighting systems in toll plazas with LED technology, which is more efficient in terms of electricity consumption, thereby reducing indirect GHG emissions. Last year, CCR AutoBAn and CCR RodoAnel adopted this improvement, respectively, in 6 and 13 tolls on their highways. The exchanges allowed savings of 176 MWh in the year, equivalent to 13.1 tCO_2e avoided.

Carbon accreditation

BH Airport is a pioneer in Brazil in the search for carbon accreditation of its operations through the Airport Council International (ACI) program. The global initiative, established in 2009, sets an international standard for airports to evolve in adapting their facilities and activities to become more efficient in managing emissions and reducing their carbon footprint. In 2018, BH Airport was the first airport to obtain the Level 1 rating in the program, which demonstrates the correct mapping of GHG emissions. Last year, the unit once again led the domestic scenario by obtaining the Level 2 rating, in which it proved gains obtained with projects aimed at reducing emissions and the establishment of a Carbon Management Plan, with goals for the coming years. In both phases, the accreditation process included on-site audits.

Among the actions that led to the achievement of the Level 2 rating, two layout change projects have stood out. The first one, at the cargo terminal, adapted the sectorization of storage areas for export and import shipments, reducing the distance to be covered by forklifts. The reduction achieved amounted to approximately 30% in LPG consumption. The other involved bus routes for passengers to board aircraft in the courtyard, a process called remote boarding. In this case, the installation of a traffic circle reduced the path to be traveled by vehicles by 30%, generating savings in the consumption of diesel from buses and other fuels in other operational vehicles traveling across the yard.

Another relevant initiative was the revision of the lighting system of part of the yard, with the automation of the opening hours of the towers and the total or partial shutdown of some of them, which were operating unnecessarily. This review also involves changing the technology of these lamps, from halogen to LED, ensuring even more efficiency.

BH Airport's approach to reducing carbon emissions is also evident in the Terminal 2 project, which opened in 2016. This part of the airport has considered aspects of sustainability since its conception. The glass façade allows the use of natural light, the walls with thermoacoustic insulation reduce the demand for air conditioning in the internal areas, and more modern and efficient air conditioning and lighting systems reduce electricity consumption.

Sustainable cities

Our urban mobility operation offers cities a public transportation alternative with quality, comfort, and efficiency. The expansion of subways facilitates the movement of people in metropolitan areas, avoiding the use of personal vehicles, such as cars. This minimizes pollution in these areas, as it reduces congestion and decreases the consumption of fossil fuels, such as gasoline. In 2019, ViaMobilidade completed its first year of full operation, while ViaQuatro expanded the line extension with the opening, in late 2018, of the São Paulo – Morumbi station.

Corporate projects

The preparation of operations for the inevitable consequences of global warming is carried out by the teams of the Shared Services and Competence Center (SSCC) under the Climate Change Adaptation Plan (CCAP). Developed for road and urban mobility assets in recent years, the CCAP enables the mapping and prioritization of risks associated with weather events and future patterns, identifying the impacts arising from these risks and defining protection and mitigation measures. To do this, a broad study of operations based on academic research and projections from the National Institute for Space Research (INPE) and the Intergovernmental Panel on Climate Change (IPCC) was prepared by the teams. The projected scenarios and defined action plans consider the 2040 horizon and are being worked on by the units and corporate areas.

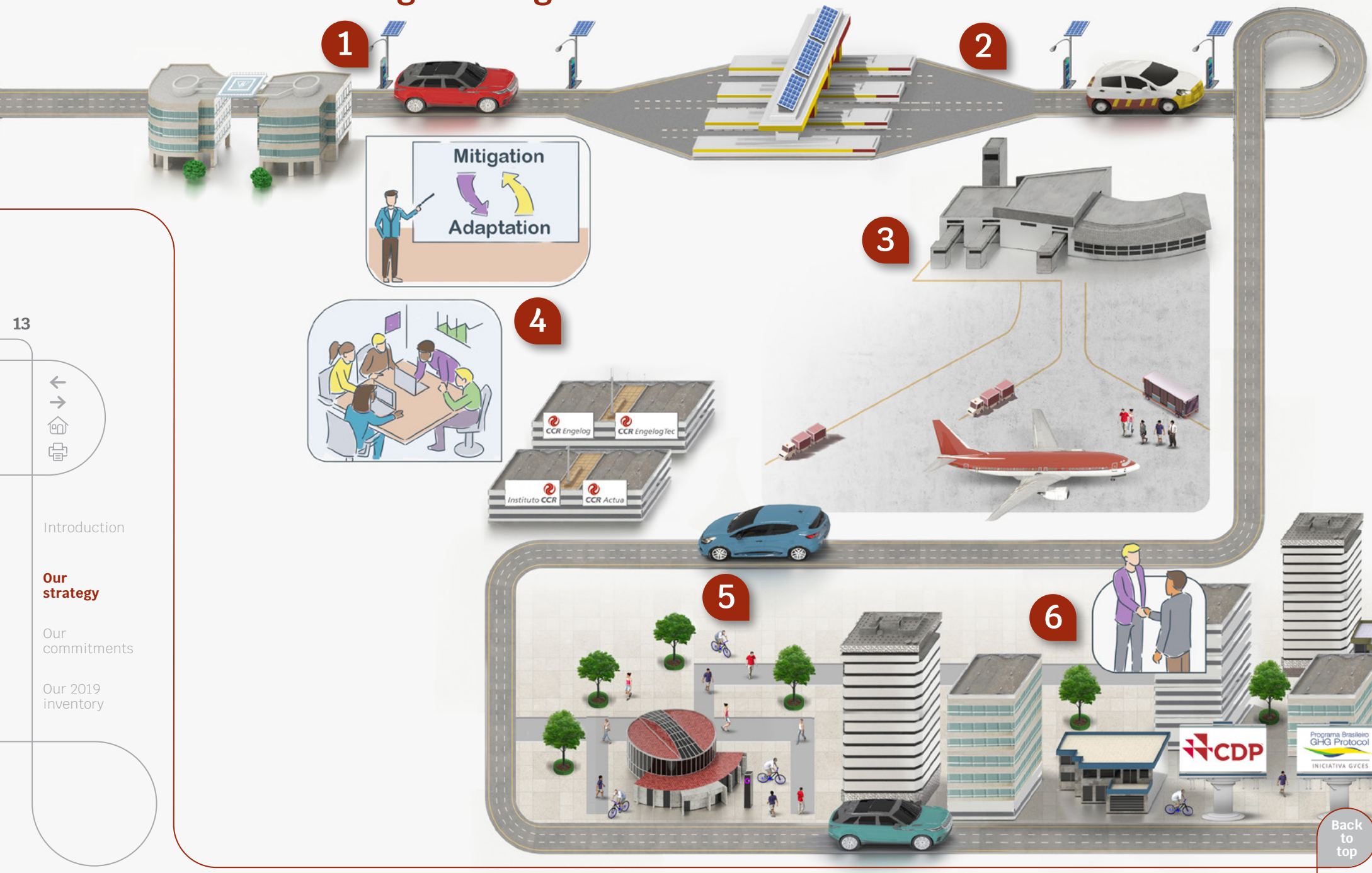
Another initiative is the evaluation of carbon pricing models. In line with global trends and the Corporate Policy on Climate Change, these efforts contribute to the identification of mechanisms that facilitate the incorporation of climatic criteria in making investment decisions. Additionally, they anticipate our preparation for possible regulatory changes in the country, which may establish taxation systems or emissions trading. Started in late 2017, this project has already involved the assessment of models adopted worldwide for carbon pricing and an understanding of the experiences of other companies with this type of initiative. The next step is to internally test a scenario of costs and revenues based on a hypothetical cost per metric ton of CO_2e.

Purchase of carbon credits

In 2020, we offset the annual growth in emissions from scopes 1 and 2. From the inventory of greenhouse gases, we identified the variation of these scopes in comparison with the base year 2018 and acquired carbon credits equivalent to this difference. In line with our Corporate Policy on Climate Change, this compensation contributes to our global warming mitigation efforts.

We acquired 2,429 tCO_2e in credits, originating from two projects based on the Clean Development Mechanism (CDM) methodology and within the scope of the Kyoto Protocol (UN): Renewable Energy at SHPP Cristalino (PR) and Renewable Energy at Santa Vitória do Palmar Wind Complex and Chuí (RS).

Our climate change management



Back to top

Our commitments

The search for continuous improvement and reduction of environmental impacts is constant in the units. We have set goals to reduce energy and fuel consumption and waste generation, which also have an impact on greenhouse gas emissions.

By decreasing electricity consumption, operations tend to perform better in scope 2, which measures the impact on emissions from the electricity purchased. Scope 2 accounting also depends on the Brazilian energy matrix, as in a year with less rainfall and more frequent use of thermal power plants, the same volume of energy has a larger carbon footprint. In 2019, the emission factor of the National Interconnected System (SIN) was 1.4% higher than in the previous year, and thus, in some cases, the absolute reduction in energy consumption did not directly reflect the same reduction in emissions.

Units with electricity targets	Target for 2019	Achieved in 2019
CCR AutoBAn	Reducing electricity consumption by 5% compared to 2018, conditioned to investments with viable NPV	↓ 7% reduction
CCR NovaDutra	Reducing electricity consumption by 1% compared to 2018	↓ 7% reduction
CCR MSVia	Reducing electricity consumption by 2% compared to 2018	↑ 1% increase
CCR RodoAnel	Ensuring that electricity consumption is less than or equal to that of the previous year, under normal conditions	↓ 5% reduction
CCR ViaOeste		↑ 3% increase
CCR SPVias		↓ 25% reduction
CCR Metrô Bahia		↑ 4% increase

The reduction in fuel consumption, in turn, has an impact on direct emissions from activities. The replacement of vehicles in the fleet with flex-fuel models, replacing gasoline with ethanol, and the decrease in the amount of fuels used in vehicles and equipment thanks to the optimization of displacement routes, lead to better performance in the mobile and stationary combustion emissions categories.

The adoption of good practices for waste management has positive effects on a portion of scope 3, which accounts for emissions in the company's value chain. In this group, the treatment of waste in landfills is a source of GHG emissions, and therefore, strategies that reduce the generation of waste or replace the destination of landfills with more noble treatment methods contribute to mitigating climate change.

A number of units have also formalized in their targets the search for the reduction of GHG emissions, reflecting the achievement of the goals in the areas of energy, fuels, and waste. One highlight is BH Airport, which has a specific target of reducing scopes 1 and 2 emissions per passenger by 1% per year (tCO_2e/PAX), according to the requirements of the Airport Council International (ACI) Accreditation Program. In 2019, the unit achieved a 5% reduction in this indicator.

Units with fuel targets	Target for 2019	Achieved in 2019
CCR RodoAnel	Ensuring that fuel consumption is less than or equal to that of the previous year, under normal conditions	↓ 13% reduction
CCR ViaOeste		↓ 7% reduction

Units with waste targets	Target for 2019	Achieved in 2019
BH Airport	Reducing the relative rate of metric tons of waste intended for landfills per passenger (kg/PAX) by 5% compared to 2018	↓ 9% reduction
CCR RodoAnel	Ensuring that waste generation is less than or equal to that of the previous year, under normal conditions	↑ 12% increase
CCR ViaOeste		↓ 35% reduction
CCR AutoBAn		↓ 55% reduction

Voluntary initiatives

Our institutional engagement with entities and programs focusing on the issue of climate change is crucial for the continuous improvement of management and governance. Through these participations, we share good practices with other companies, follow the latest trends and research in this field of knowledge and evaluate our performance compared to independent national and international benchmarks.

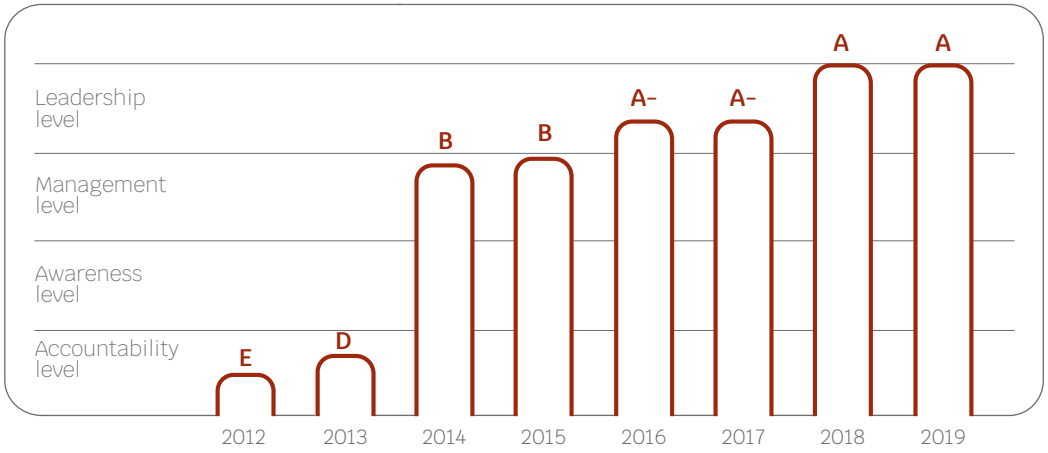
CDP

An organization based in the United Kingdom, CDP connects investors, companies and governments through the wide dissemination of information on governance, management and performance in environmental aspects. The entity makes annual questionnaires available in the areas of climate, water, and forests, which are filled in by network participants. Responses are evaluated and scored by the entity based on criteria such as data coverage and transparency, organizational understanding on the issue, governance structure and management mechanisms adopted. The sharing of responses with the international investor community and the visibility promoted for best practices contribute to improving the adoption of environmental criteria in making investment decisions.

Since 2010, we respond annually to CDP Climate Change, CDP's climate change questionnaire. In the last two years, we have achieved the maximum score, a performance that has allowed us to join the A List in 2018, which acknowledges organizations considered world leaders in transparency and management of the issue. One highlight is the company's evolution in this reporting decade, with the evolution from the accountability stage to the leadership level in four years.

We also engage our network of suppliers to evolve in governance and managing impacts on climate change. Since 2017, we have participated in the CDP Supply Chain, a program in which we invite our partners to answer the entity's questionnaire. The proposal is for us to be drivers in our chain in order to raise the strategic relevance of the topic and qualify the companies that interact with us to carry out their own inventories, develop risk and opportunity management models, and consolidate organizational structures dedicated to the issue. To this end, we periodically hold meetings with suppliers and disseminate information on the management of GHG emissions – actions that should be strengthened over the next few years.

CCR Group score in CDP Climate Change



In April 2020, CDP launched the CDP Climate Resilience Index in Brazil. This initiative aims to encourage the reporting of environmental information by highlighting the positive relationship between the level of transparency of this information and the financial performance of companies. The index considers only companies with the highest liquidity and which have achieved a minimum score of C in the CDP questionnaire. Among the 35 organizations that composed the 2019 theoretical portfolio, CCR was the most representative.

To learn more

Click here and access the CDP website

Brazilian GHG Protocol Program

The main platform for the development and dissemination of GHG inventories in Brazil, the Brazilian GHG Protocol Program was created in 2008, following a process of adaptation of the GHG Protocol method to the domestic context. The first cycle of inventories prepared and made available in the Public Record of Emissions occurred in 2010. Since then, the program website, which discloses the results of the participating companies, has accumulated over 2,400 inventories, with over 1,600 professionals in the country trained in the GHG Protocol method.

We have prepared our inventory according to the Program's parameters since 2012. In turn, in the second year of reporting, we achieved external data verification, which increases the reliability of data and collection procedures. Since 2015, our inventory has been segregated by unit, ensuring greater transparency in the performance of each operation and allowing the assessment of the advances in the last five years both in the Group's consolidated view and in the details of each asset.

Since 2015, CCR RodoNorte has been acknowledged by an initiative of the State Government of Paraná for the quality of its inventory with Selo Clima Paraná Ouro (Gold Paraná Climate Seal). The award is a testament to the disclosure of the audited inventory, valuing the company's commitment to accounting for its emissions to support the definition of strategies and programs that seek to reduce the climate impact.

To learn more

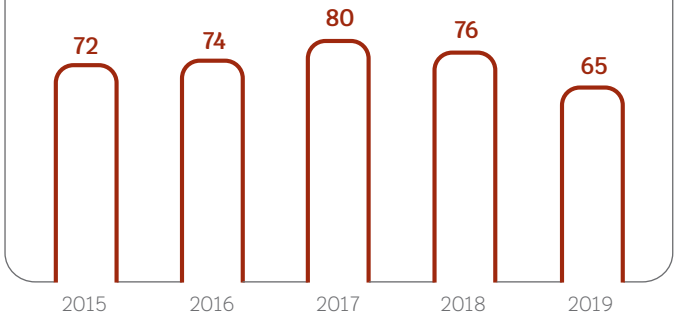
Click here and access the Brazilian GHG Protocol Program website

Capital market

Companies with good environmental, social and governance practices (a tripod known by the acronym ESG) offer attractive financial returns for their investors. This logic is evidenced worldwide by stock exchange indexes featuring publicly traded companies committed to sustainability. In Brazil, the Corporate Sustainability Index (ISE) and the Carbon Efficient Index (ICO2) are the main benchmarks of this type and have historically performed better than IBOVESPA, an indicator of the average performance of the shares listed at B3 (Brasil, Bolsa e Balcão). CCR Group has continuously integrated these two indexes since 2012.

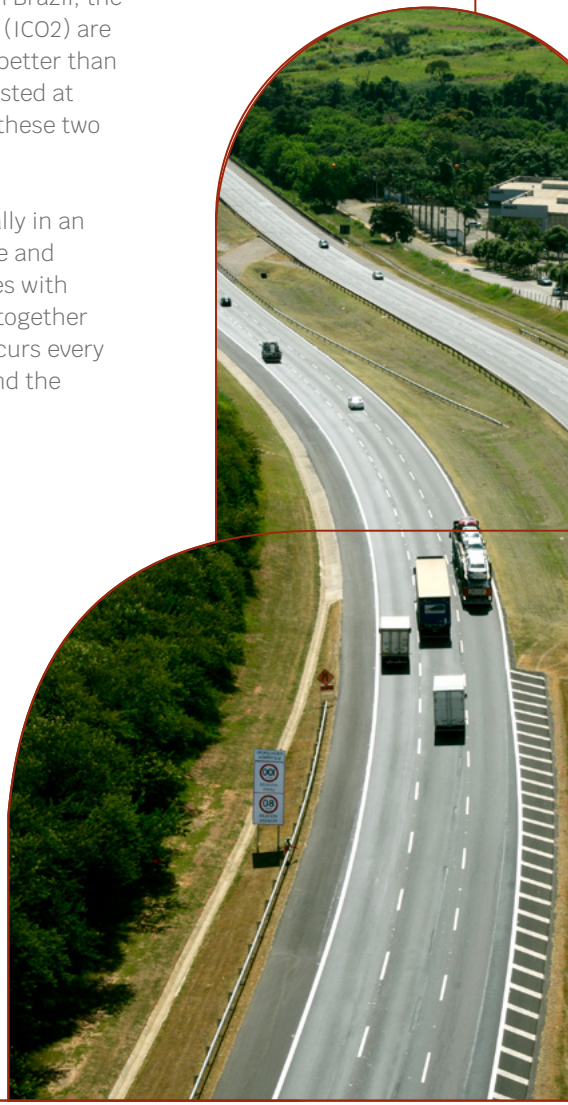
The portfolio of companies participating in the ISE is formed annually in an evaluation process that includes answering the index questionnaire and presenting evidence to prove the reported practices. The companies with the best scores are chosen to compose the portfolio, which brings together about 30 participants each year. The selection for ICO2, in turn, occurs every four months and involves criteria for efficiency in GHG emissions and the percentage of shares of companies traded on the stock exchange.

CCR Group score on the ISE climate dimension



To learn more

Click here and access the ISE website



Our 2019 inventory

To prepare the GHG emissions inventory, CCR Group adopts the principles, concepts and guidelines of the GHG Protocol program, established in 1998 and the most widely used model internationally for accounting for emissions. Based on these assumptions, the company ensures a strategic vision of the most significant emitting sources in its business model and provides a reliable, transparent and consistent basis for internal decision-making and strategic audiences.

The gases that cause the greenhouse effect naturally exist in the global atmosphere, and the increase in its concentration due to anthropic actions is the main cause of climate change. Each of them has a different heat retention capacity, which can be compared to the warming caused by carbon dioxide (CO_2).

Thus, emissions are accounted for according to the Global Warming Potential (GWP) – reference values presented in the reports of the Intergovernmental Panel on Climate Change (IPCC) – and presented in its standardized unit of measurement: carbon dioxide equivalent (CO_2e).

To learn more

The Global Warming Potential (GWP) allows the accounting of emissions in a standardized unit of measurement: carbon dioxide equivalent (CO_2e).

Methane (CH_4), for example, has a potential 25 times greater than carbon dioxide (CO_2). Nitrous oxide (N_2O) has a heating capacity 298 times greater.

GEE	CO_2e
CO_2	1
CH_4	25
HFC-125	3,500
HFC-134a	1,430
HFC-32	675
N_2O	298
SF_6	22,800
HCFC-22	1,810
HCFC-141b	725

Reference: IPCC (2007)

Gases that have the potential to promote global warming, defined on scientific grounds, are recognized in two international protocols established in multilateral conventions of the United Nations: The Kyoto Protocol and the Montreal Protocol. CCR Group, therefore, considers all types of GHG listed in these treaties for the preparation of its inventory.

The preparation of the inventory covers all business units in which CCR Group has control over the operation. In line with this criterion, the inventory covers 19 of the 25 business units owned by CCR Group as of 2019, considering highway concessions, airports, urban mobility assets, service companies, corporate offices, and the CCR Institute.

The accounting for emissions considers the period between January 1 and December 31, 2019 and the three scope levels established by the GHG Protocol – scope 1 (direct emissions), scope 2 (emissions from energy acquired from third parties), and scope 3 (other types of indirect emissions related to operating activities). Although the inclusion of scope 3 in the inventory is optional, CCR Group makes this determination, as it considers that these sources are relevant for a better understanding of risks and impacts and the identification of opportunities for improvement

Concessions in Brazil covered by the inventory

Highways

- CCR AutoBAn
- CCR MSVia
- CCR NovaDutra
- CCR RodoAnel
- CCR RodoNorte
- CCR SPVias
- CCR ViaLagos
- CCR ViaOeste
- CCR ViaSul
- ViaRio

Urban Mobility

- CCR Barcas
- CCR Metrô Bahia
- ViaMobilidade
- ViaQuatro

Service Companies

- CCR Actua
- CCR Engelog
- CCR EngelogTec
- SAMM

Airports

- BH Airport

CCR Institute + 3 corporate offices

GASES INCLUDED

CCR Group's emissions inventory considers all types of GHG established by the Montreal and Kyoto Protocols, which came into force in 1989 and 2005, respectively.

KYOTO PROTOCOL

CO_2, CH_4, N_2O, HFC-32, HFC-125, HFC-134, HFC-134a, HFC-143a, HFC-152a and HFC-227ea

MONTREAL PROTOCOL

HCFC-22, HCFC-141b and HCFC-124

Emitting sources in CCR Group's inventory

SCOPE 1

These are the emissions directly generated by the company's operations

- Fuel consumption in vessels, fleet vehicles, generators, and compressors
- Consumption of liquefied petroleum gas (LPG) in cafeterias
- Fugitive emissions in cooling and air conditioning equipment
- Fugitive emissions from refilling and acquiring fire extinguishers
- Consumption of fertilizer and compost
- Cutting and welding processes
- Effluent treatment
- Forest suppression

SCOPE 2

Emissions resulting from the consumption of electricity acquired from third parties

- Electricity supplied by local distributors, used in the operation of facilities and equipment

SCOPE 3

These are the indirect emissions generated by the CCR Group value chain

- Production of materials such as cement, steel, plaster, and asphalt
- Imports of parts and materials
- Transportation of solid waste
- Treatment of waste and effluents managed by third parties
- Fuel consumption by outsourced companies
- Aircraft fuel consumption on landing and take-off and while cruising
- Emissions from the production chain of fuel consumed by the CCR Group
- Outsourced transportation of employees
- Electricity acquired and passed on to third parties

CCR Group

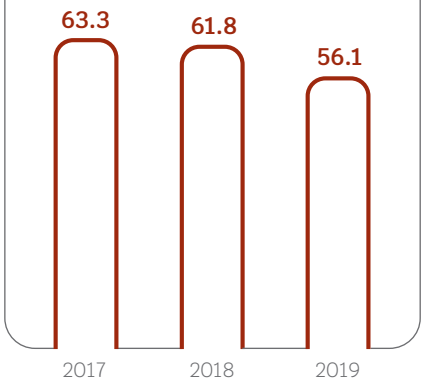
In 2019, the Group's total GHG emissions totaled 768,000 metric tons of CO_2 equivalent (tCO_2e), which represents a reduction of 2% compared to 2018 and 12% compared to 2017. Impacted by operations in the airport segment, scope 3 (indirect emissions) has the largest share in the inventory, responsible for 89.3% of the total GHG emitted in the period. It is followed by scope 1, responsible for 7.3% of emissions, and scope 2, accounting for 3.4%.

Since 2017, the amount of GHG emitted in scopes 1 and 3 has been reduced, even with the increase in the number of units covered by the inventory and the inclusion of new emission sources. In scope 2, relating to the acquisition of electricity from the grid, the increase each year reflects CCR Group's significant growth in the urban mobility segment, with the conquest of new businesses.

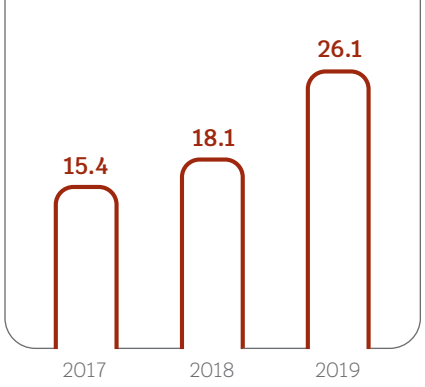
MAIN VARIATIONS

- ↓ **2% in total emissions**, driven by the reduction of direct emissions (scope 1)
- ↓ **9% in scope 1**, due to the decrease in emissions related to changes in land use
- ↑ **45% in scope 2**, due to the entry into operation of new urban mobility assets
- ↓ **3% in scope 3**, reflecting the reduction in indirect emissions at BH Airport

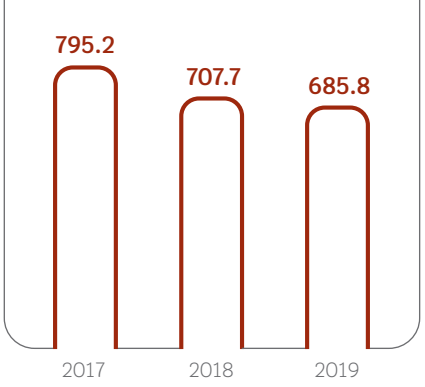
Evolution of CCR Group's scope 1 emissions (thousand tCO_2e)



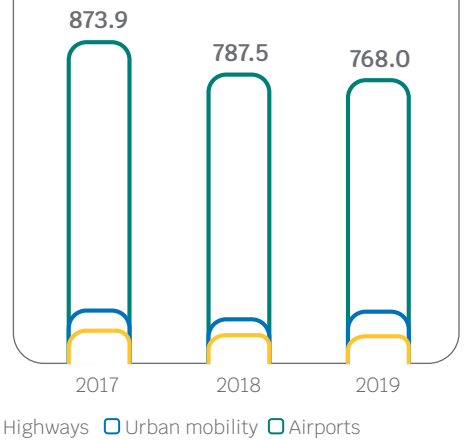
Evolution of CCR Group's scope 2 emissions (thousand tCO_2e)



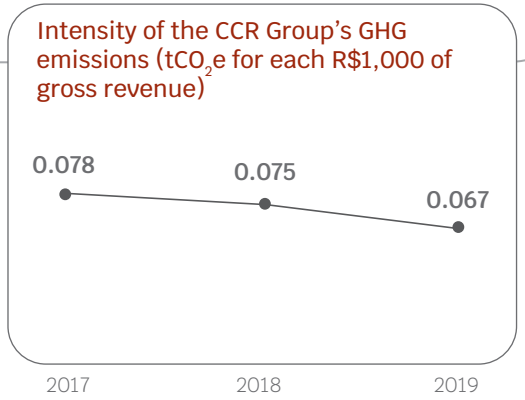
Evolution of CCR Group's scope 3 emissions (thousand tCO_2e)

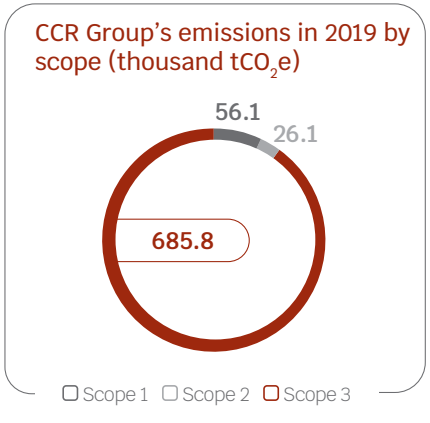


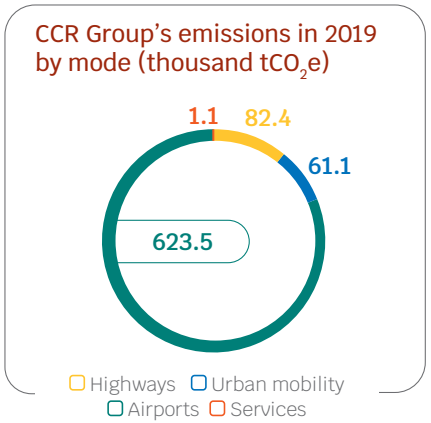
Evolution of CCR Group's total emissions (thousand tCO_2e)*



*Service operations emitted 1,000 tCO_2e each year (0.1% of the total). Highways account for approximately 11% of the total amount annually, while urban mobility assets and BH Airport represent 8% and 81% of the total, respectively.







CCR Group's emissions by emitting source (tCO_2e)	2019	2018	2017
Scope 1			
Mobile combustion	47,077	43,049	46,692
Changes in land use	5,766	14,765	10,861
Fugitive emissions	1,796	2,315	3,654
Effluents	778	960	890
Stationary combustion	720	674	1,155
Agricultural emissions	2	8	0
Scope 2			
Electricity acquisition	26,135	18,074	15,399
Scope 3			
Other scope 3 emissions (not classifiable in categories 1 to 15)	618,081	647,917	715,971
Goods and services purchased	38,258	31,548	52,306
Activities related to fuel and energy not included in scopes 1 and 2	20,276	19,069	16,935
Waste generated in operations	5,072	4,597	5,846
Displacement of employees (home-work)	1,549	1,500	1,564
Business trips	1,235	1,768	1,393
Transportation and distribution (upstream)	903	840	713
Leased assets (the company as a lessee)	393	430	499

Highways

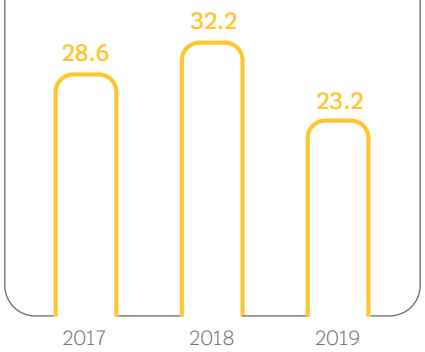
Inventory impacts

Highway concessions account for 11% of CCR Group's total emissions, second only to BH Airport's operations. In this mode, the scope of the inventory has been increasing in recent years, with the inclusion of ViaRio in 2018 and CCR ViaSul in 2019. Even so, the volume of emissions has decreased with each cycle, reflecting the optimization initiatives, mainly in the fleet. In the last period, highways emitted 82,400 tCO_2e (2% reduction in the annual comparison). In addition to fuel consumption, an important factor for road emissions is the emissions from land use changes. They are caused by fires around the roads and by works that cause suppression of vegetation, which were less intense in the last year.

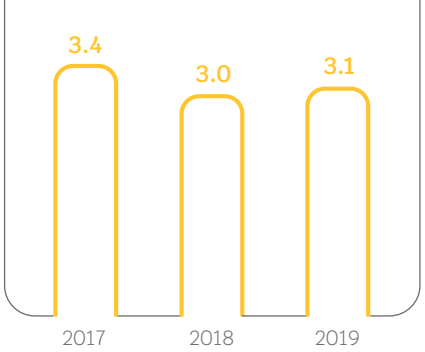
MAIN VARIATIONS

- ↓ **28% in scope 1**, due to the decrease in works that require suppression of vegetation
- ↑ **2% in scope 2**, with the inclusion of CCR ViaSul
- ↑ **16% in scope 3**, due to the increase in the purchase of inputs, mainly for the implementation of CCR ViaSul
- ↓ **7% in the intensity of emissions**, due to the combined effect of the increase in the number of vehicles with the reduction in total emissions

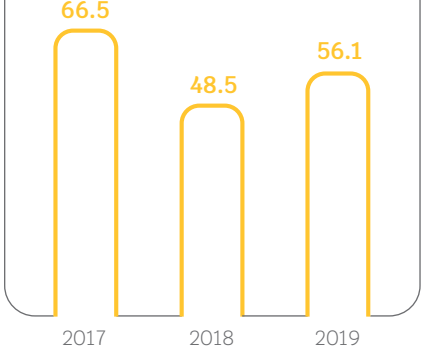
Evolution of highways scope 1 emissions (thousand tCO_2e)

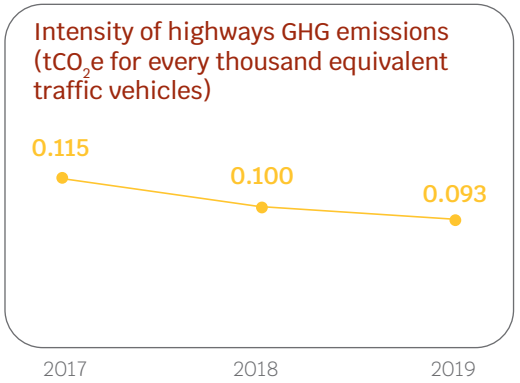


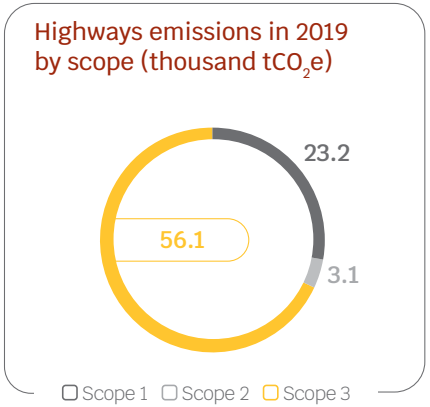
Evolution of highways scope 2 emissions (thousand tCO_2e)

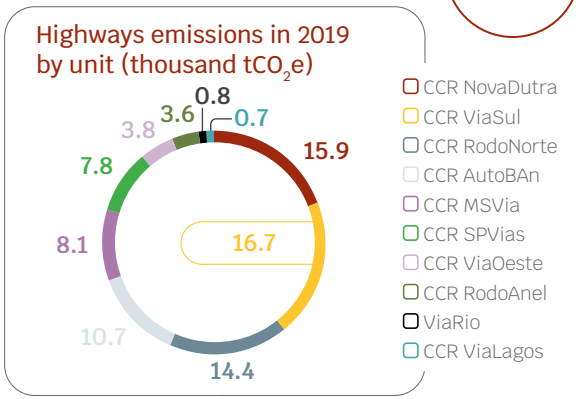


Evolution of highways scope 3 emissions (thousand tCO_2e)









Highways emissions by emitting source (tCO_2e)	2019	2018	2017
Scope 1			
Mobile combustion	16,224	16,105	17,594
Changes in land use	5,766	14,765	8,802
Stationary combustion	494	548	609
Fugitive emissions	420	561	1,379
Effluents	263	257	243
Agricultural emissions	2	7	0
Scope 2			
Electricity acquisition	3,089	3,028	3,393
Scope 3			
Goods and services purchased	36,943	30,410	50,289
Activities related to fuel and energy not included in scopes 1 and 2	14,088	13,657	11,215
Waste generated in operations	3,044	2,384	2,979
Displacement of employees (home-work)	1,549	1,500	1,564
Transportation and distribution (upstream)	353	387	362
Business trips	147	118	104

Urban mobility

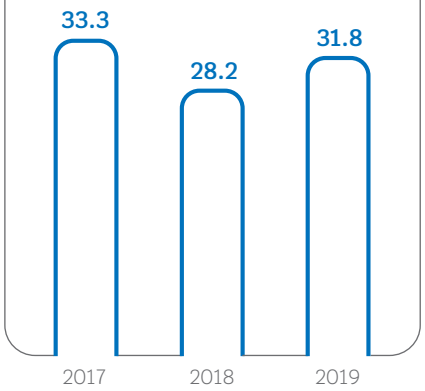
Inventory impacts

Composed of the subway units – CCR Metrô Bahia, Via Quatro and ViaMobilidade – and CCR Barcas, this modal has been expanding its representativeness over CCR Group's total emissions due to the expansion of operations in recent years. In 2019, urban mobility assets totaled 61,100 tCO_2e and accounted for 8% of the Group's emissions. The main sources of emissions are related to electricity consumption, which allows the movement of trains and supplies power to stations, as well as fuels, mainly at CCR Barcas.

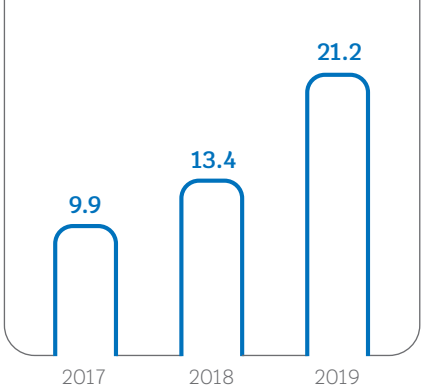
MAIN VARIATIONS

- ↑ **12% in scope 1**, due to the increase in marine diesel consumption resulting from the entry into operation of a new vessel at CCR Barcas
- ↑ **58% in scope 2**, due to the expansion of the subway network, mainly the entry into operation of ViaMobilidade in August 2018
- ↑ **11%in scope 3**, reflecting the impacts on the value chain, with the greater demand for marine diesel and inputs

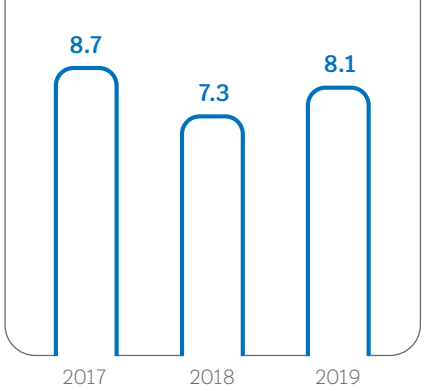
Evolution of urban mobility scope 1 emissions (thousand tCO_2e)



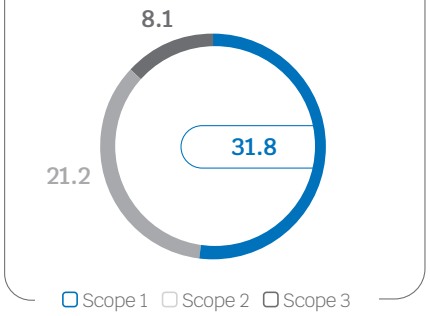
Evolution of urban mobility scope 2 emissions (thousand tCO_2e)

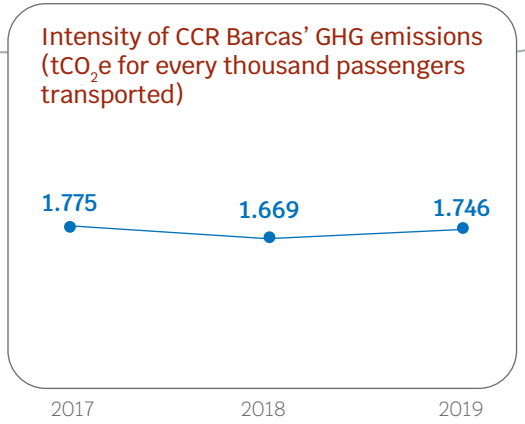


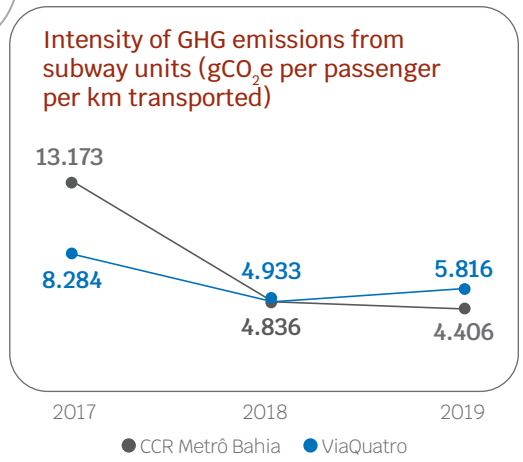
Evolution of urban mobility scope 3 emissions (thousand tCO_2e)

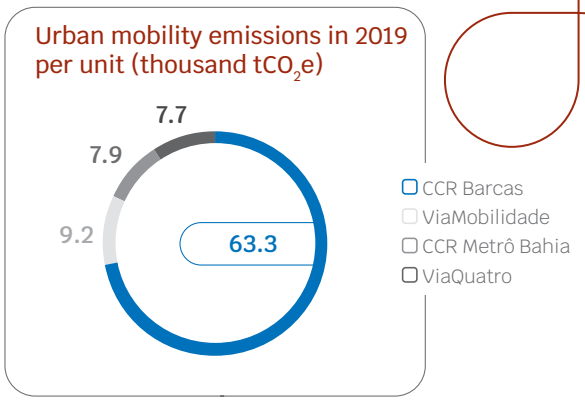


Urban mobility emissions in 2019 by scope (thousand tCO_2e)









Urban mobility emissions by emitting source (tCO_2e)	2019	2018	2017
Scope 1			
Mobile combustion	30,436	26,541	28,678
Fugitive emissions	1,158	1,590	2,054
Stationary combustion	131	108	529
Effluents	43	0	0
Agricultural emissions	0	1	0
Changes in land use	0	0	2,059
Scope 2			
Electricity acquisition	21,206	13,399	9,931
Scope 3			
Activities related to fuel and energy not included in scopes 1 and 2	5,993	5,229	5,534
Waste generated in operations	1,145	1,294	1,426
Transportation and distribution (upstream)	534	328	330
Goods and services purchased	275	65	1,067
Business trips	116	339	355
Leased assets (the company as a lessee)	21	33	0
Displacement of employees (home-work)	0	1	1

Airports

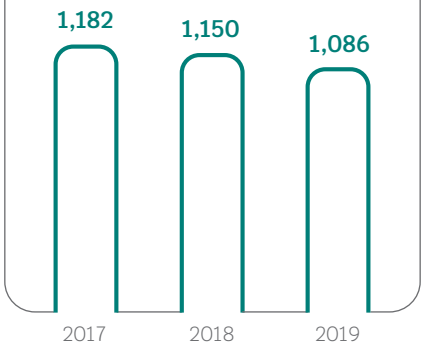
Inventory impacts

Represented by BH Airport, the only airport operation in Brazil, this mode was responsible for 81% of CCR Group's emissions in 2019, with 623,500 tCO_2e emitted. Of this total, 99% are related to fuel consumption on landing and take-off and while cruising through the airport. Disregarding this emission source, BH Airport's direct and indirect impacts totaled 5,400 tCO_2e last year, mainly due to the acquisition of electricity and the local treatment of effluents.

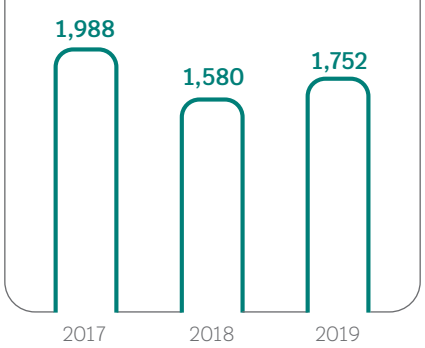
MAIN VARIATIONS

- ↓ **6% in scope 1**, due to efficiency gains in the treatment of effluents
- ↑ **11% in scope 2**, due to the increase in electricity consumption
- ↓ **5% in scope 3**, due to the reduction in the number of landings and take-offs
- ↓ **9% in the intensity of emissions**, due to the combined effect of the increase in the number of passengers with the reduction in total emissions

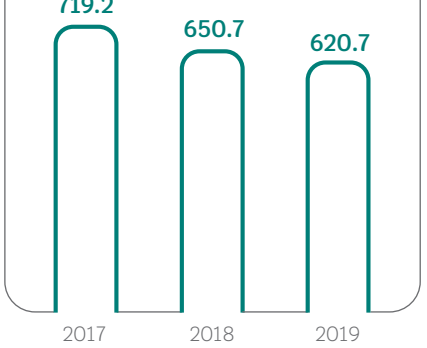
Evolution of BH Airport's scope 1 emissions (tCO_2e)



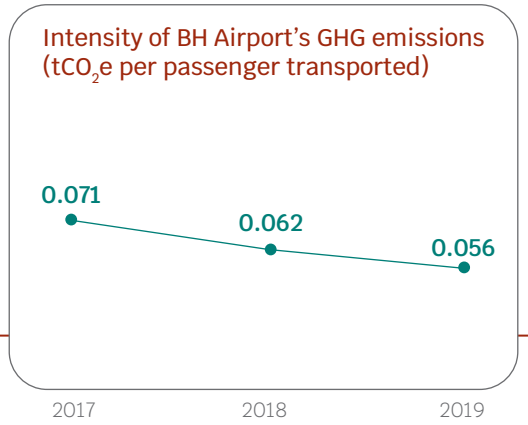
Evolution of BH Airport's scope 2 emissions (tCO_2e)



Evolution of BH Airport scope 3 emissions (thousand tCO_2e)



A pioneer in Brazil, BH Airport obtained Level 2 carbon accreditation from Airport Council International last year



BH Airport's emissions by emitting source (tCO_2e)	2019	2018	2017
Scope 1			
Effluents	472	703	647
Mobile combustion	303	277	309
Fugitive emissions	218	164	221
Stationary combustion	93	7	5
Agricultural emissions	0	0	0
Scope 2			
Electricity acquisition	1,752	1,580	1,988
Scope 3			
Other scope 3 emissions (not classifiable in categories 1 to 15)	618,081	647,917	715,971
Goods and services purchased	1,040	1,073	951
Waste generated in operations	874	909	1,431
Leased assets (the company as a lessee)	372	398	499
Business trips	159	232	222
Activities related to fuel and energy not included in scopes 1 and 2	107	75	78
Transportation and distribution (upstream)	17	126	21

Services

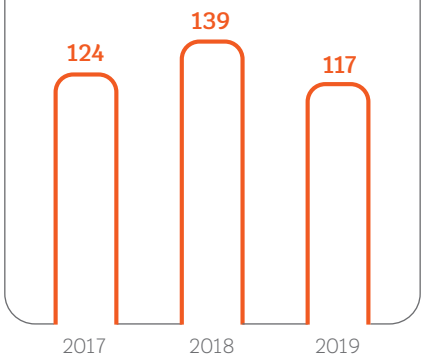
Inventory impacts

Composed of corporate offices, this group of units has little representation in CCR Group's total emissions (0.1% in 2019). Emissions from these activities are mainly related to business trips, the displacement of employees to operational units, and business prospecting. In 2019, they totaled 1,114 tCO_2e, a 21% reduction compared to the previous year.

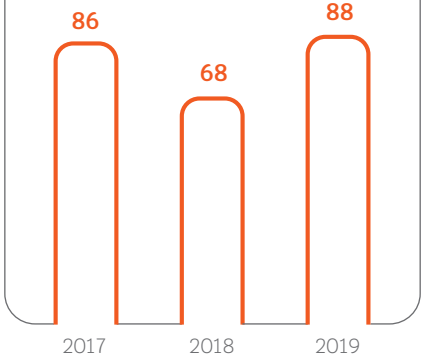
MAIN VARIATIONS

- ↓ **16% in scope 1**, due to the reduction in fuel consumption
- ↑ **30% in scope 2**, due to the increase in electricity consumption
- ↓ **24% in scope 3**, due to the reduction in business trips
- ↓ **18% in the intensity of emissions**, as the staff remained relatively stable

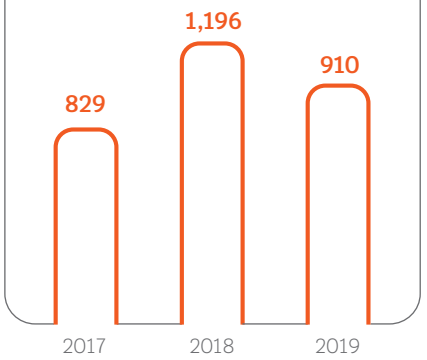
Evolution of scope 1 emissions from services (tCO_2e)

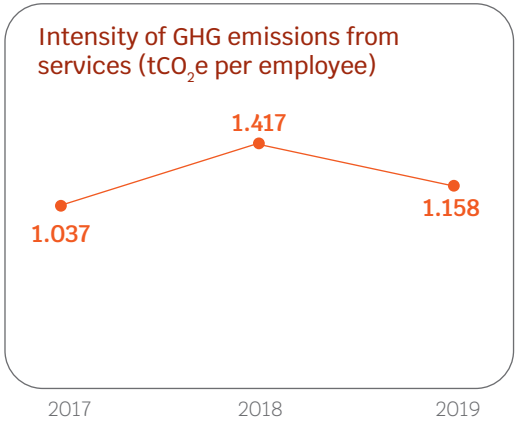


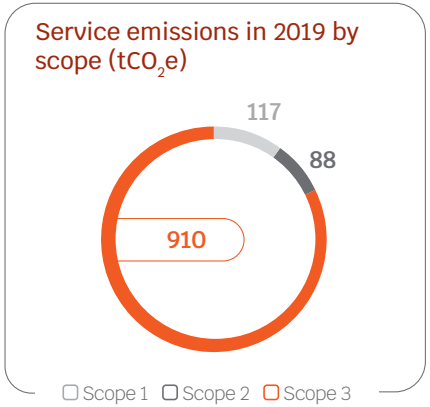
Evolution of scope 2 emissions from services (tCO_2e)

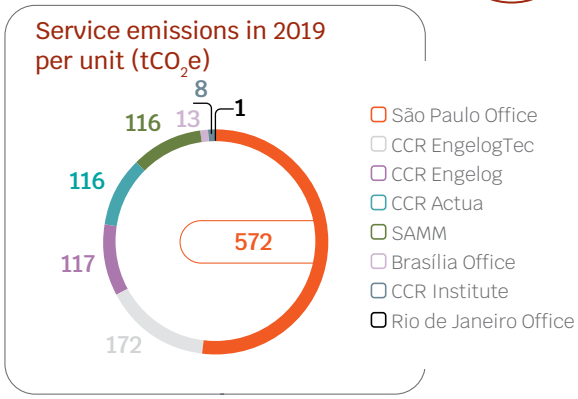


Evolution of scope 3 emissions from services (tCO_2e)









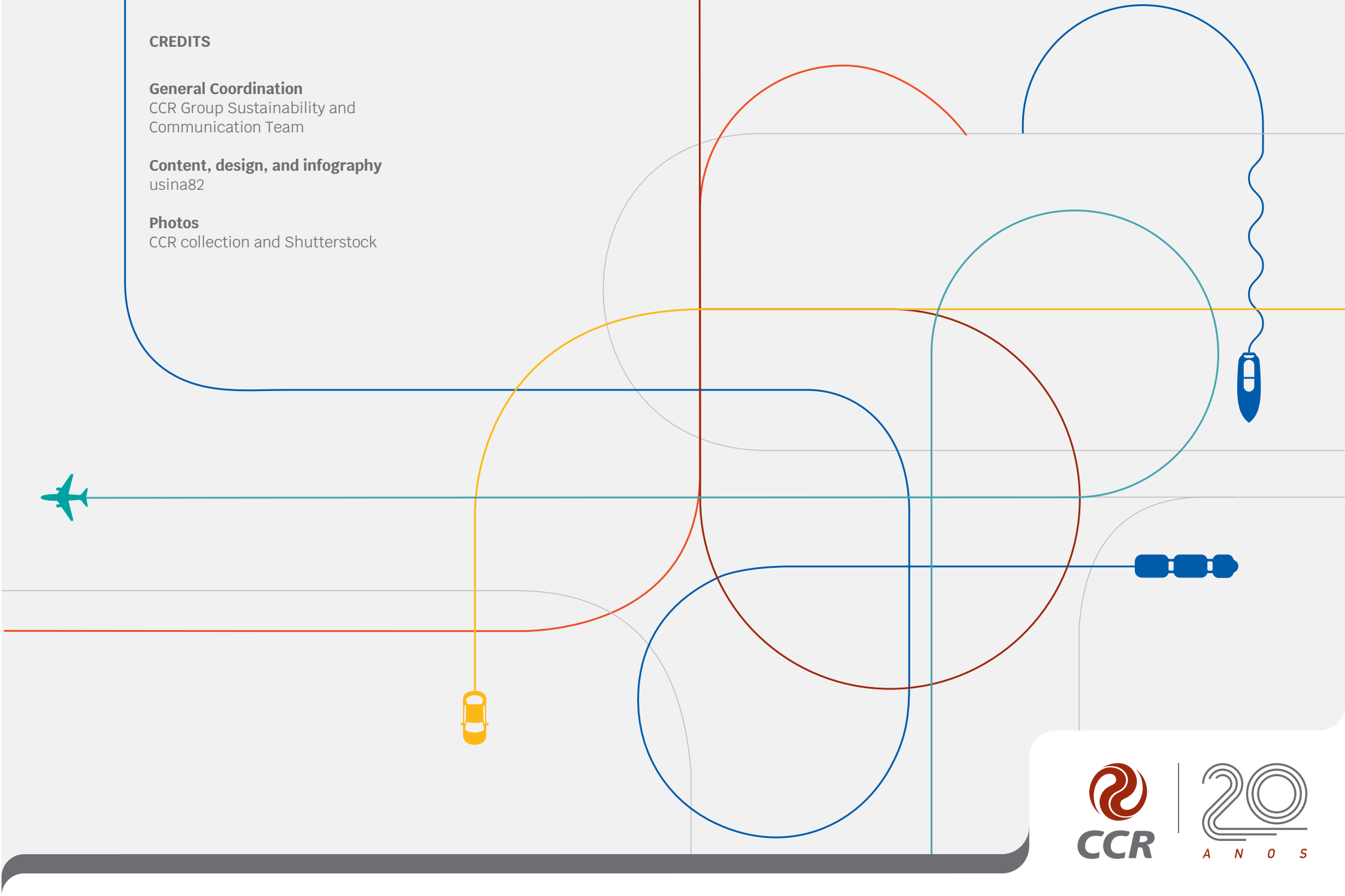
Service emissions by emitting source (tCO_2e)	2019	2018	2017
Scope 1			
Mobile combustion	114	127	112
Stationary combustion	3	12	12
Scope 2			
Electricity acquisition	88	68	86
Scope 3			
Business trips	813	1,079	712
Activities related to fuel and energy not included in scopes 1 and 2	89	109	108
Waste generated in operations	9	9	9

CREDITS

General Coordination
CCR Group Sustainability and Communication Team

Content, design, and infography
usina82

Photos
CCR collection and Shutterstock



CCR 20 ANOS