Communicative Greenhouse Gas Inventory

base year 2017

CCR

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Presentation

Presentation

CCR Group facilitates infrastructure investment and service solutions, contributing to Brazil's social and economic development. Since 1999, when it was founded, the Group has improved the conditions of roads used by people and products that create the country's wealth. Throughout its trajectory, it has expanded into the urban mobility and airport sectors, reached the international market, and put all its technical and managerial knowledge to use in the development of more sustainable and intelligent cities.

Between 2016 and 2017, CCR Group promoted a transformation in its governance model. Now, each segment of activity - state toll roads, federal toll roads, airports and urban mobility - is managed by a specific business area, with dedicated and exclusive professionals, to which the business units are now directly accountable. The Shared Services Center, formed by CCR Actua, CCR Engelog and CCR EngelogTec, is a competitive differential that drives CCR Group in search of a new cycle of growth. These units provide administrative, engineering and information technology services with innovation, quality and competitive costs.

Committed to rendering accounts of its socioenvironmental performance, CCR Group has been publishing its Annual and Sustainability Report in accordance with Global Reporting Initiative (GRI) guidelines since 2007, and is one of the first companies in Brazil to adopt the integrated reporting framework (IIRC - International Integrated Reporting Council). The disclosure of its performance in connection with greenhouse gas (GHG) emissions also goes back a long way: the Group's inventories have been published on the public registry website of the Brazilian GHG Protocol Program since 2012.

The development of a communicative version of this inventory has been underway since 2015 and is aimed at broadening the scope of this content, which is often more technical, to reach a wider range of audiences of CCR Group. This publication strengthens the rendering of accounts on progress made in combating and adapting to climate change, and is part of the set of documents of the Annual and Sustainability Report 2017, which also has the following formats:

- **ASR 2017**
  This report presents the main corporate and individual segment highlights in the last year, focusing on business strategy and the ability to create value for the stakeholders.

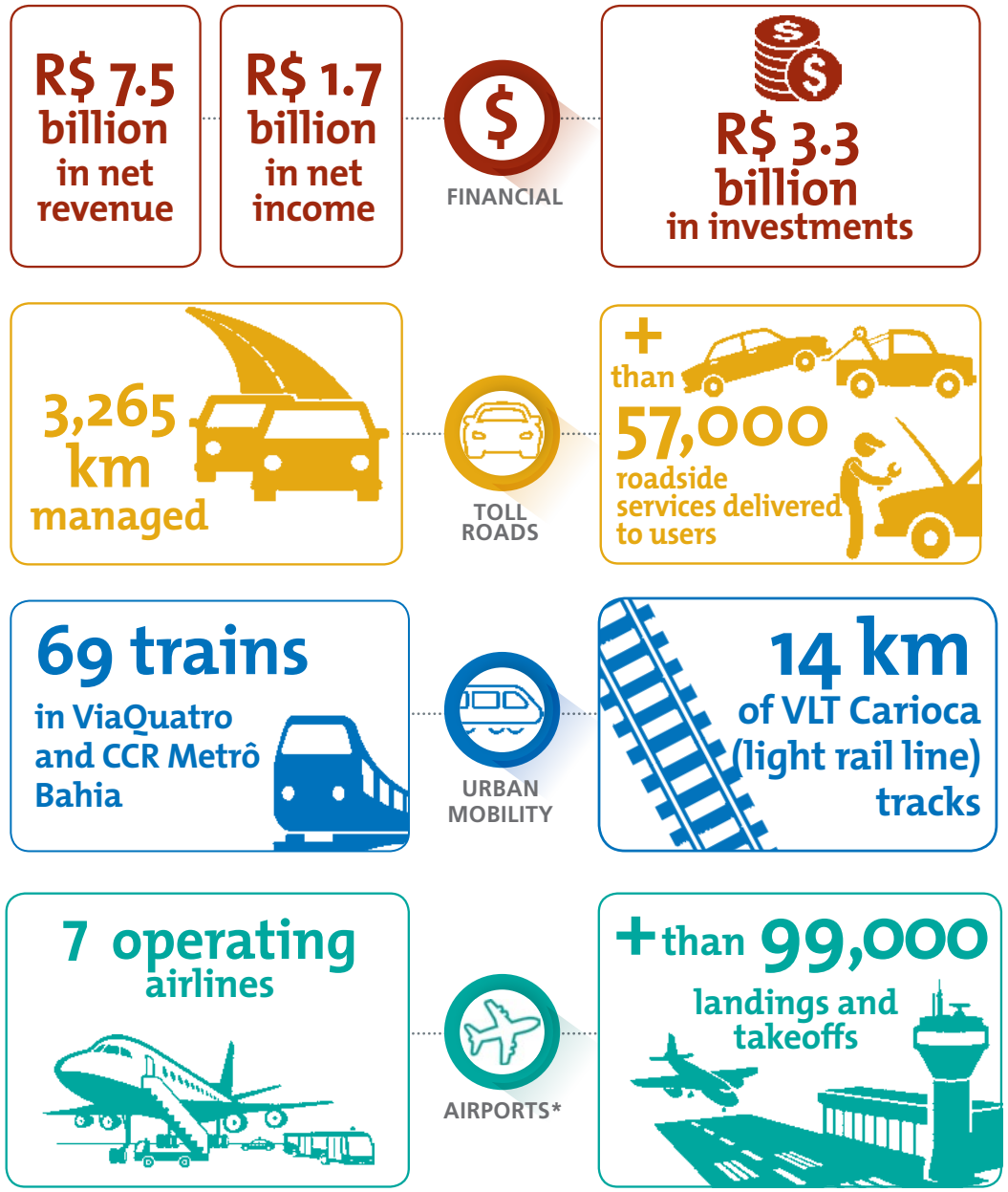
- **GRI Guidebook**
  Consolidates information that meets the requirements of GRI Standards, grouped by material issue.

- **Online version**
  Website with summarized content and accessibility resources

- **Report on Activities of Instituto CCR (CCR Institute)**
  Published for the first time, the report highlights the value proposition and important advances of the Institute in the year

Click here to access them.

Highlights of 2017



*Information exclusively on BH Airport.

Our strategy

Our strategy

One of the premises of CCR Group's sustainability management is to collaborate with the construction of a low-carbon economy, continuously reducing the environmental impacts resulting from its activities and minimizing risks to operations in the present and future. This is the reason why operational eco-efficiency was identified as one of the material issues in its materiality matrix.

This matrix was created in 2016, based on a comprehensive process of engagement of stakeholders and market experts, and guides CCR Group's sustainability management and accountability. Aspects such as water and energy consumption, waste disposal and the management of risks and opportunities related to climate change are addressed under the heading of Operational eco-efficiency. In relation to risks and opportunities, the Group's businesses adopt measures geared towards both what is called mitigation, and adjustment to climate change (see more in the table opposite).

CCR Group's sustainability management structure features specialized teams and committees for the definition of strategies and initiatives related to the topic, ranging from operations to levels of governance. Within the framework of the Board of Directors, it is the responsibility of the Strategy and Sustainability Committee to analyze matters related to the topic, when relevant, prior to deliberation by the Board. At the corporate level, the Group has a Communication and Sustainability Board, which is formally responsible for the issue, and a Steering Committee, at Executive Board level, to decide on new projects and follow-up on actions already implemented.

The corporate area of Sustainability, established at CCR Actua, organizes monthly meetings with the high-ranking staff members of each unit, professionals responsible for the issue in their respective units. In each unit, the high-ranking staff members also coordinate the Sustainability Committees, which bring leaders together to discuss and validate actions implemented locally.

When the topic is climate change, two approaches can be used to deal with its risks and opportunities:

Mitigation

Mitigation consists of initiatives that seek to avoid global warming by reducing greenhouse gas (GHG) emissions. This involves operating more efficiently in the consumption of natural resources, using technologies with less environmental impact.

Mitigation X Adjustment

Adjustment

Adjustment covers the measures needed to face the impacts of climate change that can no longer be avoided. At this point, strategies for asset resilience to extreme weather conditions are one of the priorities.

Every year CCR Group reviews and establishes the General Business Plan, which contains the Overarching Goals and Guidelines (OGGs), prepared on a basis of the Strategic Objectives defined by the Board of Directors and that cover all units. OGGs 1 and 2 demonstrate the commitment to sustainability as a condition for performance and the competitiveness of operations. Using the General Business Plan as a starting point, the units define their Business and Operational Action Plans, breaking down the strategic guidelines defined previously for the contribution of each operation. Within the framework of CCR Actua, the Business Action Plan includes a commitment to "implement programs and actions guaranteeing the reduction of greenhouse gas (GHG) emissions for CCR Group companies, so that the volume of emissions is equal to or lower than the volume recorded for the previous year". This corporate stance considers the responsibility of all CCR Group units for complying with this Business Action Plan, with its respective targets, indicators, and economic incentive mechanisms.
By coordinating and boosting initiatives within each company, CCR Actua strengthens the interdepartmental commitment to the reduction of GHG emissions.

The Overarching Goals and Guidelines explain CCR Group's commitment to sustainability:

OGG1

Ensure the Governance, Management and Sustainability advantage meets the needs of the market, new businesses and new geographies.

OGG2

Consolidate Sustainability and user satisfaction as a competitive advantage of CCR Group, an integral part of business protection and creation of value.

Main commitments of CCR Group's Climate Change Policy

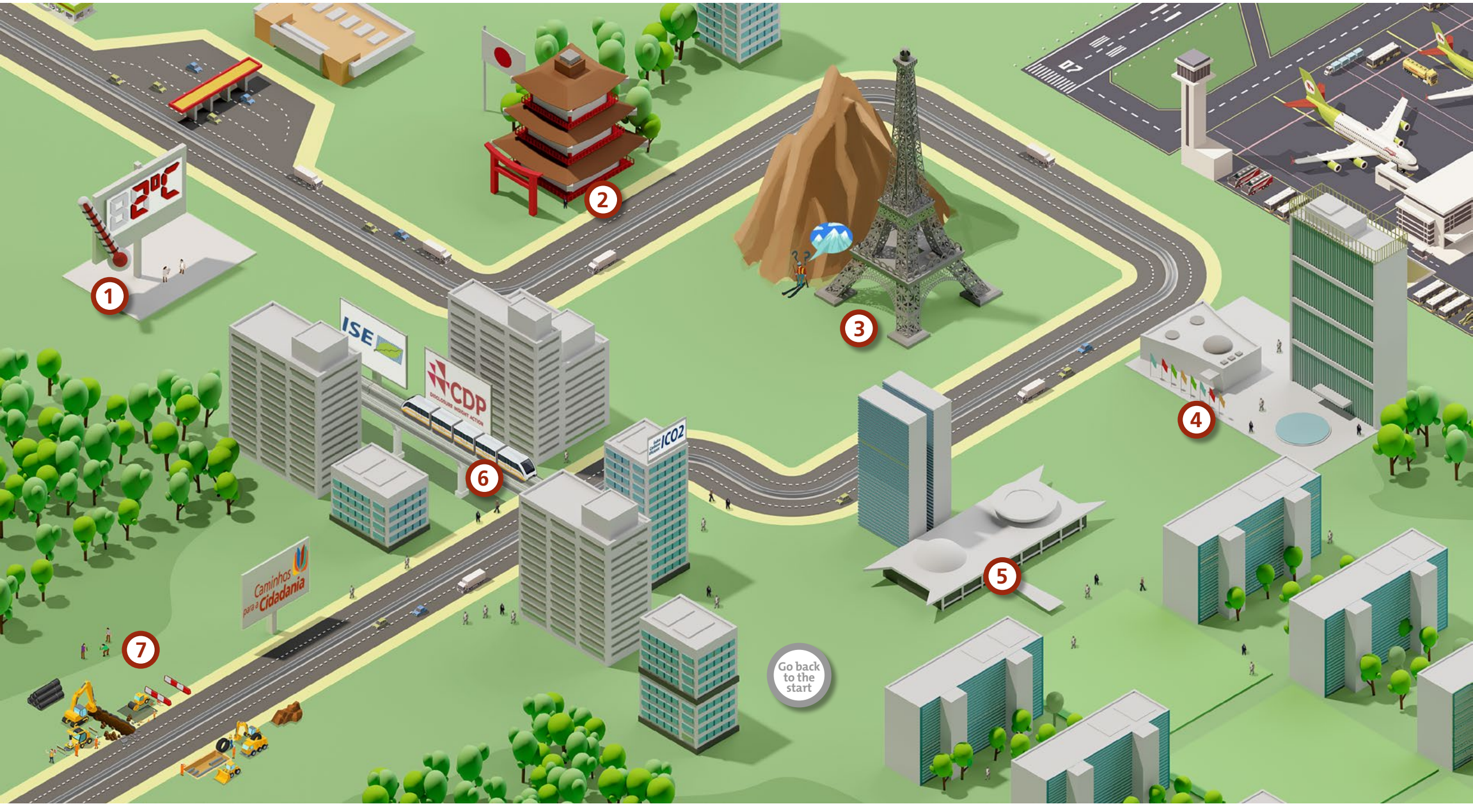
- Engage external audiences to enhance the understanding of climate change
- Include the issue in strategic and investment decision-making processes
- Widely disseminate the Policy and publish the GHG inventory on an annual basis
- Incorporate the analysis of GHG emissions into supplier selection and development
- Manage risks associated with climate change by implementing adjustment strategies
- Participate in voluntary initiatives, contributing to a low-carbon economy
- Set targets for the direct or indirect reduction of emissions
- Promote new services, products or business models that make it possible to reduce GHG emissions
- Anticipate compliance with regulatory regimes still under discussion
- Define variable remuneration criteria linked to the improvement of performance in the issue

Approved in 2011 and revised in 2016, the Climate Change Policy formalizes the objectives, guidelines and responsibility in the management of the issue. The references for the document include the principles of the Global Compact, the Carbon Disclosure Project and the Global Reporting Initiative and the document establishes, among others, a series of commitments (see some of them in the table).

Click here to access it.

Climate changes: global context

Click on the numbers to learn more about regulatory milestones, market pressures and the role of companies in combating global warming



Internal commitments

	Goal for 2017	Results for 2017
CCR Actua	• Implement programs and actions guaranteeing the reduction of GHG emissions for CCR Group companies, so that volumes are equal to or lower than emissions recorded for the previous year	CCR Group emissions totaled 874,000 tCO_2e, an increase of 2% over the previous year
CCR NovaDutra	• Reduce electricity consumption by at least 1% compared to 2016, thereby reducing GHG emissions	It exceeded the target, with a reduction of 7%
CCR ViaLagos	• 3% reduction in energy consumption compared to 2016	Energy consumption was 3% higher in the annual comparison
CCR RodoNorte	• Reduce energy consumption and solid waste generation by 0.5% compared to 2016, aiming at reducing GHG emissions	It exceeded the target, reducing energy consumption by 7% and waste generation by 52%
CCR MSVia	• Reduce the generation of solid waste by 0.5%	Waste generation was 54% higher than in the previous year
CCR AutoBAn	• Revitalize the process of selective collection at the head office and bases, through training, monitoring and replacement of materials • Coordinate the efforts of the energy committee, together with CCR EngelogTec, in order to reduce energy consumption compared to 2016	Energy consumption increased 7% in the last year

Purchase of carbon credits

In line with its Climate Change Policy, in June 2018, CCR Group acquired carbon credits to offset the scope 1 emissions that could not be avoided in 2017. The operation involved the purchase of 436.3 carbon credits produced by the cogeneration project of Central Energética Rio Pardo (CERPA) (power plant) using the Clean Development Mechanism (CDM) methodology, within the framework of the Kyoto Protocol (UN). This offsetting is equivalent to an increase of 436.3 tCO_2e in scope 1 of the 2017 inventory in comparison to the previous year, not including emissions resulting from land-use changes that were initially reported in the last period.

	Goal for 2017	Results for 2017
CCR ViaOeste	• For electricity, fuels and waste: guarantee consumption below or equal to 2016 under normal conditions	The three indicators recorded an increase in 2017 (5% in electricity, 14% in fuels and 125% in waste)
CCR RodoAnel	• For electricity, fuels and waste: guarantee consumption below or equal to 2016 under normal conditions	The three indicators recorded an increase in 2017 (4% in electricity, 8% in fuels and 34% in waste)
CCR SPVias	• Reduce or maintain electricity consumption compared to 2016	Achieved a 2% reduction in electricity consumption
ViaQuatro	• Reduce energy consumption by 1% in comparison to the consumption planned for 2017	Energy consumption was 0.56% lower than planned
CCR Barcas	• Reduce electricity consumption by 3% compared to 2016	Electricity consumption was 4% higher in the annual comparison

External commitments

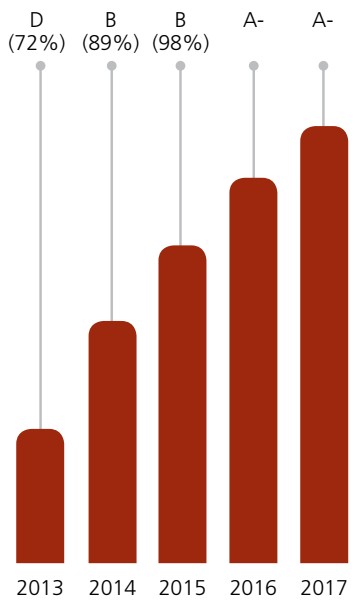
CDP

Since 2010, CCR Group has been responding voluntarily to the **CDP climate change questionnaires**. Based on these data and on responses from 5,600 other companies worldwide, CDP draws up analyses of environmental risks, opportunities and impacts that support decision-making by investors that represent more than US$ 100 trillion. Over the past year, CCR Group has also started to respond to the evaluation targeting the supply chain, the CDP Supply Chain, increasing transparency around the issue and engaging suppliers to incorporate strategies to deal with climate change and other significant environmental impacts.

The individual questionnaires of all the participants are available to the public on the CDP website, where visitors only need to register free of charge to access the documents. In addition, each reporting company is evaluated annually, considering the scope and transparency of information and the company's level of understanding of climate change, the methods used to manage the issue, and the actual contribution of its operations. These evaluations follow a scale from D- to A, where companies with the best results are recognized annually.

Click here to access the CDP website

RAISE IN CCR GROUP SCORES IN CDP CLIMATE CHANGE



Brazilian GHG Protocol Program

Since 2012, CCR Group has made its annual inventory available in the **Public Registry of Greenhouse Gas Emissions of the Brazilian GHG Protocol Program**. The initiative, coordinated by the Center for Sustainability Studies of EAESP-FGV (GVCes), is a pioneer in the country and currently has the largest base in Latin America, with more than 1,450 public organizational inventories. Each year, CCR Group implements improvements in its inventory. Since 2013, the document has been awarded the Gold seal, in recognition of the external and independent verification of the reported data. In addition, since 2015 it has been possible to access the data on each of the companies and concessions included in the inventories. In the 2017 inventory, scope 1 emissions began to voluntarily consider impacts related to land-use change (find out more on page 18).

Click here to access the Public Registry of Greenhouse Gas Emissions

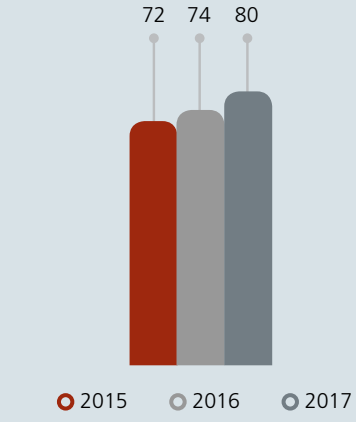
Voluntary participation in national and international emissions reporting initiatives strengthens the transparency of CCR Group in its management of this issue. Moreover, accountability cycles also strengthen monitoring systems and support action plans and initiatives to improve performance.

Recognition in the capital market

CCR Group has been a constituent of the B3 (Brasil, Bolsa, Balcão) Carbon Efficient Index (ICO2) since its inception in 2012. The ICO2 unites publicly traded companies with greater transparency and better performance in the intensity of GHG emissions, encouraging investors and companies to pursue a low-carbon economy.

The B3 Business Sustainability Index (ISE) has also relied on the continuous participation of CCR Group since 2012. The progress of scores in all dimensions in recent years confirms the continuous improvement in management and in the business sustainability reporting. Specifically in the climate dimension, the score rose 8% in the last year alone, and 45% when compared to 2013.

CCR GROUP SCORES IN THE CLIMATE DIMENSION OF ISE



Climate –Business Action on Climate Change Forum

Since 2016, CCR Group has been part of the Climate - Business Action Forum on Climate Change, a working group coordinated by Instituto Ethos, which monitors the progress of commitments made in the **Open Letter to Brazil (2015)**, of which CCR Group is a signatory. This network of Brazilian companies committed to the role of organizations in the development of a low-carbon economy is constantly organizing discussions and reflections on key aspects of the issue. The agendas monitored by the Climate Forum include potential laws applicable to GHG emissions, public policies focused on climate change, and indicators for companies to monitor their progress in relation to commitments made in 2015. públicas voltadas às mudanças climáticas e indicadores para que as companhias monitorem seus avanços em relação aos compromissos assumidos em 2015.

Click here to access the Open Letter to Brazil (2015)

Last year, CCR Group was one of the 25 companies that signed the **open letter Private Sector Supports Carbon Pricing in Brazil**, released in November during a parallel event of the UN Climate Change Conference in Bonn, Germany (COP-23).

Click here to access the open letter Private Sector Supports Carbon Pricing in Brazil

Awards

Programa Brasileiro GHG Protocol

CCR Group's greenhouse gas inventory received the Gold seal in the Brazilian GHG Protocol Program for the sixth consecutive year. The award is offered to inventories that cover all emission scopes and are audited by an external specialized company.

CDP DISCLOSURE INSIGHT ACTION

For the third year in a row, CCR Group is listed among "The top 10 companies in climate change" according to CDP. In addition, in 2017 the company entered CDP's A List for the first time. This is a list of companies evaluated by the initiative as global leaders in environmental performance.

Índice Carbono Eficiente ICO2

CCR Group maintained its listing in the B3 Carbon Efficient Index (ICO2) for the sixth year running. This portfolio is composed of companies participating in the IBRx-50 index that adopt transparent practices in relation to GHG emissions.

CDP SUPPLIER ENGAGEMENT LEADER

CCR Group was recognized by CDP's Supplier Engagement Leader Board 2018 for its engagement with its value chain in relation to climate change within the framework of the 2017 CDP Supply Chain program.

Índice de Sustentabilidade Empresarial ISE

In the evaluation of the B3 Business Sustainability Index (ISE), CCR Group scored above average for the portfolio average in the Climate Change dimension.

OURO PLUS SELO CLIMA PARANÁ 2016

In 2017, CCR RodoNorte received the Paraná - Ouro Plus (Gold Plus) Climate Seal, issued by the Department of the Environment and Water Resources of the state government of Paraná. This is a recognition for the unit's GHG emissions reporting for the year 2016.

Strategic initiatives

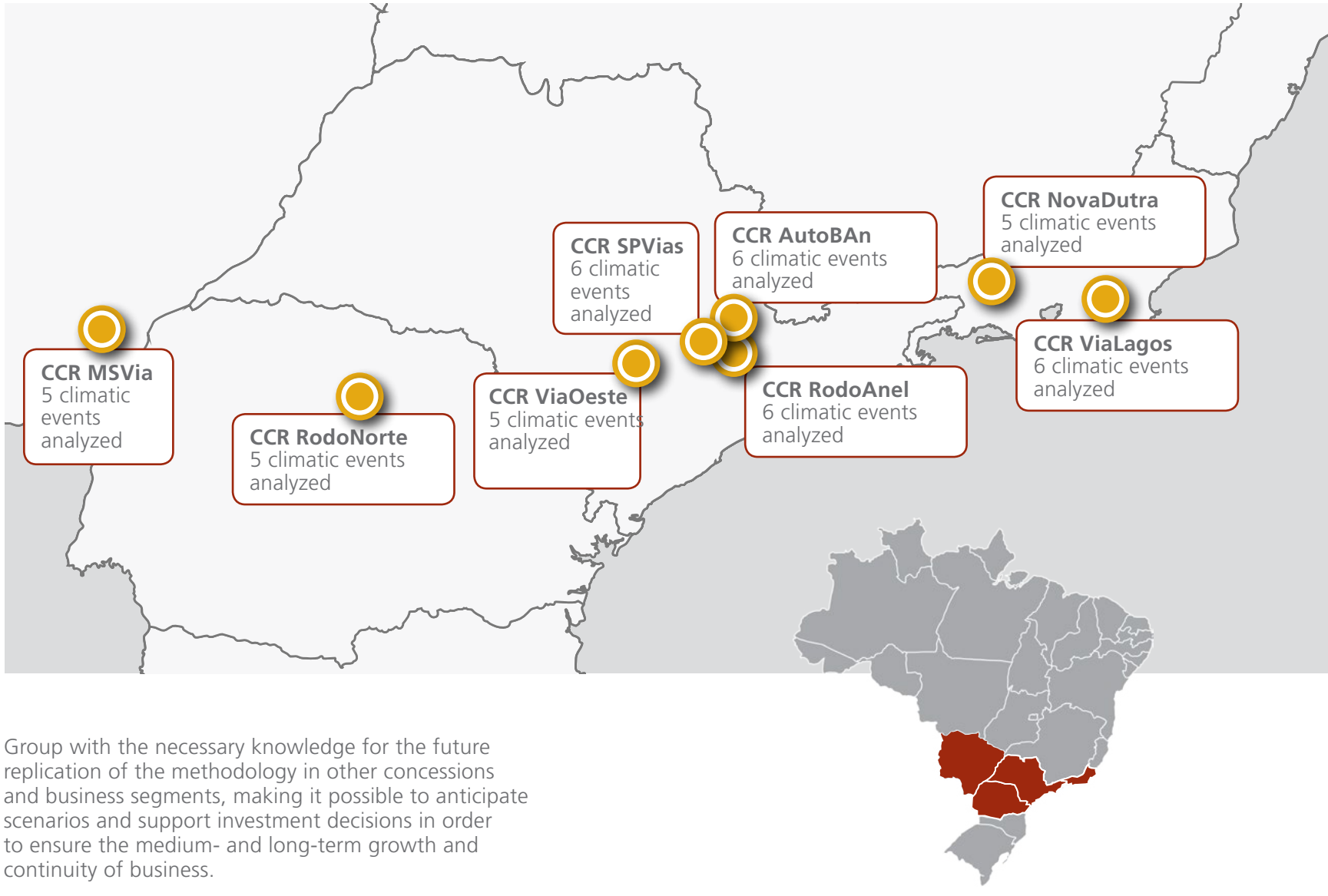
Plan for Adjustment to Climate Changes

The Plan for Adjustment to Climate Changes began to be developed by CCR Group in 2015, initially targeting the segment of tool roads, with a focus on identifying potential impacts and opportunities for the business model. The decision to invest in this project is aligned with the strategy of managing the risks associated with climate change and of implementing adjustment strategies, as outlined by the CCR Group Climate Change Policy.

The units chosen to prepare the study were the eight presented in the map opposite. A georeferenced point (latitude and longitude) was selected in each of these units for the analysis of climatic events, considering the climate scenario until 2040 (short term).

The study evaluated climatic impacts based on three stages: (i) mapping of extreme events that have already affected the concessions; (ii) identification of potential future impacts based on a literature review of reliable sources, such as the National Institute for Space Research (INPE); (iii) prioritization of the risks identified according to the likelihood of occurrence of the climatic event and the severity of the impact.

Besides providing a clear view of the potential impacts and opportunities for business adaptation, the project also provided CCR Group with the necessary knowledge for the future replication of the methodology in other concessions and business segments, making it possible to anticipate scenarios and support investment decisions in order to ensure the medium- and long-term growth and continuity of business.



Carbon Footprint Project

The Carbon Footprint Project is part of CCR Group's climate change mitigation strategy and aims to improve the mechanisms available for the quantification of greenhouse gas emissions produced by toll road concession activities. With this initiative, the expectation is to map the volume of GHG emitted throughout the life cycle of toll road services, called carbon footprint, identifying opportunities for reduction and improvement of performance.

To achieve this quantification, CCR Group started the project in 2016, based on the guidelines and parameters established by the ISO 14040 and PAS 2050 standards (the latter developed by the British Standards Institute). The initial scope outlined for the project is the same as the Plan for Adjustment to Climate Changes, considering eight concessionaires that manage 3,300 kilometers of toll roads, which boosts efficiency in the construction of the Group's own methodology and in replication to other business segments.

The first phase of the Carbon Footprint Project consisted of identifying the activities carried out by the concessions that generate GHG emissions within the framework of direct operations (scope 1), lighting systems and support operations (scope 2), and of the value chain (scope 3). Based on this evaluation, the team began parameterizing the carbon footprint calculation formulas in CCR Group's environmental performance indicator management software, coordinated by CCR Actua.

One of the main benefits expected from the project is the identification of opportunities for cost cutting by means of a more dynamic and accurate management of GHG emissions throughout the life cycle of services provided in the toll road concessions. In addition, it will be possible to positively influence the entire value chain, encouraging suppliers and users to adopt practices and solutions that are more efficient in environmental terms from the point of view of climate.

Carbon pricing

Initiated in December 2017, the carbon pricing project is aligned with CCR Group's guideline for anticipating regulatory scenarios and considering the externalities related to GHG emissions in its decision-making processes, making it possible to estimate the financial impact that a potential taxation or levy of duties on GHG emissions by the government would produce on the business. The initiative is structured in four phases and will result in the identification of the most suitable approach to the modeling of a specific internal carbon price for the Group's various businesses, with the purpose of internalizing this variable in decision-making processes, as well as risks analyses and the return on projects.

Carbon pricing is already being adopted in 47 regions around the world and may represent a relevant instrument for Brazil to achieve the target set in the context of the Paris Agreement.

Stages of the carbon pricing project

1. Analysis of the current processes of CCR Group in relation to climate changes
2. Benchmarking of corporate experiences in internal carbon pricing
3. Evaluation of carbon pricing scenarios in the world and characteristics for implementation in Brazil
4. Recommendation of internal pricing strategy for CCR Group

Our emissions inventory

Methodology

CCR Group's greenhouse gas (GHG) emissions inventory follows the methodology of the Brazilian GHG Protocol Program. Originally developed by the World Resources Institute (WRI) in 1998, this is the method used most often by companies and governments worldwide to prepare inventories, and was adapted to the national context by the Center for Sustainability Studies of EAESP-FGV (GVCes) and by the WRI in 2008.

The CCR Group inventory covers all operations in Brazil over which it holds operational control, regardless of equity interest in these companies or concessions. The survey considers all GHGs provided for in the Kyoto and Montreal Protocols and, as in previous years, encompassed the three emission scopes (see more in the table).

Inventoried operations

Click on the caption to discover which units were included in the CCR Group GHG inventory Corporate offices

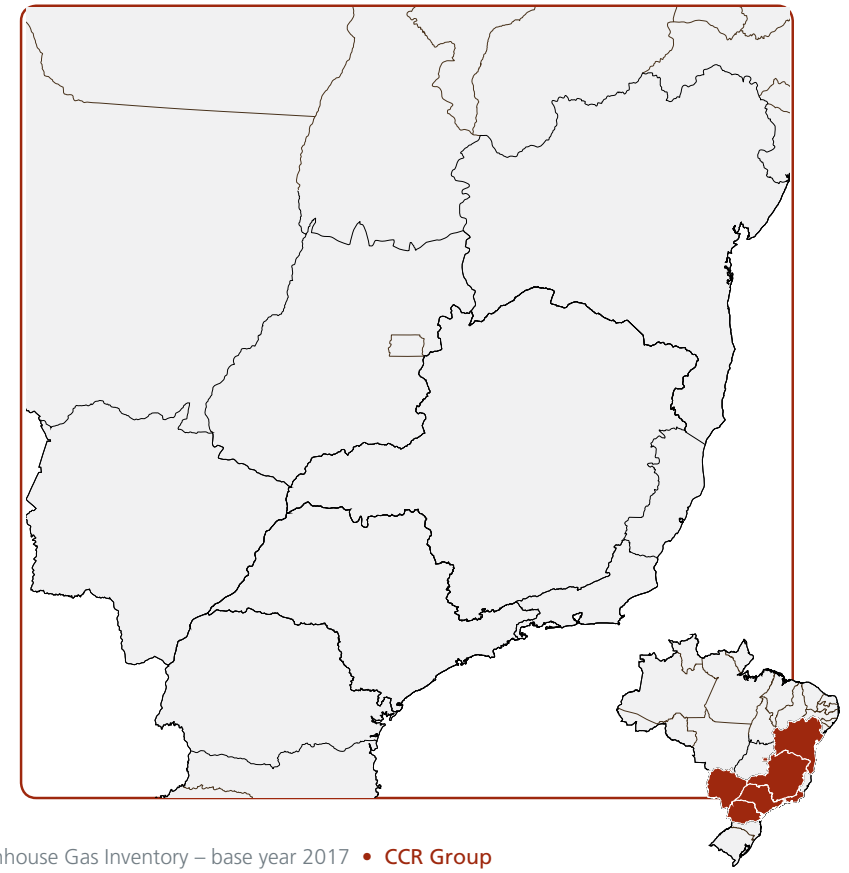
CORPORATE OFFICES

TOLL ROADS

URBAN MOBILITY

AIRPORTS

SERVICES



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

SCOPE 1
Emissions generated directly by the company

- Fuel consumption in vessels, fleet vehicles, generators and compressors
- Consumption of liquefied petroleum gas (LPG) in cafeterias
- Fugitive emissions in refrigeration and air conditioning equipment and in the refilling and acquisition of fire extinguishers
- Cutting and welding processes
- Effluent treatment
- Suppression of vegetation and reforestation

SCOPE 2
Emissions resulting from the consumption of electricity acquired from third parties, accounting for the impact caused when that energy was generated

SCOPE 3
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 of external companies
- Fuel consumption of aircraft upon landing, take-off and during the cruise stage
- Emissions from the production chain of fuel consumed by the Group
- Outsourced transportation of employees
- Electricity acquired and passed on to third parties

Go back to the start

Inventory preparation process

Fact finding and consolidation

- The raw data for the inventory are collected by the units over the course of the year and consolidated in the annual overview to support the calculation of emissions. At this stage, a specialized consulting firm gathers all the necessary information together with the CCR Group team.

Application of the emissions calculation tool

- This information is entered into the inventory calculation platform, which automatically generates the emissions from each activity. From this point on, the data are always converted into tons of CO_2 equivalent, a universal measure for GHG accounting.

Preparation of the preliminary report

- Using these calculations, the consulting firm drafts the preliminary version of the report. In addition to the results for the year, this team also evaluates the consistency and coherence of information in comparison to previous periods and identifies, together with the units, the factors that explained the performance obtained.

Independent verification

- Once internally validated, the inventory is forwarded for evaluation by a specialized independent auditing firm. CCR Group has adopted this practice since 2013, and it serves to enhance the reliability of the information presented in the document.

Publication of the final report

- After the inventory has been approved in the external assurance process, the final report is consolidated and made available in the Public Registry of Greenhouse Gas Emissions of the Brazilian GHG Protocol Program. In addition, since 2015 CCR Group has been developing this communicative version of its inventory.

Critical review

In all the stages of this process, the data are analyzed critically and may be returned to the previous step for review. This process of collaborative construction increases the consistency of the document and also contributes to the learning and development of all those involved, generating impacts on the continuous improvement of management and of the monitoring of emissions.

Results 2017

CCR Group

Consolidated view

Emissions totaled 874,000 tCO_2e, an increase of 2% over the previous year. The scope with the highest volume was that of indirect emissions in the chain (scope 3), a typical characteristic of service provision businesses.

Scope 1

In total, scope 1 accounted for 63,300 tCO_2e, up 22% over the result for 2016. This increase is explained by the inclusion of emissions resulting from the land-use change: if we were to disregard these emissions, the total emissions of this scope would have been 1% lower than those of the previous period. One of the highlights was the 7% reduction in emissions from mobile sources, achieved through actions such as replacing ordinary light bulbs with LED models and using renewable fuels rather than fossil fuels.

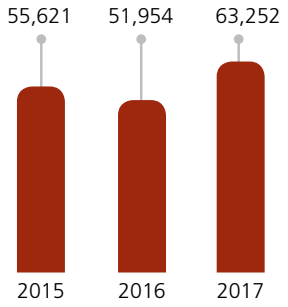
Scope 2

The expansion of operations in segments with high electricity consumption levels (airports and subway) and the 13% increase in the Brazilian electric power emission factor affected the performance of CCR Group in this scope. Indirect emissions from the acquisition of electricity were 34% higher in the annual comparison, reaching 15,400 tCO_2e.

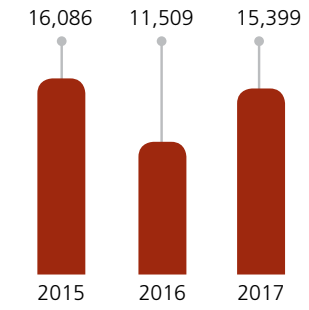
Scope 3

CCR Group has accounted for aircraft movement emissions at BH Airport since 2016. This is the main GHG emitting activity in scope 3 and was accountable, in 2017, for 90% of the total. The remaining 10% is mainly emitted by toll road expansion, conservation and maintenance activities, and is related to the production of asphalt, cement, stone and gravel and to fuel consumption.

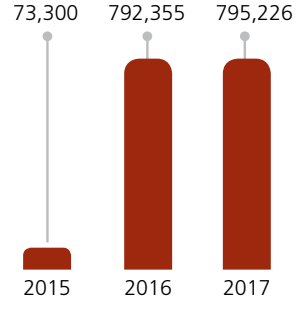
PROGRESS OF SCOPE 1 EMISSIONS (tCO_2e)



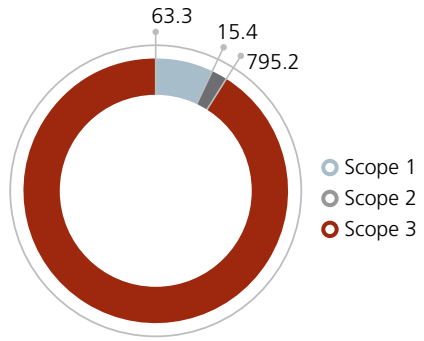
PROGRESS OF SCOPE 2 EMISSIONS (tCO_2e)



PROGRESS OF SCOPE 3 EMISSIONS (tCO_2e)



CCR GROUP GHG EMISSIONS IN 2017 BY SCOPE (THOUSANDS OF tCO_2e)



7% reduction
in direct emissions from mobile sources

Emissions by source of emission (tCO_2e)

Scope 1	
Mobile sources	46,692
Land-use change	10,861
Fugitive emissions	3,654
Stationary combustion	1,155
Effluents	890
TOTAL	**63,252**
Scope 2	
Energy acquisition	**15,399**
Scope 3	
Other scope 3 emissions	715,971
Purchased goods and services	52,306
Activities related to fuel and energy not included in scopes 1 and 2	16,935
Waste produced by operations	5,846
Commute of employees (home-work)	1,564
Business travel	1,393
Transportation and distribution (upstream)	713
Leased assets (the company as lessee)	499
TOTAL	**795,226**

Toll roads

Consolidated view

Emissions totaled 99,000 tCO_2e, an increase of 21% over the previous year. The main variation occurred in scope 1, whose inventoried activities and sources were expanded with the inclusion of emissions resulting from land-use change.

Scope 1

Mobile sources are the main factor of direct GHG emissions in the Toll Roads segment and are related to the concessionaires' fleet of vehicles for user assistance, tow trucks, traffic inspections, road surface monitoring and logistic support. Secondly, land-use change, incorporated into this cycle of the inventory, had an impact on the 61% increase in the year. If we were to disregard this increase, growth would have been 11%.

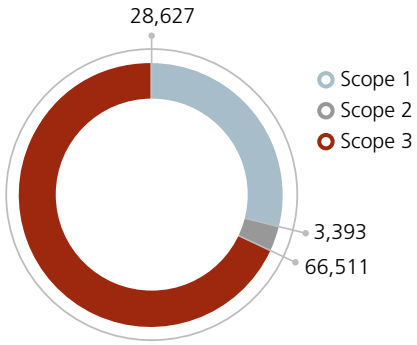
Scope 2

The variations in recent years reflect the oscillation in the Brazilian electric power factor, defined for the Sistema Interligado Nacional (SIN), the national power grid. The actual consumption of the concessions, measured in kWh, has varied only 3% in the last three years.

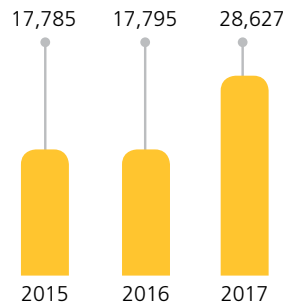
Scope 3

This category is directly affected by road twinning works, which require the consumption of construction materials and the transportation of companies contracted for these services. Last year's performance was mainly affected by the twinning of CCR SPVias in the urban segment of Avaré (state of São Paulo).

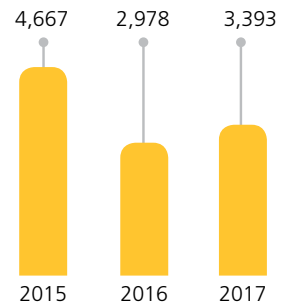
GHG TOLL ROADS EMISSIONS IN 2017 BY SCOPE (tCO_2e)



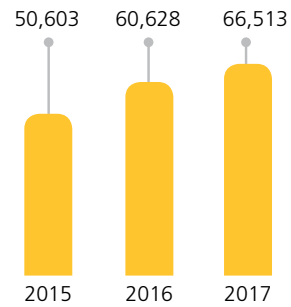
PROGRESS OF SCOPE 1 EMISSIONS (tCO_2e)



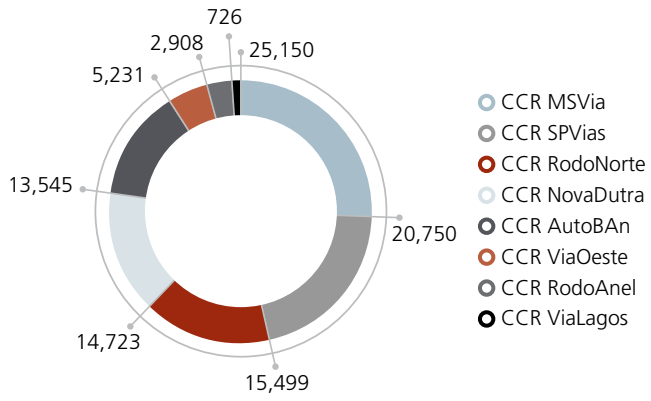
PROGRESS OF SCOPE 2 EMISSIONS (tCO_2e)



PROGRESS OF SCOPE 3 EMISSIONS (tCO_2e)



GHG TOLL ROADS EMISSIONS IN 2017 BY CONCESSION (tCO_2e)



36% reduction
in scope 3 of CCR MSVia

Emissions by source of emission (tCO_2e)

Scope 1	
Mobile sources	17,594
Land-use change	8,802
Fugitive emissions	1,379
Stationary combustion	609
Effluents	243
TOTAL	**28,627**
Scope 2	
Energy acquisition	**3,393**
Scope 3	
Purchased goods and services	50,289
Activities related to fuel and energy not included in scopes 1 and 2	11,215
Waste produced by operations	2,979
Commute of employees (home-work)	1,564
Transportation and distribution (upstream)	362
Business travel	104
TOTAL	**66,513**

Urban mobility

Consolidated view

Emissions totaled 52,000 tCO_2e, an increase of 10% over the previous year. The most significant growth was in scope 2, due to the expansion of CCR Metrô Bahia (subway line).

Scope 1

The consumption of marine diesel at CCR Barcas (ferry lines) is the main factor accountable for direct GHG emissions in the segment of Urban mobility. Over the last year, the optimization of trips, reviewing itineraries and parameters of speed and consumption, brought about a reduction of 10% in the use of this fuel. In the same scope, the refilling of fire extinguishers at ViaQuatro produced a significant increase in this source of emission. The inclusion of land-use change emissions, which had an impact on the results of CCR Metrô Bahia, also contributed to the 3% rise in total emissions for this scope.

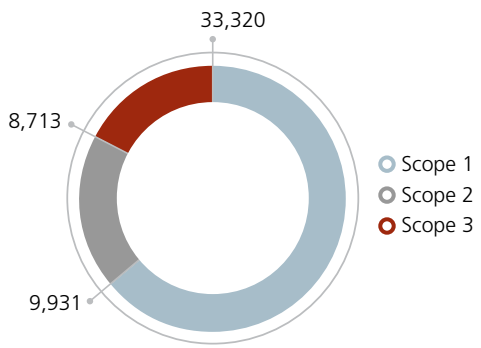
Scope 2

The expansion of CCR Metrô Bahia led to a 39% increase in indirect emissions from the acquisition of electricity. Eight stations were officially opened last year, expanding the population's access to public transportation in the capital of the state of Bahia with safety and quality.

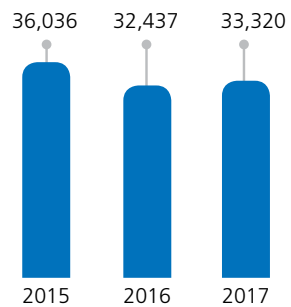
Scope 3

The carbon footprint in the production chain of fuel used by CCR Group's urban mobility concessions is the primary factor of this scope. Over the last year they were accountable for 64% of the total.

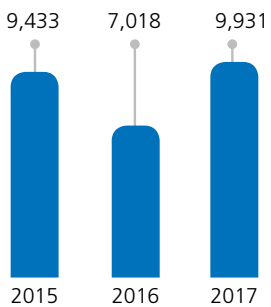
GHG URBAN MOBILITY EMISSIONS IN 2017 BY SCOPE (tCO_2e)



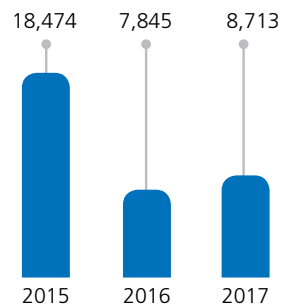
PROGRESS OF SCOPE 1 EMISSIONS (tCO_2e)



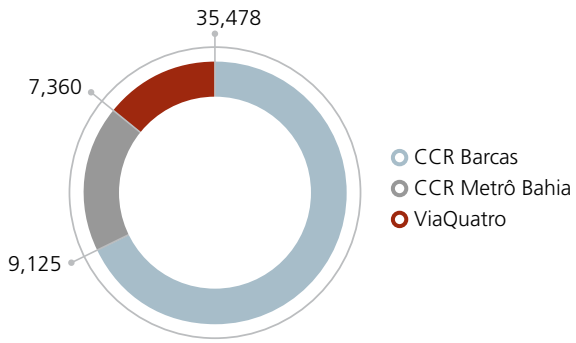
PROGRESS OF SCOPE 2 EMISSIONS (tCO_2e)



PROGRESS OF SCOPE 3 EMISSIONS (tCO_2e)



GHG URBAN MOBILITY EMISSIONS IN 2017 BY CONCESSION (tCO_2e)



10% lower emissions from the consumption of marine diesel at CCR Barcas

Emissions by source of emission (tCO_2e)

Scope 1	
Mobile sources	28,618
Land-use change	2,059
Fugitive emissions	2,054
Stationary combustion	529
TOTAL	**33,320**
Scope 2	
Energy acquisition	**9,931**
Scope 3	
Activities related to fuel and energy not included in scopes 1 and 2	5,534
Waste produced by operations	1,426
Purchased goods and services	1,067
Business travel	355
Transportation and distribution (upstream)	330
Commute of employees (home-work)	2
TOTAL	**8,713**

Airports

Consolidated view

Emissions totaled 722,000 tCO_2e, an increase of 6% over the previous year. Virtually all of this volume is accounted for in scope 3, and originates mainly from the movement of aircraft owned by the airlines operating at the airport.

Scope 1

The reduction of 26% in the direct emissions of BH Airport is a result of the airport expansion and improvement works. With the construction of new boarding gates, the use of buses to transport passengers to the aircraft has been significantly reduced, leading to a 38% decrease in emissions from mobile sources. In order to mitigate growth in the category of effluents, which has been occurring in recent years, the concessionaire has a project to separate sewage treatment into two areas, with efficiency gains in this process.

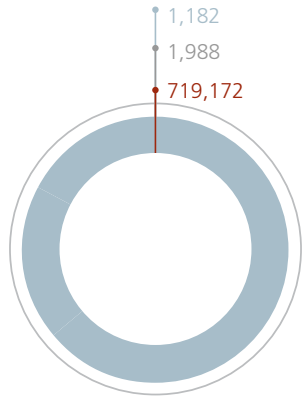
Scope 2

The 24% increase in emissions from electricity consumption is also due to the expansion and modernization works at BH Airport.

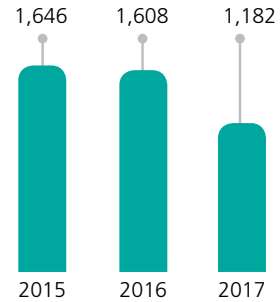
Scope 3

Practically all of BH Airport's scope 3 emissions relate to the movement of aircraft owned by the operating airlines. This accounting was started in 2016 owing to its complexity in terms of fact-finding and consolidation, and includes the overall consumption of fuels during the landing and take-off stages and in the aircraft cruise phase.

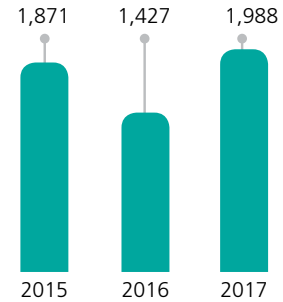
GHG BH AIRPORT EMISSIONS IN 2017 BY SCOPE (tCO_2e)



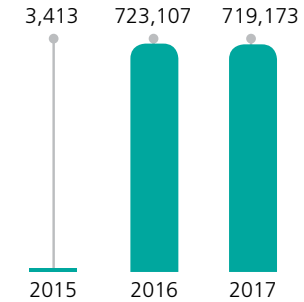
PROGRESS OF SCOPE 1 EMISSIONS (tCO_2e)



PROGRESS OF SCOPE 2 EMISSIONS (tCO_2e)



PROGRESS OF SCOPE 3 EMISSIONS (tCO_2e)



26% reduction in scope 1

38% lower emissions from fuel consumption in the fleet

Emissions by source of emission (tCO_2e)

Scope 1	
Mobile sources	647
Land-use change	309
Fugitive emissions	221
Stationary combustion	5
TOTAL	**1,182**
Scope 2	
Energy acquisition	**1,988**
Scope 3	
Other scope 3 emissions	715,971
Waste produced by operations	1,431
Purchased goods and services	951
Bens arrendados (a organização como arrendatária)	499
Business travel	222
Activities related to fuel and energy not included in scopes 1 and 2	78
Transportation and distribution (upstream)	21
TOTAL	**719,173**

Services

Consolidated view

Emissions totaled 1,039 tCO_2e, an increase of 6% over the previous year. The business trips of the corporate teams are accountable for 68% of the total, representing the largest portion of scope 3.

Scope 1

Direct emissions in these corporate activities are mainly related to consumption in the fleet of vehicles, which recorded an increase of 11% in the last year, affecting performance in scope 1.

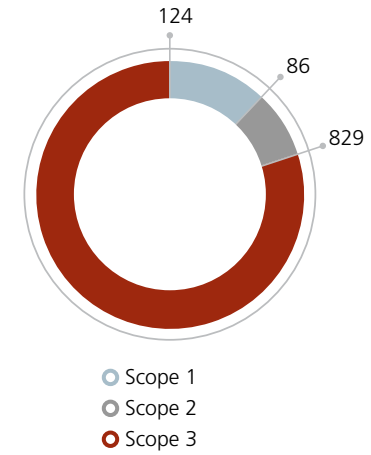
Scope 2

The 9% decrease in electricity consumption in the year, measured in kWh, offset the higher emission factor of the Sistema Interligado Nacional (SIN), or national power grid. In the accounting for emissions, the result was stable in comparison to 2016.

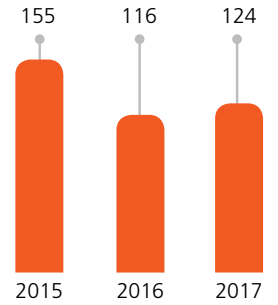
Scope 3

Employee business trips accounted for 86% of total emissions in this scope. The increase over the previous year reflects the growth of CCR Group and the search for new business opportunities.

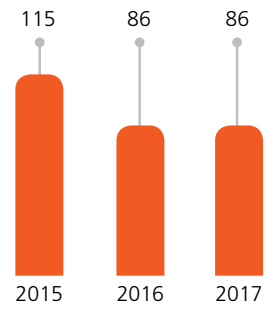
GHG SERVICES EMISSIONS IN 2017 BY SCOPE (tCO_2e)



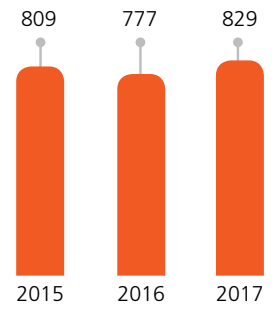
PROGRESS OF SCOPE 1 EMISSIONS (tCO_2e)



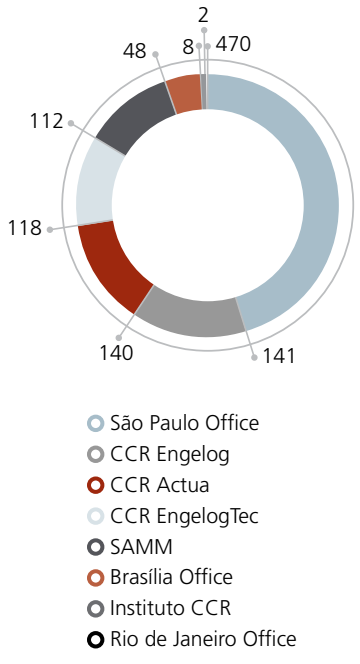
PROGRESS OF SCOPE 2 EMISSIONS (tCO_2e)



PROGRESS OF SCOPE 3 EMISSIONS (tCO_2e)



GHG SERVICES EMISSIONS IN 2017 BY UNIT (tCO_2e)



Emissions by source of emission (tCO_2e)

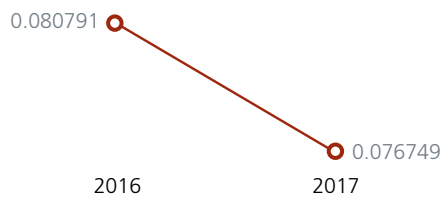
Scope 1	
Mobile sources	112
Stationary combustion	12
TOTAL	**124**
Scope 2	
Energy acquisition	**86**
Scope 3	
Business travel	712
Activities related to fuel and energy not included in scopes 1 and 2	108
Waste produced by operations	9
TOTAL	**829**

Intensity of emissions

Intensity of emissions is an important measure to evaluate the efficiency and behavior of the GHG emissions of CCR Group. This indicator is calculated by dividing the overall total of emissions by a denominator that best represents each type of business, reflecting gains in productivity.

CCR Group

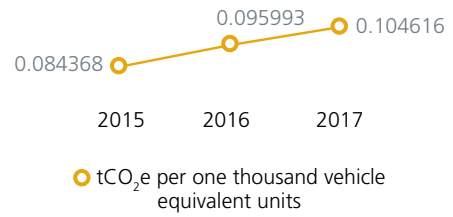
Performance is calculated using the indicator of GHG emissions by the Group's gross income, reported in the Financial Statements. The 5% decrease in the rate of intensity index reflects the growth in gross income of approximately 6%, combined with the growth of only 1% in total emissions.



** The 2015 indicator was not calculated.*

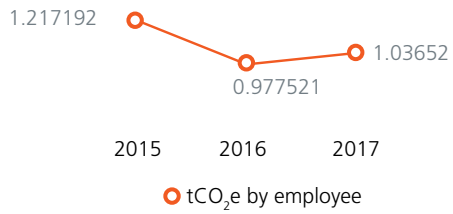
Toll roads

Performance is calculated using the indicator of GHG emissions by the volume of traffic, reported as vehicle equivalent units in the Annual and Sustainability Reports and in the Financial Statements of CCR Group. The relative indicator was higher in 2017, as the volume of traffic (measured in vehicle equivalent units) grew by only 1%, while emissions registered a 10% increase in the annual comparison. These variations are due, respectively, to the lackluster recovery of economic activity in the country and continuous investments in concession works and expansions.



Services

Performance is calculated using the indicator of GHG emissions by the number of employees assigned to the Services units (Shared Services Center, SAMM and corporate offices). The employee headcount in the corporate areas did not change significantly over the year, hence the intensity of emissions was directly affected by the increase in business trip emissions.

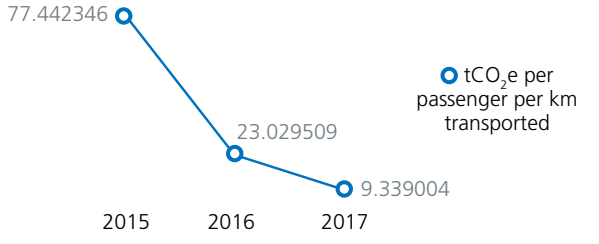


Urban mobility

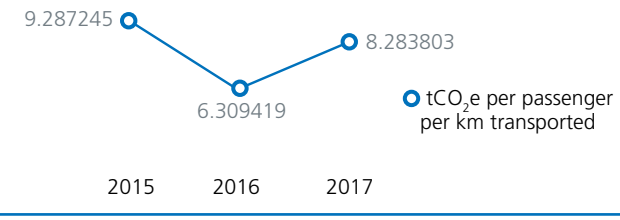
Due to the difference in performance characteristics, this segment has different indicators for waterway transport (CCR Barcas) and subway lines (CCR Metrô Bahia and ViaQuatro). Performance in waterway transportation is calculated using the indicator of GHG emissions per passenger transported. For subway transportation, in turn, intensity is measured by GHG emissions per passenger per kilometer covered.

- CCR Barcas: : the reduction in fuel consumption was not sufficient to offset the 17% decrease in the number of passengers transported, reflecting the higher rates of unemployment in the region served by the concession, and the offer of alternative modes of transport to the population of the capital of Rio de Janeiro.

- CCR Metrô Bahia: the improvement in the intensity of emissions is explained by the expansion of lines 1 and 2. Over the last year, the number of passengers tripled and the extension of the network increased from 28.3 km to 40.7 km, bringing the emissions rate to a new level of performance.

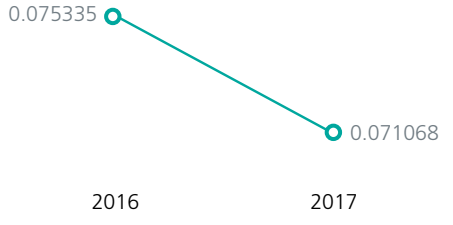


- ViaQuatro: the official opening of new stations in the operational segment of the concession brought about an increase in the concession's GHG emissions, but without affecting the distance covered by the trains. Consequently, the rate recorded an increase of 32% in the annual comparison.



Airports

Performance is calculated using the indicator of GHG emissions by the number of passengers transported. The 6% increase in the number of passengers at BH Airport and the increase of only 1% in total emissions led to a 6% improvement in the relative indicator.



**The 2015 indicator was not considered, since the scope of that year did not include aircraft movement.*

Credits

General Coordination | CCR Group's Sustainability and Communication Team
Content, design and inphographic | usina82
Photos | CCR collection