Votorantim Cimentos

Life is made to last

2018 INTEGRATED REPORT

THE FRUIT OF OUR ENERGY

Promoting eco-efficiency through innovative practices and solutions is one of Votorantim Cimentos' sustainability commitments. What many see as a problem, we see as potential. This is how we started seeing açaí. This purple fruit of Amazonian origin has conquered the four corners of the world. Served in colored bowls, açaí is a synonym of nutrition, nature and healthy living. What few people know is that approximately 80% of this Brazilian fruit is made up of its pits, which end up being discarded along the production chain that takes açaí from the plant to the consumer's table. These pits used to be sent to landfills or, worse yet, simply left to rot in the environment. In the state of Pará alone, 550,000 tons of açaí pits are generated every year.

When Votorantim Cimentos started the construction of its plant in the city of Primavera, in the countryside of Pará, in the northern region of Brazil, it already had the intention to use what was previously seen as waste as a local raw material in its production process. To accomplish that, we invested in research and development, and conducted a series of tests until we found a solution. Communities, small farmers and suppliers in the region collect the açaí pits that would otherwise be discarded. After going through a drying process, the pits arrive at our plant to replace part of the petroleum coke, the fuel used in our cement kilns.

The co-processing process implemented by Votorantim Cimentos results in a series of social, economic and environmental benefits, such as reduction of CO_2 emissions, local job creation, income generation, and inclusion of local communities in the state of Pará. This new cycle of sustainable development is illustrated on the front cover of this Integrated Report by Rayssa Da Silva, employee of our plant and Primavera resident, together with Sidimar Nazareth Sousa, from the Castanhal (PA) community, from where we purchase açaí pits.

Using alternative materials to replace fossil fuels, including other biomass and municipal and industrial waste, has been a consistent practice by Votorantim Cimentos for almost 30 years. In addition to creating a more sustainable process, we generate positive impact in the communities where we operate, while still maintaining the same quality of our cement. And this is how—by thinking and acting differently—we move forward, striving to build a better world for everyone.

COVER: PRIMAVERA PLANT

Plant in Primavera, Pará (Brazil)

Votorantim Cimentos

Life is made to last

Plant in Primavera, Pará (Brazil)

ABOUT THIS REPORT **5**

- **MATERIALITY** **6**
- **A MESSAGE FROM THE BOARD** **8**
- **A MESSAGE FROM THE CEO** **10**
- **VOTORANTIM CIMENTOS** **12**
- **2018 HIGHLIGHTS** **18**
- **STRATEGY AND MANAGEMENT** **20**
- **CORPORATE GOVERNANCE** **24**

Agility in Decision Making 24
Risk Management 27
Compliance Culture 28
Open Channels 29

- **FINANCIAL MANAGEMENT** 30

Executing Our Strategy With Excellence 30
Continuous Cost Optimization 33
New Investment Cycle 34
Adding Value with Diversification 35

- **OPERATIONAL EXCELLENCE** **36**

Commitment to Efficiency 36
AFR Assures Competitiveness 37
Fine-Tuned Logistics 39
Our Innovation Ecosystem 40
Steps to a Sustainable Industry 43

- **CUSTOMER FOCUS** **44**

Building Lasting Relationships 44
Perfect Partnership 46

- **EMPOWERED PEOPLE** **48**

Diverse and Multicultural Team 48
Valuing our Talent 51
Collaborative Communication 52

- **SUSTAINABLE PRACTICES** **56**

Permanent Alignment 56
Safety as a Value 59
Lower Emissions and Higher Energy Efficiency 61
Preserving Biodiversity 64
Monitoring and Measuring Water 65
Perpetuating our Legacy in the Communities 68

EXTERNAL READERS **74**
MATERIAL THEMES CORRELATION **76**
EXTERNAL INITIATIVES **77**
PERFORMANCE TABLE **79**
GRI CONTENT INDEX **91**
GCCA CHARTER **98**
ASSURANCE LETTER **101**
CORPORATE INFORMATION **103**

TRANSPARENCY AND FOCUS

GRI 102-46

Our 2018 Integrated Report presents our Sustainability Commitments and the key topics from the perspective of our business and the perceptions of our main stakeholders. We demonstrate how we manage the themes that integrate our strategy and the main advances, challenges, risks, impacts and opportunities in the sustainability (economic, social and governance) dimension, with an ongoing commitment to transparency and information balance.

We used the guidelines of the International Integrated Reporting Council (IIRC) and the Standards of the Global Reporting Initiative (GRI) to prepare our report. The content also addresses the principles of the Global Compact, the Sustainable Development Goals (SDGs) and the guidelines of the Cement Sustainability Initiative (CSI) and the Global Cement and Concrete Association (GCCA), both linked to the World Business Council for Sustainable Development (WBCSD).

The financial information have been prepared and are being presented in accordance with accounting practices adopted in Brazil, including the pronouncements issued by the Brazilian Accounting Pronouncements Committee ("CPC"), as well as according to the International Financial Reporting Standards ("IFRS") issued by the International Accounting Standards Board ("IASB") and the International Financial Reporting Interpretations Committee ("IFRIC") interpretations. It refers to the companies that are consolidated in our results and can be accessed on VC's global website **(click here)**. Socioenvironmental information follows the guidelines of the CSI and meets standards and quality certifications. The data covers the period between January 1 and December 31, 2018. GRI 102-50

This report is an annual publication and its previous edition was published in April 2018. The information related to the GRI Standards is part of our day-to-day management and was assured by Bureau Veritas. For the Materiality Disclosures Service, GRI Services reviewed that the GRI content index is clearly presented and the references for Disclosures 102-40 to 102-49 align with appropriate sections in the body of the report. GRI 102-51 GRI 102-52 GRI 102-56

Questions about this document or about Votorantim Cimentos, comments and suggestions that may improve our reporting process, can be directed to **ri@vcimentos.com** GRI 102-53

MATERIALITY GRI 102-42 GRI 102-43 GRI 102-46

We worked on our materiality process between 2018 and 2019, in order to identify the most important material themes for Votorantim Cimentos. This initiative supports our sustainability strategy and the selection and management of the GRI (Global Reporting Initiative) Standards included in this report. We reviewed our material themes in a process involving different stakeholder interviews, following GRI requirements. The listed themes were generated based on the following sources of information:

- Analysis of internal and sectoral documents;
- Face-to-face interviews with the Company's top leadership;
- External interviews: in person, by phone and by e-mail, with several stakeholders considered relevant (investors, communities, clients, consumers, financial institutions, suppliers, transporters and NGOs).
- Online survey with employees and external stakeholders in all regions where we operate (Brazil, North America, South America and Europe/Asia/Africa). In all, we listened to 263 interest group representatives – 164 internal (employees) and 99 external (investors, communities, clients, consumers, financial institutions, suppliers, transporters and NGOs). The results were consolidated and validated by the Company's senior management.

2018 MATERIAL THEMES GRI 102-44 GRI 102-47

Themes ordered according to their relevance in the stakeholder evaluations and decisions, and the importance of the economic, environmental and social impacts of Votorantim Cimentos

IIRC Capitals

- Human capital
- Intellectual and Manufactured-goods capital
- Social and Relationship capital
- Natural capital
- Financial capital

SDGs[1]

Each number corresponds to the respective SDG

1 = 1 NO POVERTY

Healthy and Safe Working Conditions	3, 8
Customer Relationship and Satisfaction	9, 12
Research and Innovation	9, 12, 17
Human Capital Development	4, 10, 17
Ethics and Business Integrity	16
Climate Change and GHG Reductions	11, 12, 13
Regulation and Compliance	16

[1]SDGs:

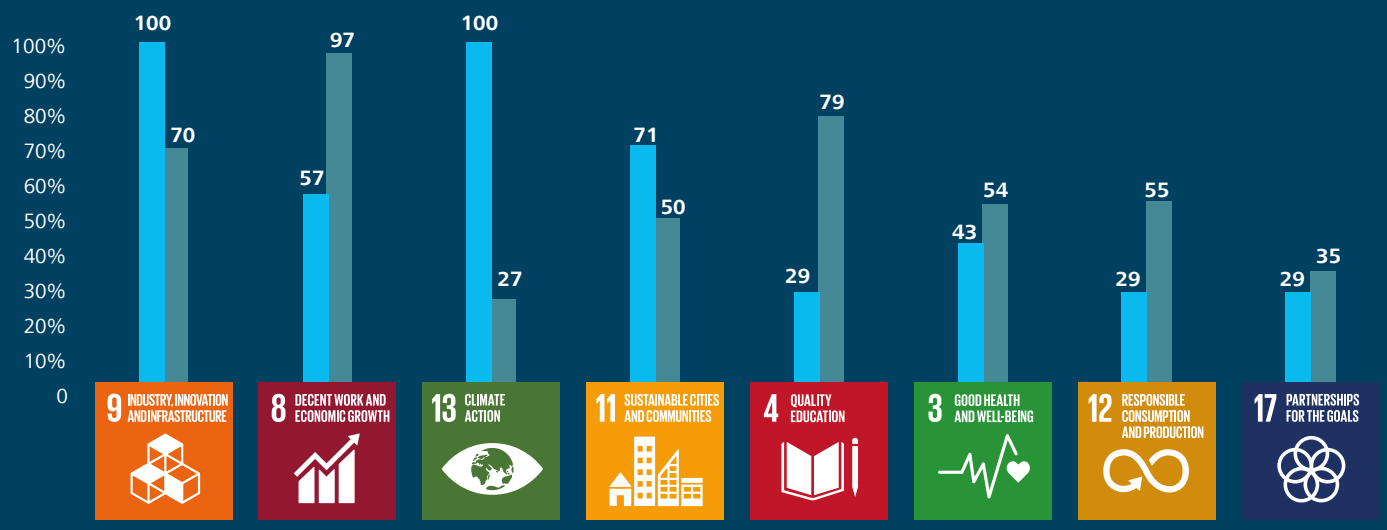
MATERIALITY GRI 102-43 GRI 102-44 GRI 102-46

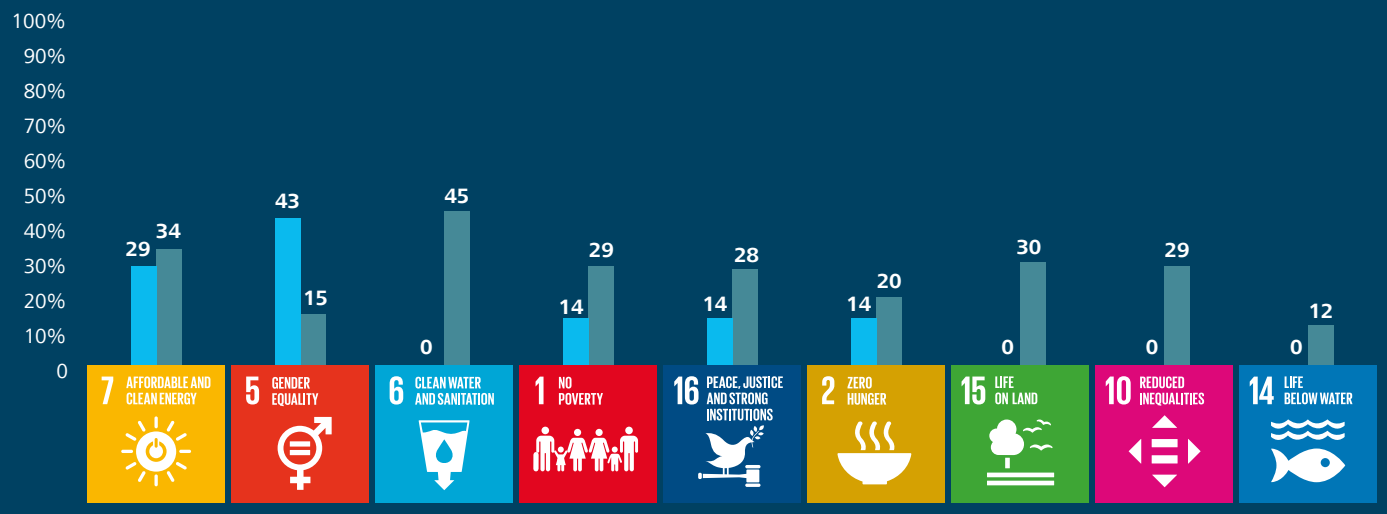
SDGS ADDRESSED TO OUR MATERIAL THEMES

We aligned the material themes we identified with the Sustainable Development Goals (SDGs), a global agenda adopted at the UN Summit on Sustainable Development in September 2015, consisting of 17 goals and 169 targets to be achieved by 2030. Our intention is to contribute on achieving the SDGs by making our assets available to generate value to society. In addition to good corporate citizenship, integrating the SDGs into our activities is a strategic positioning necessary for the future success of our business. The matrix below demonstrates which material themes are related to each goal.

SDGS THAT VOTORANTIM CIMENTOS CAN CONTRIBUTE TO

Online survey with stakeholders ■ Internal ■ External





REINFORCING OUR PURPOSE

GRI 102-14

In 2018, we, at Votorantim Cimentos, continued our journey focused on long-term growth. Our commitment to excellence in products, services and processes resulted in success stories with our customers.

Our strategic dialogue process confirmed the importance of our purpose, "Life is made to last", and our strategic drivers: maximize value creation, strengthen our presence in the Brazilian market, develop diversified products and services, and internationalize.

We concentrated our investments on initiatives aligned with our strategic drivers. Capacity expansion in our international cement operations, product and service diversification, thermal substitution and implementation of technologies are the most important initiatives to improve our efficiency and competitiveness.

We expanded the capacity of our Charlevoix unit, in the United States, by nearly 600,000 tons, reinforcing our presence in the Great Lakes region, and installed a 200,000-ton line of calcined clay in Olavarría, Argentina. In Brazil, we are increasing the agricultural lime capacity of our Nobres (MT) plant by 700,000 tons and also installing a new mortar line in Cuiabá (MT). We also acquired a port terminal in Manaus (AM) that expands our access to the Northern Region of Brazil. Both the Nobres expansion and the Cuiabá new line will have their start-ups in 2019.

Projects in the use of alternative fuels (Alternative Fuel and Raw Materials, or AFR) are eco-efficiency initiatives that have enabled us to increase the substitution of petroleum coke by renewable energy sources, resulting in both cost reduction and lower carbon emissions. They also reflect our commitment to foster a circular economy and, as a result, reduce our environmental footprint and the impacts of our production process. We also focused on investments in technology and innovative practices that support our commitment to operational excellence, aligning with meaningful and agile digital transformation movements and fostering an ecosystem of innovation that will enable us to build the future we envision.

Our 2018 results demonstrate our ability to make confident decisions at the right time and in the right way, transforming opportunities into business

At the same time, we reaffirmed our commitment to operate in markets in which we are relevant players and that offer greater potential for value creation. In this regard, we decided to divest in Cementos Portland, in Peru, through the sale of our corporate interest in the Company, and signed an agreement for the sale of Shree Digvijay Cement Company in India. The transaction is expected to be completed in the second quarter of 2019.

In early 2019, our shareholder, Votorantim S.A. (VSA) made a capital contribution of R$ 2 billion, which demonstrates their confidence in our strategy and in our business prospects, enabling us to accelerate the deleveraging process and optimize our capital structure. The funds were used for prepayment of debt and contributed to a reduction of our pro-forma leverage ratio to 2.8x, reaching levels comparable to investment grade metrics. When added to the contributions made in 2016 and 2017, VSA has invested R$ 4.7 billion in Votorantim Cimentos.

Another highlight was the creation, in October 2018, of Votorantim Cimentos International (VCI), which now consolidates all company investments outside of Brazil. Based in Luxembourg, the company aims to facilitate the continued international expansion of Votorantim Cimentos, in addition to enabling even more efficient capital management.

Throughout the 100-year history of the Votorantim Group, celebrated in 2018, Votorantim Cimentos has been a pioneer at several important times, such as with the group's internationalization, with our first operations in North America starting in 2001. Therefore, we celebrated the 100-year anniversary with all our colleagues in the 12 countries where we are present. In Brazil, our special contribution to the 100-year celebration was to actively participate in the challenge of bringing the Partnership for the Enhancement of Education (PVE, for its initials in Portuguese), a program that aims to contribute to the improvement of public education, for 25 of the 104 Brazilian municipalities where the PVE was implemented. We also celebrated the 50 year anniversary of two important business units: the Brazilian Engemix and the St Marys' Bowmanville plant, located in Ontario, Canada.

We continued to refine our governance processes with a series of initiatives to further improve internal controls and compliance, enhanced by intensive training on our Code of Conduct. We understand that compliance is a never-ending journey to further embed in our culture the right way of doing things. Our 2018 results demonstrate this truth: we are equipped to make confident decisions at the right moment and in the right way, to transform opportunities into business success and to create positive impact and value in the regions where we work and for all of our stakeholders.

In late 2018, we announced to the market that, after more than five years as the head of the company, Walter Dissinger, Global CEO, communicated his desire to pursue new challenges. To succeed him, the Board of Directors appointed Marcelo Castelli, an executive who began his history in the Votorantim Group in 1997 and held various executive positions before becoming CEO of Fibria in 2011. Castelli will lead the company, continuing its growth trajectory. To Walter, we offer our true appreciation for his dedication to the company for the past few years.

Board of Directors

A JOURNEY OF SUSTAINABLE VALUE

GRI 102-14

Our focus on operational excellence and innovation enabled us to address a challenging business environment and achieve substantial performance improvement in 2018. Many projects initiated in recent years have produced positive impacts, showing that we are a company in which short-term results contribute to our long-term commitment.

In these projects, we integrated our central objective of creating value with our commitment to sustainability. Thermal replacement initiatives are an example: by using alternatives to fossil fuels (pet coke) we, at the same time, optimize production costs, reduce our environmental footprint and generate value for the company and for society.

In this context, we advanced the co-processing of açaí and babassu coconut pits, which involved intense work with communities in the North and Northeast of Brazil, and of Refuse-Derived Fuel (RDF). The increase in AFR (Alternative Fuel and Raw Materials) projects enabled us to close 2018 with a thermal substitution index of 18.5%, compared to 14.6% last year.

We also grew our business for products in addition to cement. We are expanding the agricultural lime capacity in our Nobres plant (Mato Grosso, Brazil) by 700,000 tons, reaching 1.0 million tons. As a result, we will be able to increase our sales of agricultural inputs, contributing to an increase in rural productivity. In addition, we are installing a new line of mortar production in Cuiabá, Brazil.

We proved that we can create new businesses through a start-up philosophy. Together with Gerdau and Tigre, we incorporated Juntos Somos Mais, a loyalty and services company in the construction materials retail segment, creating an ecosystem that will contribute to change the Brazilian retail market. Our strategy prioritizes our customers' needs and relationships based on good experiences and contributes to the modernization and professionalization of the retail segment.

Operational excellence, financial discipline, geographic and product diversification, customer focus and the commitment of our people are the foundation of our solid performance for the year

As a result of operational excellence, financial discipline and geographic and product diversification, we finished the year with a positive result, with net revenue of R$ 12.6 billion, a 15% variation over 2017, and consolidated adjusted EBITDA of R$ 2.6 million, compared to R$ 1.7 million in the previous year. In Brazil, our main market, our customer-focus strategy and differentiated products and services contributed to sales growth, compared to an average decline in the sector. Another relevant fact that impacted positively our results in Brazil was the process of redefinition of the Brazilian Cement Technical Standards, which allowed a lower use of clinker per ton of cement (thus resulting in lower CO_2 footprint).

Also significant, was the capital contribution of R$ 2 billion from our holding company, Votorantim S.A., in January 2019, resulting in the reduction of our leverage to 2.8x net debt to EBITDA on a pro-forma basis.

Our strategy of investing in geographic diversification, coupled with financial discipline and operational excellence, contributed to reducing the impact of a global increase in fuel and electricity prices, our main cost components. These drivers helped us face high exchange rate variations and a decrease in cement consumption in some of our markets, such as Argentina, Brazil and Turkey.

We reaffirmed our continuing ability to adjust our geographic portfolio by selling our businesses in Peru and India, markets that were not aligned with our growth strategy. On the other hand, we concluded the expansion of our plant in Charlevoix, in the United States, and the construction of a new line of calcined clay in Olavarría, Argentina. At the same time, we acquired a terminal in Manaus that extends our access to the Northern region of Brazil.

After a cycle of investments in our global capacity, our focus is now on modernization and the introduction of new technologies, especially with Industry 4.0 in mind. We started a new cycle of modernization, automation and digitization in processes that support us with efficiency gains. We are deploying, for example, Omnichannel, our new Customer Relationship Management platform. We also adopted VC Maps, a digital solution to more efficiently manage our land and quarries that was developed by a startup during the first cycle of our Open Innovation program, and Spectrum, a project for monitoring assets in the maintenance area.

Our solid performance reflects the commitment of our team. To advance in people management, we have put great emphasis on diversity, founded on our respect for the different skills, experiences and characteristics that make us unique. We completely changed our way of hiring trainees, not restricting selection based on college and age, aiming to attract different types of talent to make up a creative and innovative company.

Another permanent goal is to be an accident-free company, in which everyone can return to their homes every day without injuries. To reinforce this commitment, we started in Brazil the SafeStart program for behavioral development and worked to achieve safety levels that can become global benchmarks.

We mobilized our people around the Corporate Volunteer Program, a way to extend our social responsibility around initiatives related to the Sustainable Development Goals (SDGs). And we made one of the largest social investments of our history in Education, taking the Partnership for the Enhancement of Education (PVE, for its initials in Portuguese) to 25 Brazilian towns, with the objective of contributing to the improvement of education in a structured way.

At the beginning of 2019, I ended my journey at Votorantim Cimentos, pleased to leave a legacy of globalization and innovation. The decision to launch myself into new challenges was not an easy one. From the very first moment that I expressed my decision to the Board of Directors, I was treated with the utmost respect, which reinforces my gratitude and the certainty of how much the group genuinely cares about people. That is why we have decided, by mutual agreement, on my departure.

Allow me to conclude by thanking the entire Votorantim Cimentos team for their support and partnership over the last few years. To Marcelo Castelli, the company's new CEO, who will lead the company's ongoing journey of success and creation of sustainable value, my best wishes for continued success.

Walter Dissinger
CEO of Votorantim Cimentos

GLOBAL PRESENCE

We are a global company in the building materials industry, with a presence in four continents. Founded in 1933, Votorantim Cimentos S.A. is privately held, 100% owned by Votorantim S.A., one of the largest holding companies in Brazil—with businesses in strategic and diversified sectors: construction materials, mining, aluminum, long steel, energy, orange juice and finance—which celebrated its 100th anniversary in 2018.

GRI 102-1 GRI 102-5

Plant in Sobradinho, Distrito Federal (Brazil)

We have a team formed by cultural diversity in the 12 countries where we are present: Argentina, Bolivia, Brazil and Uruguay (South America); Canada and United States (North America); Luxembourg and Spain (Europe); Turkey (Europe/Asia); India (Asia); and Morocco and Tunisia (Africa). We ended 2018 with 11,932 employees, 264 industrial units, installed capacity of 53.4 million tons, production of 31.1 million tons of cement and net revenue of R$ 12.6 billion. GRI 102-7

As part of our internationalization strategy, VC and its subsidiaries undertook a corporate reorganization, which included the establishment in October 2018, of a new company, named Votorantim Cimentos International (VCI), which will concentrate all investments outside of Brazil. Based in Luxembourg, VCI aims to support the continued international expansion of Votorantim Cimentos, in addition to enabling even more efficient capital management. GRI 102-4 GRI 102-10

Our strategy is to focus on strategic markets in the regions with the most opportunity to create value for Votorantim Cimentos. This plan was illustrated by the purchase of a port terminal in Manaus, Brazil, which gives us access to the Northern region. In addition to the foregoing, the sale of the 50% stake in Peru's Cementos Portland S.A. was concluded in October. In November, we agreed to transfer our 75% stake in Shree Digvijay Cement Company Ltd. to a private fund based in Mumbai. We expect that the transaction will be completed—with change of control of the company—in the second quarter of 2019. GRI 102-10

Although we left these markets, our cement production capacity increased by approximately 600,000 tons with the expansion of our Charlevoix unit in the United States, and almost 200,000 tons from Olavarría, Argentina. In 2019, we will have an increase of around 700,000 tons with the conclusion of a new production line in San Luis, Argentina, with start-up scheduled for November. GRI 102-7

We invest in our product portfolio—made up of cement, concrete, aggregates, mortars, grouts, plasticizers and agricultural inputs—but also look beyond and continue to invest to offer new high-value services and innovative products in these segments. In concrete, we celebrated the 50th anniversary of Engemix, which has become a benchmark in the industry. For our Brazilian customers, we launched **Juntos Somos Mais**, a loyalty program that was transformed into a new business through a partnership with Gerdau and Tigre. The creation of this new ecosystem aims to contribute to the development and modernization of retail construction in Brazil.

To foster value creation and competitiveness, we have improved and expanded the co-processing of industrial waste, municipal waste and biomass as alternative sources to the use of fossil fuels in cement manufacturing. Since 2016, we have maintained an area dedicated to identifying more opportunities for the use of these sources (AFR: Alternative Fuels and Raw materials) and invested more than R$ 85 million globally in projects related to co-processing. In 2018, these renewable fuels accounted for 18.5% of thermal substitution. GRI 102-6

WE ENDED 2018 WITH
11,932
EMPLOYEES

OUR CEMENT PRODUCTION CAPACITY INCREASED BY
600,000 TONS
WITH THE EXPANSION OF OUR CHARLEVOIX UNIT IN THE UNITED STATES, AND
200,000 TONS
FROM OLAVARRÍA, ARGENTINA

JUNTOS SOMOS+

The history of Votorantim and Votorantim Cimentos can be accessed at **www.votorantim.com** and **www.votorantimcimentos.com**, respectively.

GLOBAL COMPANY

GRI 102-2 GRI 102-4

We are present in 12 countries with very different economic dynamics: Argentina, Bolivia, Brazil, Canada, India, Luxembourg, Morocco, Spain, Tunisia, Turkey, United States, and Uruguay.

VOTORANTIM CIMENTOS INTERNATIONAL (VCI)

Luxembourg

VOTORANTIM CIMENTOS NORTH AMERICA (VCNA)

United States and Canada (Great Lakes)

- St Marys Cement
- CBM
- Prairie Material

Spain

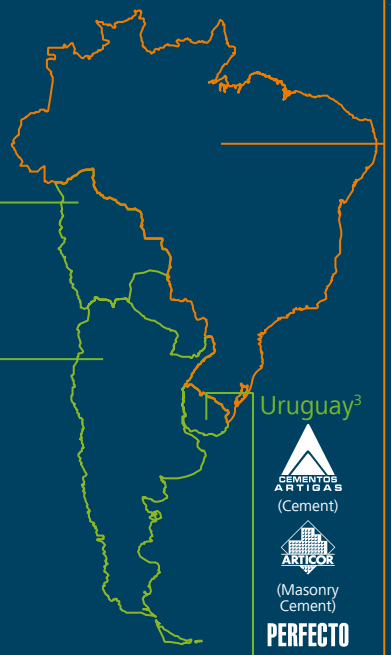
- Cemento Cosmos
- Cemento Teide
- Prebetong Hormigones
- Prebetong Áridos
- Pulmor

Morocco

- Asment Temara
- Grabemaro

VOTORANTIM CIMENTOS BRAZIL (VCBR)

VOTORANTIM CIMENTOS LATIN AMERICA (VCLATAM)



Bolivia[2]

- Itacamba Cemento S.A.

Argentina[1]

- Cementos Avellaneda (Cement)
- Hidralit (Masonry Cement)
- Cal Hidrat Extra (Mortar and Adhesive)
- Perfecto (Mortar and Adhesive)

Uruguay[3]

- Cementos Artigas (Cement)
- Articor (Masonry Cement)
- Perfecto (Mortar)

Brazil

Other Products:

- votomassa (Adhesive Mortar and Grout)
- Matrix (Basic Mortar)
- Engemix
- Argamassa Estabilizada (Concrete, Stabilized Mortar)
- Cal Hidratada Itaú
- Cal de Pintura Itaú
- Cal Fertil (Limes)
- Calcário Itaú (Agricultural Inputs)
- Liga para Massa Itaú (Plasticizer)

Portland Cement:

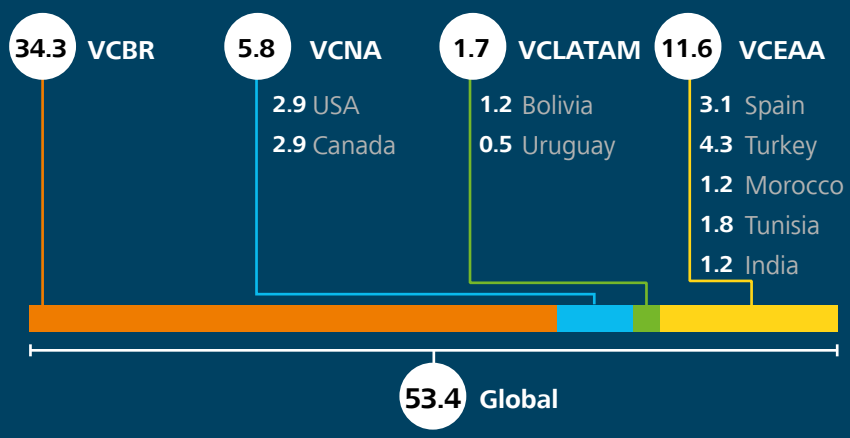
- Cimento Votoran
- Cimento Poty
- Cimento Itaú
- Cimento Tocantins (Basic Constructions, Special Constructions, Structural Constructions, All Constructions)

1 Argentina: 49% stake in Cementos Avellaneda.
2 Bolivia: 51% stake in Yacuses, which has a 66.7% stake in Itacamba Cementos S.A.
3 Uruguay: 51% stake in Cementos Artigas.

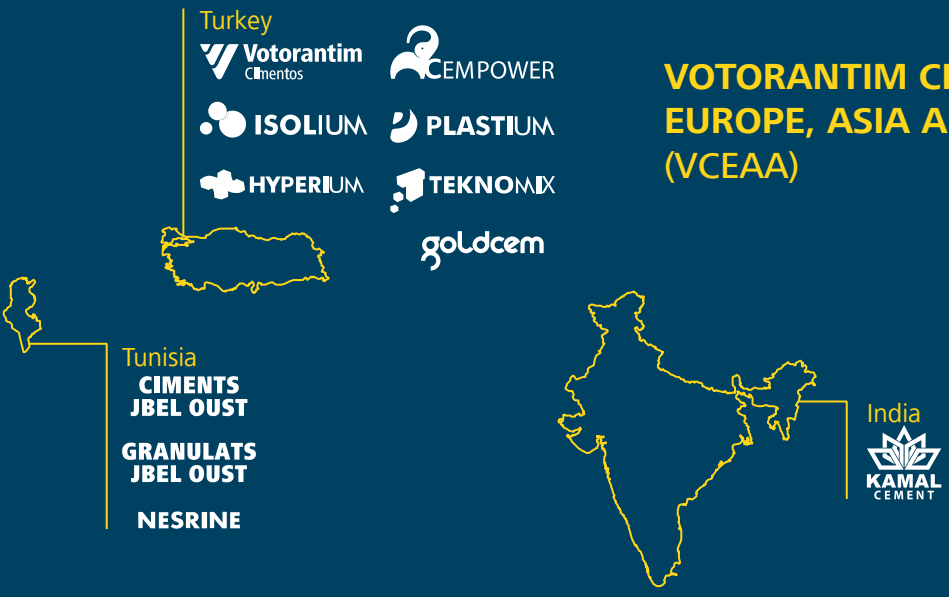
INSTALLED CAPACITY

in million tons

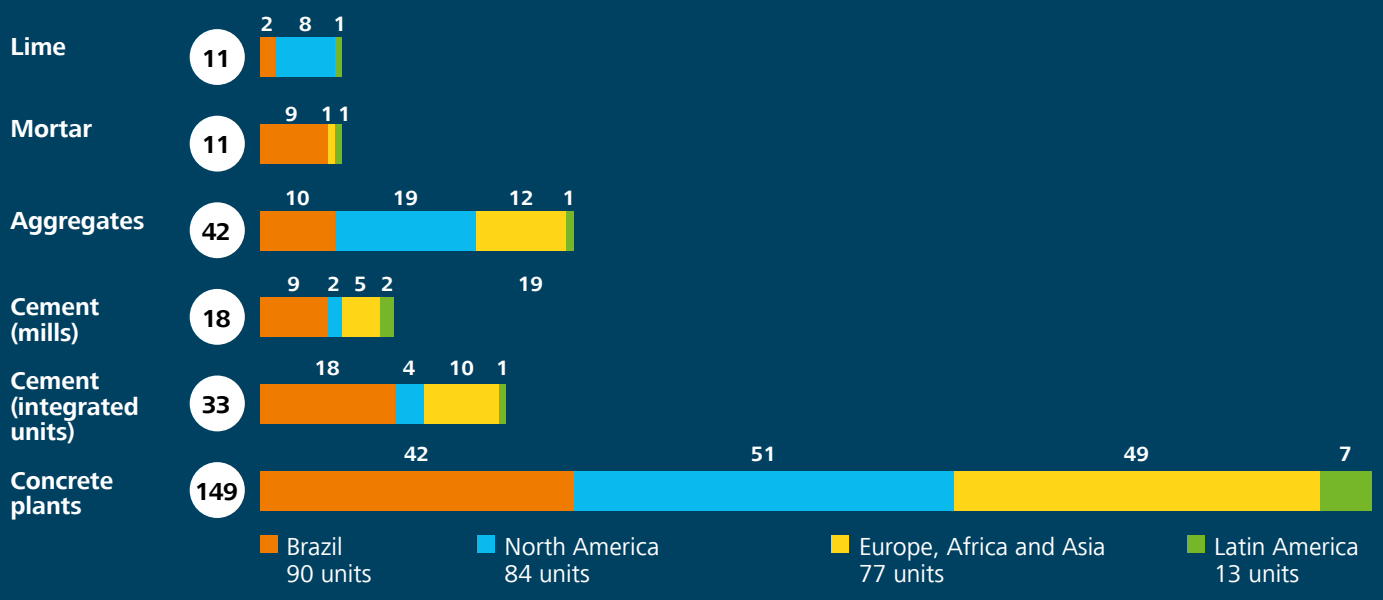
(All countries consolidated, except Argentina. December 2018 base)



VOTORANTIM CIMENTOS EUROPE, ASIA AND AFRICA (VCEAA)



Our Facilities



HALF A CENTURY OF VALUE

In 2018, we celebrated the 50th anniversary of two important business units: the Brazilian Engemix and the St Marys' Bowmanville plant in Ontario, Canada.

ENGEMIX – Founded in 1968, the company was acquired by Votorantim Cimentos in 2002. Engemix is a benchmark in concrete quality, with more than 40 plants strategically located around Brazil. Throughout its history, it has been a part of major construction projects in Brazil, such as Guarulhos Airport and Estaiada Bridge, both in São Paulo (SP); the Grêmio Arena, in Porto Alegre (RS); the Wind Farm, in Aracati (CE); the Olympic Park, in Rio de Janeiro (RJ); and the Pernambuco Arena, in Recife (PE). Engemix celebrated its 50th anniversary on October 1 by reaffirming its innovative attitude and investments in technology, to offer differentiated products and services and customized solutions to customers. In 2018, for example, it launched Engemix Online, a logistics app dubbed the "Uber of Concrete", which enables customers to track delivery trucks and receive reports with accurate indicators for results management.

ST MARYS – On September 18, the St Marys Cement plant in Bowmanville, Ontario, celebrated its 50-year anniversary with employee and public events and support for causes that are important to the community. Founded in 1912, St Marys Cement was acquired by Votorantim Cimentos in 2001, becoming part of VCNA.

AWARDS

GLOBAL

Best evaluation by CDP – In early 2019, our climate change management received an A- grade by CDP (Carbon Disclosure Project), the best evaluation among 63 cement companies in the world. The organization maintains the most comprehensive environmental database, which, for more than 15 years, has supported the decisions of a network of investors valued at over US$ 100 trillion.

Integrated Report – Our 2017 Integrated Report was recognized by the World Business Council for Sustainable Development (WBCSD) as the best report in the construction materials industry and in Latin America, and the fourth best in the world. In all, 158 reports were evaluated based on targets and commitments, strategy, performance, report navigation, design, conciseness and completeness.

BRAZIL

100+ Innovative in IT use – Recognition in the Engineering and Construction Industry category granted by IT Mídia, in partnership with PwC. The award highlights the contribution of technology to innovative solutions in companies.

Anamaco Awards – We received two awards in the 27th Anamaco Awards, the most important recognition in the building materials industry in Brazil: first place in the Cement category and second place in the Mortar category.

Tocantins Environmental Awards – The Votorantim Cimentos plant in the town of Xambioá received the Environmental Responsibility Trophy, as part of the 2018 Environmental Merit Awards of Tocantins. Aimed at companies, universities and non-governmental organizations, this state government award honors initiatives for the preservation and defense of the environment.

Executivo de Valor ("Executive of the Year") – For the fourth consecutive year, CEO Walter Dissinger was named Executive of the Year in the Construction sector, in a recognition by Valor Econômico newspaper. The award honors the best company leaders in Brazil, as chosen by the most renowned executive search firms in the country.

Corporate Transparency – We led the "Transparency in Corporate Reports" ranking by Transparency International, which evaluates the 100 largest companies and the 10 largest banks in Brazil. Conducted for the first time, the study evaluates the level of corporate transparency of companies on three aspects: the way they disclose information about their anticorruption practices, organizational structure, and financial data related to performance in other countries.

NORTH AMERICA

Energy Management National Award (Canada) – Our St Marys Cement Bowmanville unit in Ontario was recognized by National Resources Canada (NRC) for significant energy savings and availability to share its experiences and systems. The NRC is a government organization that promotes the responsible use of the country's natural resources.

Ontario Stone Sand & Gravel Association Awards – Our Canada Building Materials (CBM) Aggregates division received seven awards from the association, four for progressive rehabilitation and three for community relations, in recognition of the businesses' commitment to sustainability.

Cornerstone Certification – Our CBM Codrington mining operation was certified by the Cornerstone Standards Council, Ontario (Canada), for responsible extraction of aggregates, meeting the highest environmental and social standards.

Health and Safety – The Infrastructure Health and Safety Association recognized the St Marys CBM Ready Mix division for their low lost-time injuries rate, staying below the global Workplace Safety & Insurance Board (WSIB) rate for three consecutive years.

Aggregates Producers Association – VCNA's Prairie Material Aggregates division earned awards in the safety, environment and community relations categories during the organization's annual convention in Illinois (USA).

EUROPE, ASIA AND AFRICA

Sustainable Development/Spain – VCEAA received three awards from the Spanish Aggregates Association: first place in the Restoration category (Cova El Toril project, in Seville), first place in the Economic Contribution and Added Value to Society category (for the reactivation of the Oural cement unit and the quarry in Triacastela, and the recovery of Cova Eirós), and second place in Biodiversity, for the regeneration of the El Zairón gravel pit (Seville).

"Company of the Year" in Prevention – The 2018 Prevention Award was presented to VCEAA for its work and effort in preventing occupational risks and in promoting health and well-being. One of the highlights was the "0+ Project – in safety, 0 is the only thing that counts".

"Mi empresa es saludable" – VCEAA received an award in the Emotional Well-being category, a recognition to companies that place employee health as a strategic priority.

Contribution to the environment – The Sivas unit, in Turkey, was recognized by the Environmental Board of Sivas for its environmental contribution and social responsibility projects, such as tree planting, quarry rehabilitation, landscaping and facility layout.

2018 Gold Awards – VCEAA's India unit received two top awards in 2018: environmental performance, by the Greentech Foundation, and health and safety, by Apex India.

2018 HIGHLIGHTS

FINANCIAL CAPITAL

R$12.6 billion
net revenue

R$2.6 billion
adjusted EBITDA

R$7.2 billion
added value

Sale of stakes in Peru and India to focus on markets with higher value generation

Purchase of Manaus Terminal, which provides access to more markets in the Northern Region, in Brazil

Creation of Juntos Somos Mais, a company in partnership with Gerdau and Tigre, with initiatives to support training and the modernization of the retail construction sector in Brazil

MANUFACTURED CAPITAL

800,000 tons
of new capacity that went into operation in the United States and Argentina

R$1.1 billion
Capex

Creation of Votorantim Cimentos International in Luxembourg to concentrate investments outside Brazil

2.8x
Pro-forma Leverage

R$62.6 million
savings in operational costs with ZBB

30.9 million
tons of cement sold

HUMAN CAPITAL

81% of open positions filled by internal candidates

Average of **20 hours** of training per employee

R$ 13.7 million invested in social initiatives, with a focus on community development

NATURAL CAPITAL

75.2% clinker/cement factor

18.6% reduction in CO_2 emissions, compared to the base-year (1990)

18.5% of our energy generated through co-processing

SOCIAL CAPITAL

383 initiatives in **64** locations in Brazil, North America, Europe, Asia and Africa

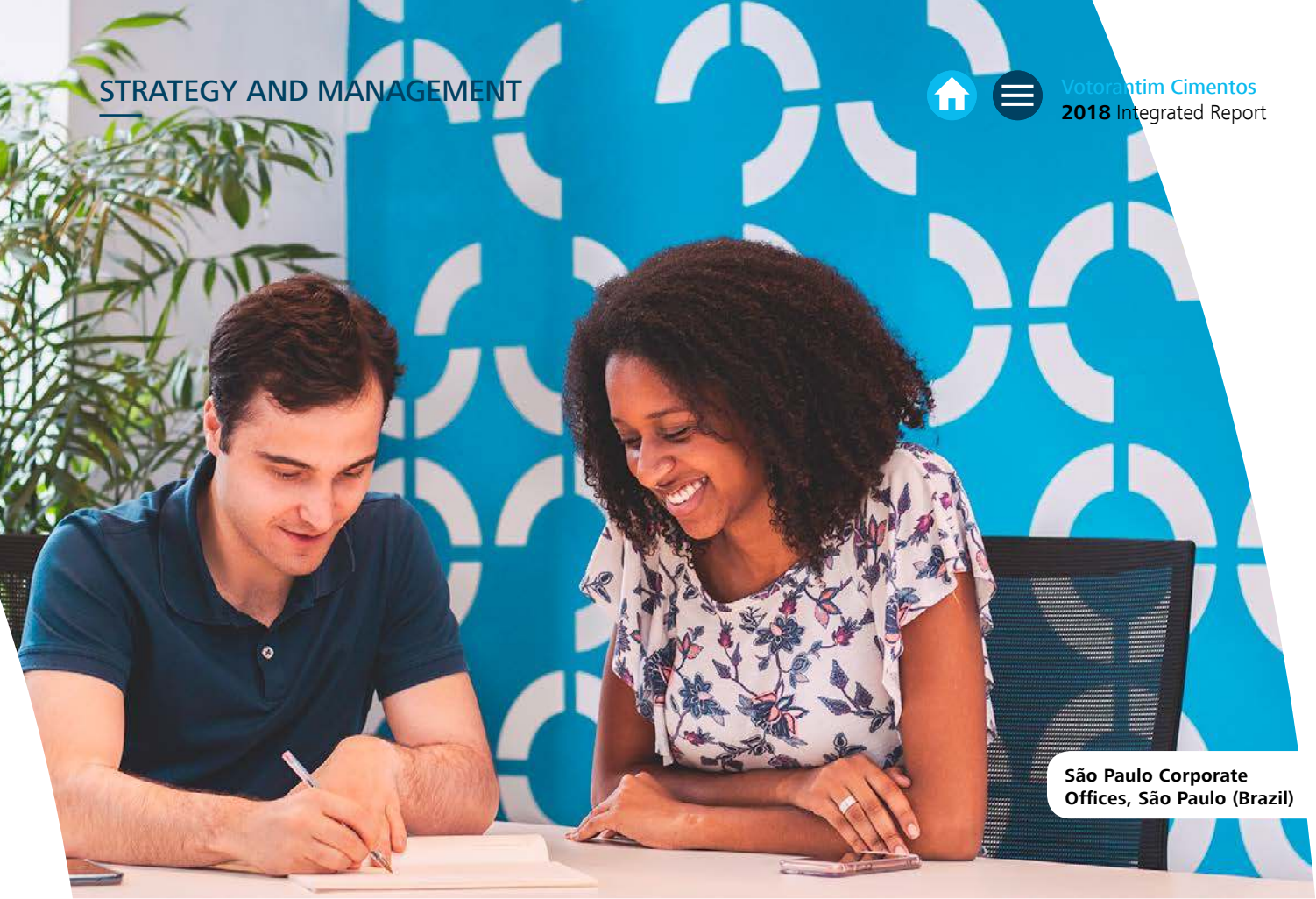
INTELLECTUAL CAPITAL

VC Maps, resulting from the first cycle of our Open Innovation program, monitors our mining and environmental assets

Industry 4.0 technology in the implementation of Spectrum, a maintenance program to monitor the performance of machines online

App Engemix, for customers to buy concrete and track its delivery

New cycle of Open Innovation sought solutions to measure volume and quality at the time of concrete delivery



São Paulo Corporate Offices, São Paulo (Brazil)

OUR LOOK TOWARDS THE FUTURE

Our global strategy is founded on a long-term vision expressed by our purpose: "Life is made to last". It demonstrates our commitment to build lasting relationships and generate value for shareholders, customers, employees and other stakeholders.

Our Vision gives us the path that leads us into the future. The elaboration of our long-term vision is based on the strategic dialogue process, which evaluates market trends, risks and opportunities, and designs our capabilities and differentials.

The pillars of our Vision are Customer Focus, Empowered People, Best-in-Class Operations and Sustainable Practices. They guide our decisions and propel our business forward. Every three years Votorantim Cimentos holds the Strategic Dialogue to open space for debate and refine our long-term vision.

Based on global trends, sustainability will become increasingly relevant; digitization will be a tool to improve internal processes and to broaden our relationships with customers, influencers, and productivity will be mandatory for the construction industry to remain competitive.

Every year we conduct Strategic Planning, which defines our quantitative goals for the following five years as well as guides our annual budget.

GRI 103-2 GRI 103-3

Our Strategic Pillars

Customer Focus

We make decisions based on the needs of our customers.
We have specific business models to serve customers with different purposes and needs.
We strive to ensure that all our initiatives converge to translate into value for our customers.

Empowered People

We value leaders who succeed through their people, creating strong, diversified and engaged teams.
We want people who take the initiative to act and are flexible.
We work together to create solutions and make things happen.

Best-in-Class Operations

We monitor our performance and are committed to continuous improvement.
We make decisions with speed, discipline and consistency.
We maximize productivity in all areas

Sustainable Practices

Safety comes first, always.
We promote eco-efficiency by seeking to develop new products and innovative processes.
We promote open dialogue and relationships with our communities to perpetuate Votorantim Cimentos' legacy and support local development.

LEVERS OF VALUE CREATION

Our Strategic Dialogue confirmed that the four levers of value creation identified during our last strategic cycle will remain the same for the next 10 years. Our 2018 deliverables were evaluated and our targets were updated:

CREATING VALUE FOR THE COMPANY:
We invest in strategic projects to increase the efficiency and sustainability of our operations and products, such as initiatives in co-processing and to reduce the clinker factor in our cements.

DELIVERABLES:
Advances include the benefit of reducing the clinker factor in cement, an increase in thermal substitution through alternative fuel co-processing (AFR) and gains in energy efficiency, as well as the modernization of manufacturing plants with the use of digital tools to improve operational efficiency in the service of our customers and partners. (These results are detailed in Operational Efficiency and Financial Management)

PRODUCTS AND SERVICES:
Cement continues to be our core business, but we believe that portfolio diversification is important to create value with the resources invested in the company. Our goal is to take advantage of related opportunities, while also leveraging our installed capacity by maximizing the use of mine resources and our capacities. We expanded our business of mortars, grouts, agricultural lime and plaster, reinforcing our presence in the construction materials segment, and especially our business in the agricultural inputs segment, a fragmented and regionalized market in which we maintained our leadership. We also launched new mortars and entered the grout segment.

DELIVERABLES:
Among the advances in 2018, which are detailed in Operational Efficiency and Customer Focus, we highlight the expansion of our capacity in agricultural inputs and the increased importance of our aggregates and mortar businesses.

RELEVANCE OF THE BRAZILIAN MARKET:
Our analysis indicates that Brazil will continue to be the most relevant market for the company over the next ten years. In 2018, even in the midst of a macroeconomic crisis, we implemented a series of measures to strengthen our presence in Brazil: we invested in the modernization of plants, in logistics infrastructure and in technology and digitization projects, and we expanded our commercial teams.

DELIVERABLES:
Advances such as the acquisition of the Manaus terminal and operational improvements to increase competitiveness are detailed in Operational Excellence and Customer Focus. We also created the company Juntos Somos Mais together with important partners in the construction industry, reinforcing our proximity to customers, as detailed in Customer Focus, on page 44.

INTERNATIONALIZATION:
Geographic diversification helps us ensure business continuity and value generation. We continue to invest in our operations outside of Brazil, such as the expansion of the Charlevoix (United States) and Olavarría (Argentina) units. In line with our strategy of concentrating operations in the markets in which we have significant participation and growth potential, we sold units and equity interest in India and Peru and created Votorantim Cimentos International (VCI), based in Luxembourg. Following this direction, we remain attentive to opportunities that might result in new acquisitions and further investment in expansions.

DELIVERABLES:
The main results of the year are detailed throughout this report.

BUSINESS MODEL

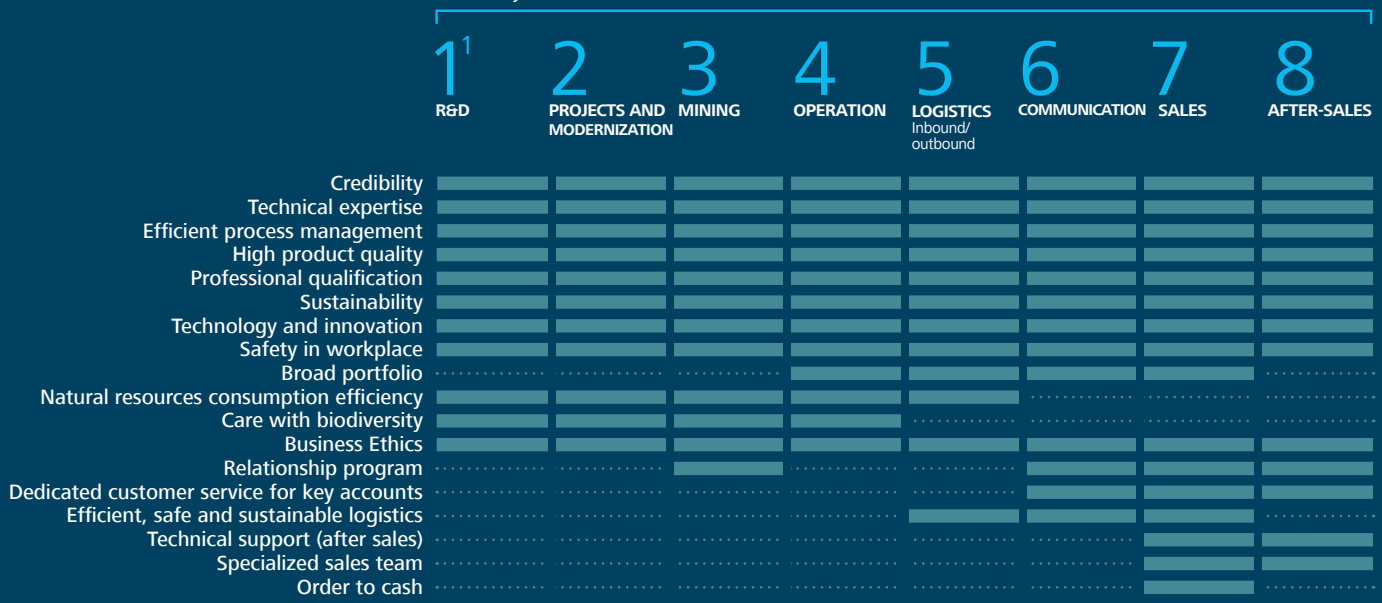
Our commitment to the continuity of our legacy as an organization drives us to chart a path to the future aligned with our purpose, "Life is made to last." We want to build a lasting and sustainable legacy, and therefore, our business model considers trends, risks and opportunities.
Determined to create a positive long-term impact on people and the planet, we encourage the development of sectors and communities focused on creating value for shareholders, customers, employees and other stakeholders.
Our Strategic Planning, reviewed annually, enables constant assessment of our assets to explore value creation opportunities with our broad portfolio of products and services.

VALUE PROPOSITION

The value proposition aims to demonstrate to customers how the product delivers value and resolves their problems. See the table below for the main elements of our value proposition.

KEY ACTIVITIES

MANAGEMENT OF PROJECTS AND INDICATORS
Advocacy



STRATEGIC PARTNERSHIPS AND ALLIANCES

All those who can contribute to the key activities as well as with the supply of Key Resources.

KEY ACTIVITIES

MANAGEMENT OF PROJECTS AND INDICATORS
Advocacy

1[1] R&D
- Universities
- Environmental Institutes
- Trade associations
- Banks
- Suppliers
- Governmental bodies
- Unions

2 PROJECTS AND MODERNIZATION
- Suppliers
- Independent contractors
- Banks
- Government
- Equipment Suppliers
- Community/ social license

3 MINING
- Carriers and selfemployed drivers
- Trade associations
- Environmental Institutes
- Government
- Equipment suppliers
- Army (explosives)

4 OPERATION
- Suppliers
- Independent contractors
- Trade associations
- Vocational training schools
- Suppliers of equipment, alternative fuels and cementitious materials
- Unions

5 LOGISTICS Inbound/outbound
- Carriers and selfemployed drivers
- Trade associations
- Equipment suppliers

6 COMMUNICATION
- Opinion makers/ influencers
- Customers/ promoters
- Newspapers, magazines, TV and websites

7 SALES
- Government
- Customers
- Key accounts (Major construction companies and Home centers

8 AFTER-SALES
- Technical laboratories

1 Research activity includes geological research, market research and Research and Development (R&D)

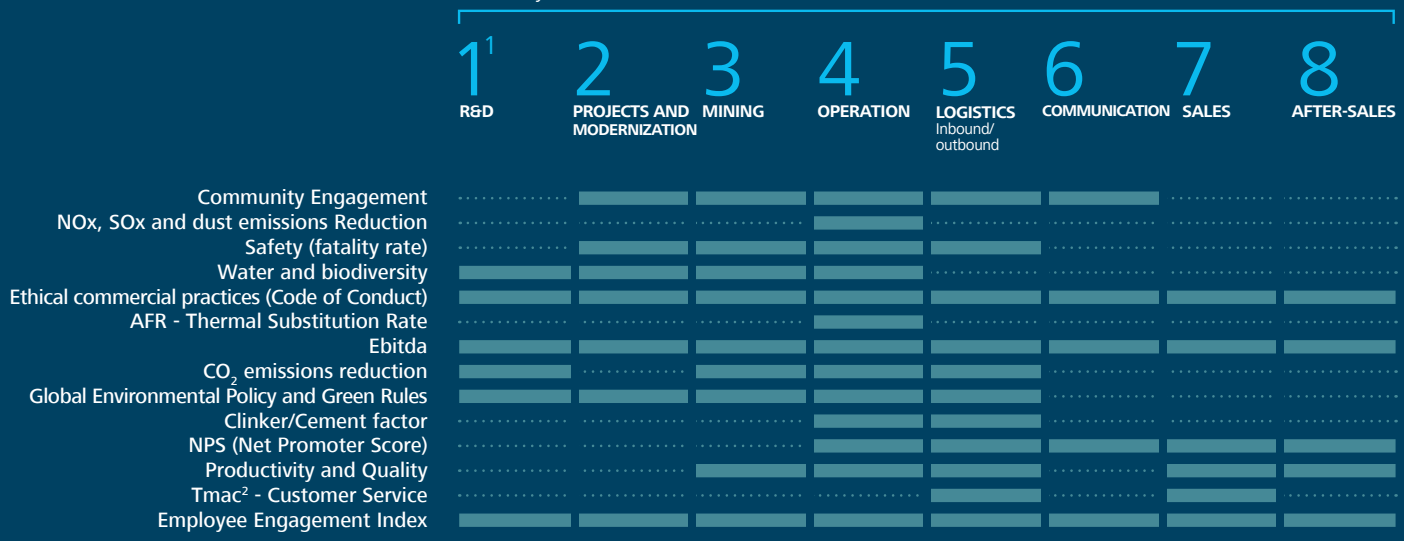
BUSINESS MODEL

STRATEGIC DRIVERS AND PERFORMANCE INDICATORS

They represent the basis of our business performance and are reflected in goals and in our materiality.

KEY ACTIVITIES

MANAGEMENT OF PROJECTS AND INDICATORS
Advocacy

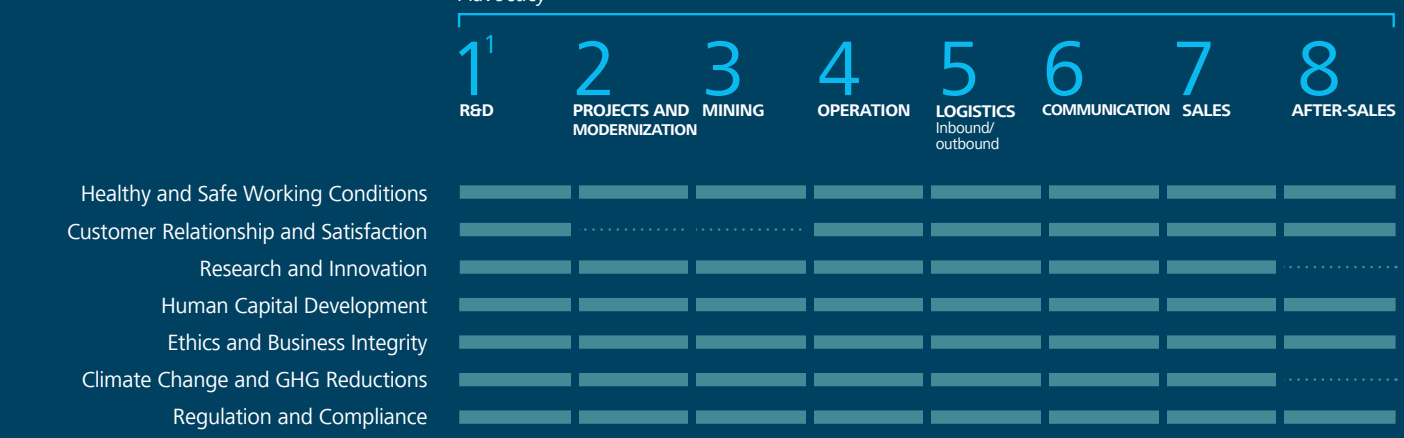


MATERIAL ISSUES

The material issues are defined through surveys, every two years, with our main stakeholders. These topics drive the content of the report and influence company decision making.

KEY ACTIVITIES

MANAGEMENT OF PROJECTS AND INDICATORS
Advocacy



1 Research activity includes geological research, market research and Research and Development (R&D)
2 TMAC - Average Service Time

Compliance Week event held in São Paulo, São Paulo (Brazil)

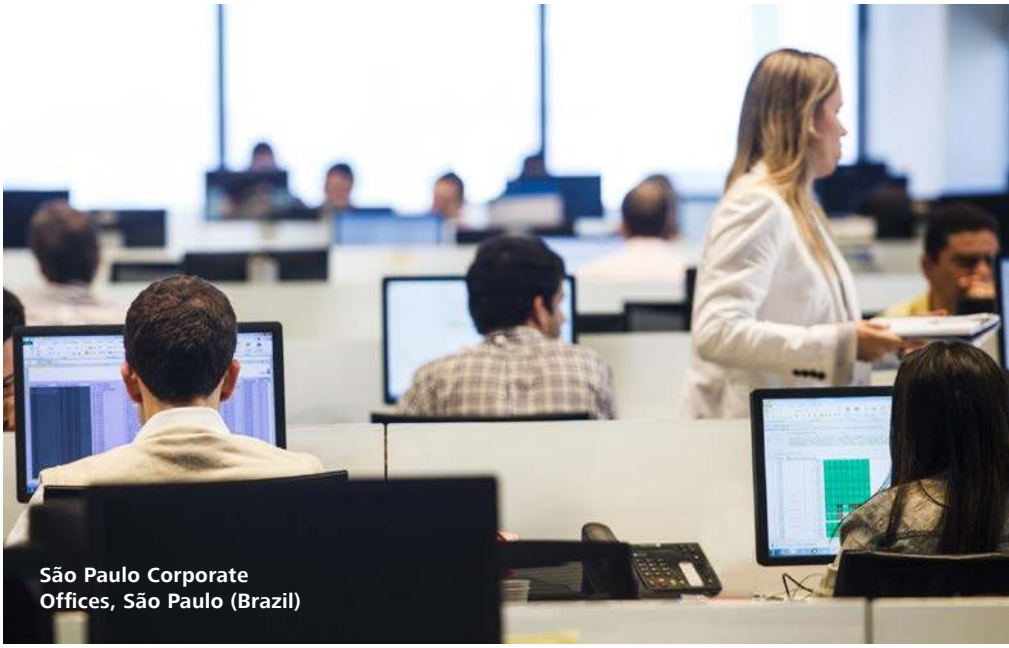
AGILITY IN DECISION MAKING

Our governance structure is aligned with our Values and Beliefs and our purpose, "Life is made to last", and with our vision and strategies. We are committed to transparency, sustainable business development and our stakeholders.

The Board of Directors, our highest governance body, manages strategic issues and sets out policies in a model that seeks to ensure agility and efficient decision making. GRI 102-18

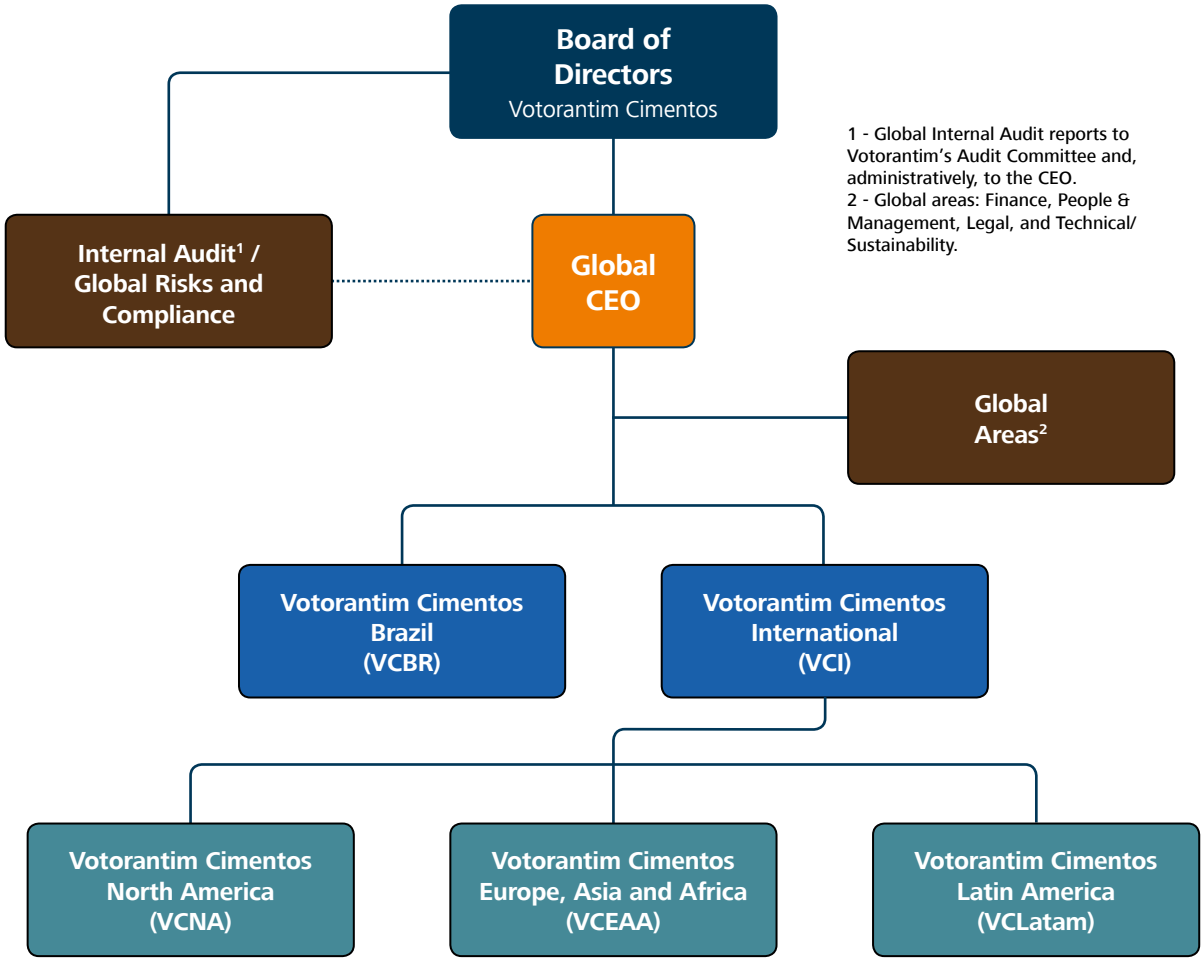
Board of Directors

In 2018, the number of members on our Board of Directors went from seven to eight, increasing the number of independent directors from three to four. The members of the board are elected by the shareholders for a two-year term, during which they validate the company's strategy and direction, keeping informed about the business, our industry and the macro-economic, social and political conditions of the regions where we operate. The board holds seven ordinary meetings a year and is advised by four committees.



São Paulo Corporate Offices, São Paulo (Brazil)

MANAGEMENT STRUCTURE



1 - Global Internal Audit reports to Votorantim's Audit Committee and, administratively, to the CEO.
2 - Global areas: Finance, People & Management, Legal, and Technical/ Sustainability.

SUPPORTING COMMITTEES

FINANCE COMMITTEE: Builds and analyzes medium- and long-term scenarios regarding financial policies and risks, investments, cash management and liquidity. Proposes and creates annual performance and budget targets and capital structure definitions. It is composed of three members, two of whom are independent.

INNOVATION AND STRATEGY COMMITTEE: Analyzes topics related to the industry and VC's business segments, considering opportunities, new markets and the impact of innovations on the company's competitiveness. It consists of three to five members, one of whom is independent.

AUDIT COMMITTEE: Overlook internal and external audits. Monitors the company's governance, risk, internal controls and compliance processes and the Financial Statements (quarterly and annually). It consists of three to five members, three of whom are independent.

ORGANIZATION, COMPENSATION AND PEOPLE COMMITTEE: Supports the decisions of the board on human resources matters, such as compensation, appointments, profile and skills of candidates for management positions. Monitors issues related to corporate culture and the People & Management area. It has between three and five members, two of whom are independent.

Senior Management

The everyday business is conducted by the senior management, under the following structure:

EXECUTIVE STEERING COMMITTEE: Composed of the Global CEO and the CEOs of the regional units (VCNA and VCEAA), in addition to the CFO and the head of People and Management. The committee is responsible for monitoring the execution of company strategies.

GLOBAL EXECUTIVE TEAM (GET): Composed of the Global CEO, the presidents of the regions and the executive directors of five strategic global areas (Finance, People & Management, Legal, Corporate Development, and Technical/Sustainability Department). The GET meets periodically.

REGIONAL EXECUTIVE TEAMS: The GET structure is replicated locally by three regional teams. Their role is to align the regional strategies with VC's global strategies. The regional executive teams are: Brazilian Executive Team (BET), North American Executive Team (NAET) and European, Asian and African Executive Team (EAAET).

GLOBAL COMMITTEES: These include Human Resources, Organizational Development, Corporate Communications, Global Technical Committee, Industry 4.0 Global Committee, Legal and Audit, and support the Global CEO and the Executive Steering Committee on important short-, medium- and long-term issues.

São Paulo Corporate Offices, São Paulo (Brazil)

Votorantim Cimentos International (VCI)

To increase our global efficiency, in October we created Votorantim Cimentos International (VCI). Based in Luxembourg, the company concentrates our investments outside Brazil, reinforcing our position as a global player. The role of VCI will be to oversee, plan, support, monitor and exercise the financial management of the VCNA, VCEAA and VCLatam regions, under the control of Votorantim Cimentos. The new structure strengthens our corporate governance and ensures the most efficient allocation of cash and debt of our international business.

Santa Helena plant,
São Paulo (Brazil)

RISK MANAGEMENT

GRI 103-2 GRI 103-3

In 2018, we reviewed our Risk Policy with the objective of enhancing the identification and monitoring of risks in all our operations. The implementation of this policy was shared by the entire company, under the coordination of the Governance, Risk and Compliance area. With global scope, this department contributes methodologies and tools that support each area in monitoring and managing the risks to which they are exposed. This process follows the ISO 31000 guidelines (international risk management standard), and the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We have an Internal Audit area, which reports directly to the Audit Committee to independently and objectively assess the quality of management operating practices and internal controls, as well as to advise on ways to improve them and add value to the business. We have Audit professionals in all of our regions.

At Votorantim Cimentos, we have a GRC (Governance, Risks and Compliance) area that among other functions, is in charge of deploying risk management practices and processes in all areas and regions", said Cristiano Fernandes da Silva, Global Controllership Manager.

COMPLIANCE CULTURE

GRI 102-16

Since 2013, we have maintained a Compliance Program, based on our Values and Beliefs, our Code of Conduct and the legislation of the countries where we operate.

We have updated our Critical Compliance Policies (Anti-Corruption; Gifts and Entertainment; Conflict of Interest; and Donations and Sponsorships), all of which have global reach.

The Donations and Sponsorships policy refers to donations to local communities, in line with our sustainability and social investment strategy, or sponsorship initiatives, which must be aligned with our company strategy and Values (Solidity, Ethics, Respect, Entrepreneurship and Unity). In 2018, we created the Donations and Sponsorships Committee at VCNA and VCEAA, which meets monthly to analyze and approve the proposals that are in accordance with governance and compliance policies. In Brazil, the Committee was created in 2017.

We also monitor counterparts due to sanctions and restrictions that may apply to our businesses.

TRAINING

In 2018, the Board of Directors requested that our Compliance area be reinforced, with the creation of teams at VCEAA and VCLatam, as well as a focal point in each of the countries where we operate in Europe, Asia and Africa. Team additions, communication programs and training initiatives were a consequence of this request.

> COMPLIANCE POLICIES WERE UPDATED TO REINFORCE OUR ETHICAL PERFORMANCE

During the year, we completed our previously announced Code of Conduct training in our VCEAA and VCNA regions and supplemented the training with online materials and exercises. We understand that efforts on compliance never end, because it is also about culture. "This year we devoted significant attention to communications, so that each employee knows how to ensure that our efficiency is within compliance guidelines and, as a result, our company can be strengthened as a whole," said Cristiano Fernandes da Silva, Global Controllership Manager.

In Brazil, we conducted face-to-face training on the five Critical Compliance Policies (detailed above), including factory workers and sales teams. Local managers, production managers and employees in the areas of operations, procurement, sales and marketing were trained face-to-face on how to apply these policies.

The activities were carried out in nine units and had the participation of 984 employees, equivalent to 8% of our global total. GRI 205-2

OPEN CHANNELS

GRI 103-2 GRI 103-3 GRI 102-17 MM7

Integrity in business is part of our culture. Therefore, in pursuing our business and strategic goals we have to do so in an ethical manner, to operate with the highest levels of integrity and strengthen our reputation.

The Business Ethics Office—an area designed to receive, analyze and resolve complaints or suspected violations of the Code of Conduct, related policies and laws and regulations—ensures confidentiality of information, data protection and impartiality in handling the cases. Linked to the Board of Directors through the Audit Committee, the Business Ethics Office is assisted in its analysis of any complain by a network of Business Ethics Agents, who are specialists in their areas. The remedial actions are subject to the supervision of the Global Business Ethics Commission.

Any person (including external stakeholders) can file a report or present a complaint before the Business Ethics Agent, the Global Business Ethics Office and the Ethics Line.

ETHICS AWARENESS

The Ethics Line, available 24 hours a day, 7 days a week, by phone or online in all countries where we operate, offers anonymity (in countries where this is permitted by law). Through the online portal, it is possible to register a complaint, follow the status of the analysis and obtain the Ethics Hotline contact numbers in each country. The Ethics Line call center is operated by a third party; it doesn't use caller ID and all complaints are stored in a database hosted on an external server, to ensure maximum confidentiality.

To reinforce ethics awareness among employees, the Global Business Ethics Office maintains an intranet webpage containing videos that discuss the ethical behaviors that are expected in various situations, a frequently asked questions document on the structure and work of the Global Business Ethics Office, case studies, policies, and procedures, etc. In 2018, the Global Business Ethics area modernized the global online training platform on business ethics and produced 23 training modules related to antitrust legislation, which are available globally.

In 2018, the Global Business Ethics Office confirmed no cases of corruption involving the public sector. Three allegations of discrimination were reported, all of which were investigated and closed without evidence of violation, as detailed in the table on page 81. GRI 205-3 GRI 406-1

COMMITMENT LETTER

In August we signed in Brazil, the Commitment Letter of the Business Movement for Integrity, Transparency and Fight Against Corruption, in which we participate together with 36 other companies. By signing this letter, we committed to adopt practical measures in the fight against corruption in the business environment and in public-private relationships. As a result, we made a public commitment to implement measures that have already been included in our Compliance Program. GRI 102-12

Compliance Week

"Compliance begins with me and you" was the theme of our global communications and awareness campaign through Workplace, our internal corporate social media platform, which culminated in Compliance Week, from December 3 through 7, in all of our units. The goal was to make the idea of compliance—complying with all laws, regulations and policies in all countries and regions where we operate—tangible to all our employees, and to show that individual responsibility strengthens Votorantim Cimentos as a whole and preserves its value.
In Brazil, the week began with a meeting that included managers, general managers and directors, as well as external guests, and was broadcast live to all employees through Workplace. Directors with responsibilities over compliance pillars gave an overview of the initiatives conducted in their areas in 2018, and guests from other companies and from Transparency International shared best practices.

EXECUTING OUR STRATEGY WITH EXCELLENCE

Plant in Laranjeiras, Sergipe (Brazil)

Our financial excellence is based on the efficient execution of our strategy, with a long-term vision for creating value for our shareholders. In 2018, for example, we continued to sell non-strategic assets and to implement various initiatives to lengthen and reduce debt costs and to optimize debt allocation.

Sales of non-strategic assets were made with the objective of optimizing the operations in which we have a controlling interest and in regions where we are relevant players and that offer positive growth prospects in the medium and long term. Focused on this premise, in October 2018 we sold our 50% stake in Cementos Portland S.A. (Cempor) in Peru.

In November, we signed an agreement to sell a 75% direct and indirect stake in Shree Digvijay Cement Company Ltd. (SDCCL), a publicly-traded company in India. Our expectation is that the completion of this transaction, and the subsequent transfer of control to the True North Managers LLC fund, will occur in the second quarter of 2019.

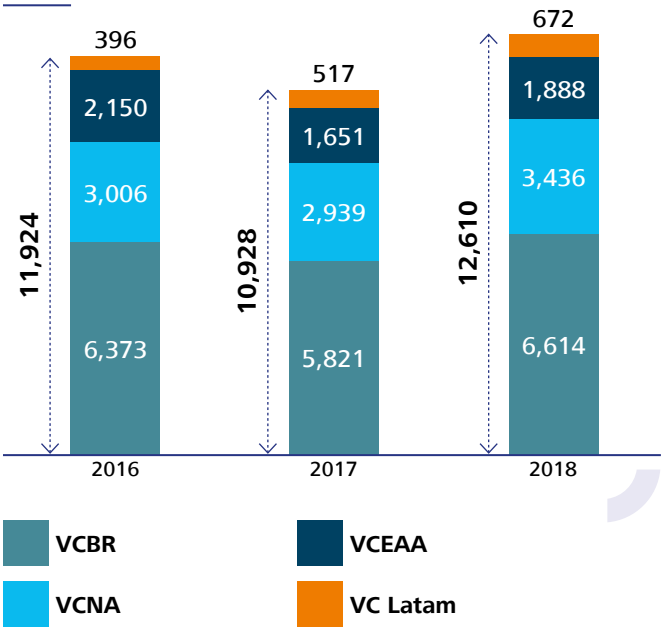
Financial Statement

Recovering Results

In 2018, our results were impacted by challenging environments in some countries in which we operate, especially due to economic and political instability in three of them: Argentina, Brazil and Turkey. In spite of the challenging and unstable scenario, we recorded global growth in volume, net revenue and adjusted EBITDA, especially in the Brazilian market, where our results grew for the first time since 2014.

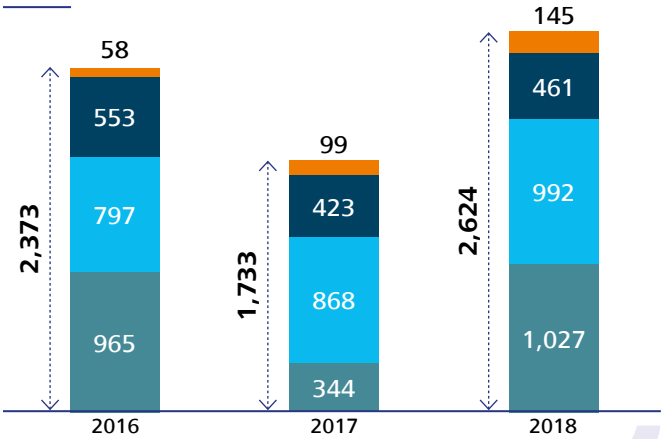
As we resumed the growth trajectory in our results, our consolidated net revenue totaled R$ 12.6 billion, 15% above 2017 (R$ 10.9 billion). Consolidated EBITDA reached R$ 2.6 billion, compared to R$ 1.7 billion in 2017, up 51%, and 21% EBITDA margin (16% in 2017).

NET REVENUE* (R$ MILLION)



*VCBR figures include eliminations

EBITDA (R$ MILLION)



BRAZIL

In Brazil, our main market, which accounted for 52% of our consolidated net revenue in the year, cement sales fell for the fourth consecutive year, recording a decrease of 1.2%, according to estimates by the National Union of the Cement Industry (SNIC), reflecting the low growth of the Gross Domestic Product (GDP), at 1.1% (Brazilian Central Bank). Since 2015, Brazilian market sales have decreased 26.5% (SNIC).

The beginning of 2018 had shown promise for recovery on national cement sales, following a trend recovery since the end of 2017. Starting in May, however, a truck driver strike caused a supply crisis and the retraction of all economic activity indicators. The business environment only started to recover after the end of the presidential election in October, and the year ended with a rising sales curve.

Gabriela Woge, treasurer and director of Global Investor Relations

Our agility in seizing the market recovery, our widespread network of activities in all regions, our customer relationship strategy and our diversified portfolio of products and services ensured our good performance.

"Net revenues increased by 14% in Brazil reaching R$6.6 billion in 2018, despite the 1.2% decrease in volumes in the Brazilian cement market according to SNIC." said Gabriela Woge, treasurer and director of Global Investor Relations.

"However, there was strong inflationary pressure on costs, especially on essential inputs, such as fuels (petcoke prices) and electricity, as well as higher freight costs and the impact of the devaluation of the exchange rate," said Eduardo Almeida, Brazil Finance Director. EBITDA totaled R$ 1.0 billion, compared to R$ 344 million in the previous year, up 198%, also explained by non-recurring items that impacted results in both years.

NORTH AMERICA

"The sales increase of about 2.5% in the United States was driven by continued strong economic growth and sound fundamentals. In Canada, strong competition in both cement

and ready mix concrete impacted sales volumes. Despite this, VCNA delivered record results in 2018 in reais." said John McCarthy, VCNA's CFO and regional head of Compliance and Internal Controls.

Against this backdrop, VCNA's net revenue reached R$ 3.4 billion (R$ 2,9 billion in 2017); EBITDA increased 14%, from R$ 868 million to R$ 992 million.

EUROPE, ASIA AND AFRICA

Two key factors influenced the region's results in 2018: 1) an increase in the average cost of fuels and energy, a direct effect of high oil prices that influenced items representing 60% of variable costs, and 2) Turkey's instability, accompanied by a rise in inflation (20.3%) and a depreciation of 32.9% of the Turkish lira.

"The crisis in Turkey slowed down our business and affected our results in a year in which the expansion of the Sivas unit became fully operational," said Persio Morassuti, VCEAA's CFO. "In contrast, in Spain we had a very positive year in sales volume, the effect of major construction projects in infrastructure."

Our performance was also positive in Tunisia, where we surpassed all projected targets as a result of market opportunities that generated margin improvements. In Morocco, on the other hand, we had a 4% decrease in volume, similar to the last three years, but we managed to ensure a good EBITDA margin (46.5%).

As a result, VCEAA's net revenue was R$ 1.9 billion, compared to R$ 1,7 billion in 2017, and EBITDA totaled R$ 461 million (R$ 423 million in 2017).

LATIN AMERICA

VCLatam faced positive domestic markets dynamics in Uruguay and continued ramp-up of the expansion in Bolivia, which influenced our net revenue of R$ 672 million, compared to R$ 517 million in 2017. EBITDA was R$ 145 million (R$ 99 million in 2017).

In Argentina, the worsening of the economic crisis translated into a 46.7% increase in inflation and a 2.5% decline in national cement sales according to the local cement association. This situation had a direct impact on exports from Uruguay, since Argentina is the country's main cement export market.

In Bolivia, we experienced a highly competitive environment and took important measures, such as a strong Go to Market initiative and increasing exports to Paraguay, to mitigate it during the first year of stabilization at our Yacuses Plant, which was inaugurated at the end of 2016.

"CHALLENGING ENVIRONMENTS IN ARGENTINA, BRAZIL AND TURKEY IMPACTED OUR RESULTS"

LOWER LEVERAGE

The focus of the implementation of our financial liability management strategy was to reduce gross debt and seek opportunities to lengthen our debt profile and reduce our average debt cost. During the year, we borrowed new loans totaling R$1.8 billion. In addition, we amortized R$3.1 billion in loans and financing, most of which were paid in advance, together with amendments of debt to reduce costs that totaled R$1.9 billion.

"We carried out important operations to reduce our debt and leverage ratio, with a special focus on lowering our exposure to foreign exchange impacts, which represented R$ 1.4 billion in the period," said Gabriela Woge, treasurer and director of Global Investor Relations.

As a result, we ended 2018 with gross debt of R$13.5 billion, 1% less than the R$ 13.6 billion in 2017, and net debt totaling R$9.6 billion. The leverage ratio, measured by dividing net debt by annual EBITDA, was 3.64x at year-end, a significant reduction from the 2017 ratio of 5.2x, as a result of the company's improved operating income and positive cash generation in 2018. GRI 102-7

In early 2019, to further accelerate the deleveraging process and optimize the company's capital, our shareholder, Votorantim S.A., made a capital contribution of R$ 2 billion, which was fully used for the prepayment of debts. Considering the capital contribution, the pro-forma leverage ratio for 2018 was reduced to 2.8x, reaching levels comparable to investment grade metrics.

Continuous Cost Optimization

Our commitment to value creation, competitiveness and discipline in financial management led us to develop a series of initiatives to identify opportunities to optimize our costs. One example was the creation of the Variable Cost Committee (CCV) in January 2018. We also expanded the Zero-Based Budget (ZBB) through other regions, in addition to our Global Performance Program (GPP).

The Variable Cost Committee is a transversal and interdisciplinary working group whose objective is to identify opportunities for variable cost optimization in our cement operations, focusing on operational excellence and leveraging gains in negotiations and innovations. Created at VCBR in 2018, the committee analyzed issues related to cost reductions in fuels, electricity, inputs and reverse logistics, among other topics.

Formed by the Financial, Technical/Sustainability and Operations directors and by representatives of budget items, the committee also seeks a holistic view of the plants. According to André Leitão, director of Brazil Operations, among the many opportunities we will focus on solutions that can be replicated in all plants and offer competitive advantages. "We believe that together, through interdisciplinary co-creation, we will seize the best opportunities to optimize costs and differentiate ourselves."

"SIMPLE, EFFICIENT AND LOW-COST" CULTURE

Divided into different workstreams, each of them under the responsibility of a leader, the ZBB initiatives involve a large part of the corporate structure and production activities. In 2018 the project worked to embed a "simple, efficient and low-cost" culture.

"We have reached a point of such austerity that we are now at a phase when we seek even small savings. In 2018, for example, we saved R$ 400,000 by changing our travel and reimbursement policy to allow the use of car apps. The millennial culture has helped us with that," explained Eduardo Costa Almeida, VCBR's Finance director.

At VCEAA, this methodology began to be fully applied in 2018 in Spain (corporate area and operations) and Morocco. Experimentally, some ZBB principles were also adopted in Tunisia and Turkey. "Next year, we will fully apply ZBB in all units. It increases discipline in management. Just with what we saved this year, we were able to recover the equivalent of half the inflation in the region for 2019," explained Persio Morassuti, CFO of VCEAA.

In North America, management undertook tight control of production costs, mainly due to the entry of new competitors and problems with raw material suppliers in Canada.

SHARING OPPORTUNITIES

Along the same lines of efficiency gains, the Global Performance Program (GPP) is aimed at promoting operational excellence in cement units worldwide, with a focus on reducing operating costs and finding opportunities to achieve and maintain the standards of excellence for our products and services. In 2018, the GPP included 44 cement operations around the world, generating projects on continuous improvement and modernization that form the basis of our Strategic and Budget Planning. "GPP allows the organization to seek continuous opportunities to increase technical performance through internal benchmark, technical standard references and medium-term thinking, identifying actions to streamline results," says Álvaro Lorenz, Global Technical and Sustainability Director.

In Brazil, for example, the GPP focused on benchmarking technical and cost indicators among units to provoke questions and lead to improvement solutions. At VCEAA, the priority was to analyze the management of variable production costs and develop projects to reduce costs in Morocco and Tunisia in 2019. To this end, we plan investments to change the equipment base and to leverage the expertise of outside experts.

ARIBA EXPANSION

Another front of financial management involves contracts with suppliers. To ensure excellence in this process, we extended to VCEAA and VCNA the adoption of SAP Ariba, which had been implemented in Brazil in 2017 to manage information and assess performance and risk of suppliers. VCEAA completed the implementation of the contract module.

> CREACTED IN 2018, THE VARIABLE COST COMMITTEE IDENTIFIES OPPORTUNITIES FOCUSED ON EXCELLENCE

"Implementing Ariba has led to streamlined processes and greater efficiency. By the end of 2018, with the help of Ariba, VCNA processed 77% of invoices straight through without any human touch. This compares to just 23% in 2015," said John McCarthy, CFO of VCNA and regional head of Compliance and Internal Controls. In 2019, Ariba Contract Management and Sourcing will further enhance North American procurement and deliver additional savings.

With the implementation of Ariba, purchase processes—from price survey to supplier payment—are no longer processed manually. The platform helps to ensure compliance between the purchase and the need of the area, facilitates the registration of new suppliers, records the acquisition processes, gives greater visibility and speeds up estimates, and optimizes prices.

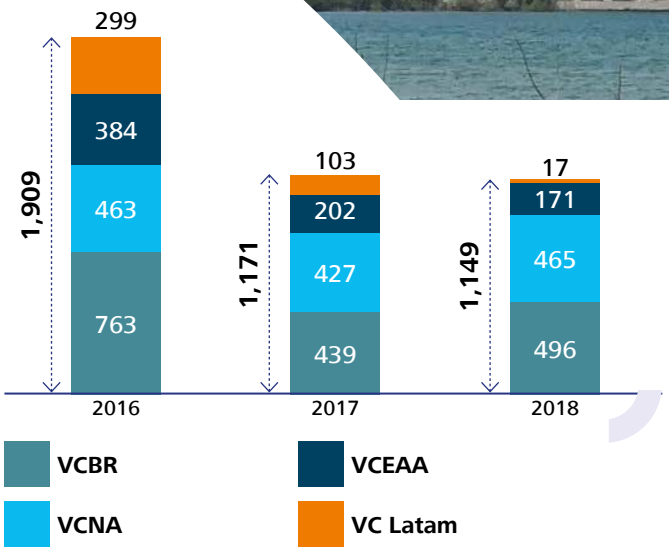
Also in Brazil during the year, 11,273 suppliers went through our certification process. For all of them we evaluated existence of public claims on social topics such as child labor, forced labor or analogous to slave labor. Of the total, 1,525 (13.5%) were also evaluated on environmental regulatory compliance. During the year, we identified no negative environmental or social impacts among contracted suppliers. GRI 408-1 GRI 414-12 GRI 409-1

NEW INVESTMENT CYCLE

In 2018, we invested R$1.1 billion in Capex (Capital Expenditure) in all operations, guided by our strategic levers. The allocation of resources shows that we have reached the end of an expansion cycle and are now focusing on modernization and efficiency gains.

Plant in Charlevoix, Michigan (United States)

CAPEX (R$ MILLION)



We prioritize initiatives that can both reduce operating costs in the future and reduce our environmental footprint, such as the substitution of fossil fuels and the use of alternative raw materials. In this sense, projects on the use of alternative fuels in place of petroleum coke were the focus of our attention during the year, with investments of around R$ 85 million for the adaptation of units to co-process these materials.

We expanded our production capacity where we saw opportunities to increase market share and generate value. Examples are investments in businesses and products other than cement, such as agricultural inputs and mortars. We invested in information technology, customer-focused structural projects, such as Spectrum (Predictive Advanced Maintenance), and internal efficiency, such as VC Maps (Online Territory Management). *(For more information on these projects, see Operational Excellence/Our Innovation Ecosystem on pages 36 and 40).*

HIGHER INTERNATIONAL CAPACITY

In line with our Internationalization lever, in 2018, we concluded the expansion of the cement production capacity of the Charlevoix unit in Michigan, United States, and a new line of calcined clay at the Olavarría plant in Argentina.

With an investment of more than US$ 180 million, the Charlevoix modernization project included the primary industrial processes and equipment, such as limestone grinding, kilns, and cyclone and cement grinding towers. The addition of approximately 600,000 ton capacity went into operation in June. To transport this additional cement to our distribution terminals and markets, in early 2019, VCNA added to its fleet with the launch of Commander, a barge with the capacity to transport up to 14,000 tons of cement *(For more information about Commander, see Fine-Tuned Logistics on page 39).*

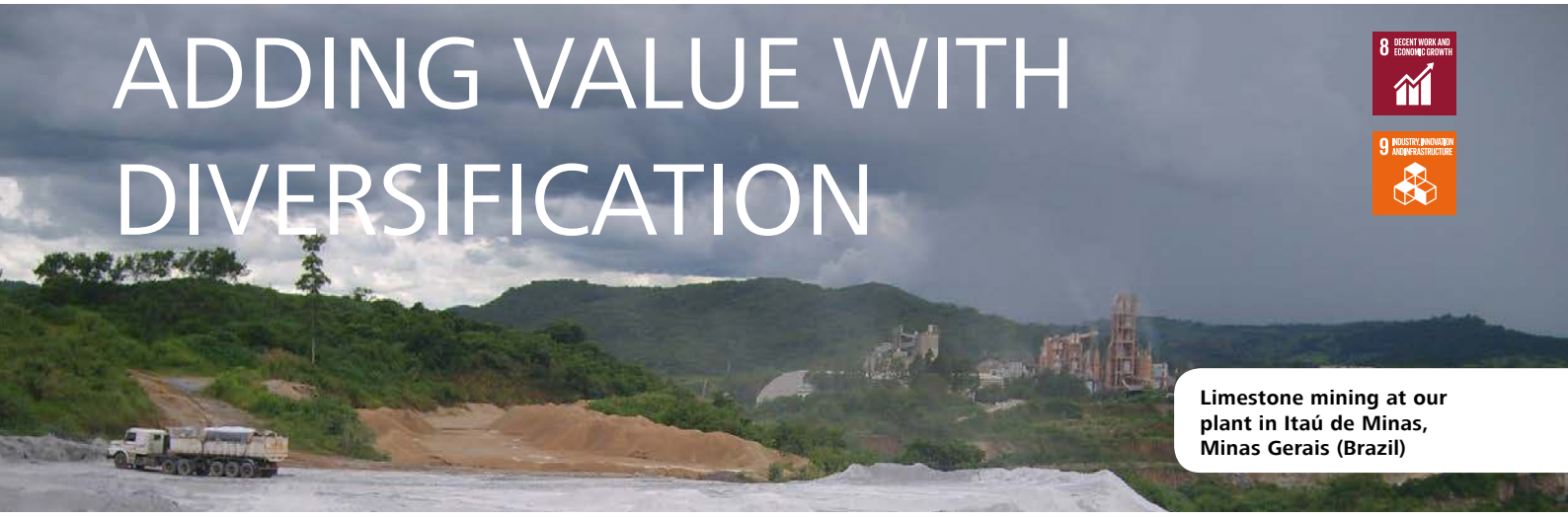
In Argentina, we inaugurated a new line at Olavarría, which increased the capacity of the unit by almost 200,000 tons. Another project to expand the San Luis unit by close to 700,000 tons is still underway, expected to be completed in the second half of 2019.

With that, we concluded a cycle of expansion of our global capacity, which had started in 2016 with an expansion in Bolivia. We are now dedicated to a new cycle, one of automation and modernization, which includes new technologies such as thermal substitution and Industry 4.0 projects *(these initiatives are detailed in Operational Excellence/AFR Assures Competitiveness on pages 36 and 37).*

CAPEX COMMITTEE

In 2018, we created the Global Capex Committee, which evaluates capital expenditures, to ensure that the prioritization of resources is aligned with our strategy. One innovation that demonstrates our commitment to our Sustainable Practices strategic pillar is our internal carbon pricing initiative: our investments now consider the impact of CO_2 emissions (Shadow pricing). The ability to reduce greenhouse gas emissions becomes a differentiating factor among projects that compete for resources with other investment initiatives within the Company.

ADDING VALUE WITH DIVERSIFICATION



Limestone mining at our plant in Itaú de Minas, Minas Gerais (Brazil)

We focus on diversifying our portfolio of products and services to create opportunities in areas related to our core business—cement—especially in Brazil. Through this strategic lever, we create synergies among different operations, leverage our installed capacity and dilute fixed plant operating costs, and develop initiatives tied to the circular economy, while also reducing our ecological footprint. By working on other products and solutions (aggregates, mortars, lime and agricultural lime), we create additional value for the Company.

In a scenario of additional reductions in cement consumption in Brazil, as we've seen for the last four years, the production volume and share of our other products and businesses continued to grow. For example, up until 2015, we sold around 1.5 million tons of agricultural inputs (bulk limestone, bagged limestone, calcinated lime and gypsum). In 2018, we sold 2.94 million tons, gaining market share in a fragmented and regionalized market. The Aggregates operation resumed its operational efficiency and profitability and the Concrete business invested in innovation and differentiated services *(For more information on concrete differentiation, see Operational Excellence/Innovation and Customer Focus).*

INVESTMENTS

Investments in other products and services pave the way for our growth in the medium and long term. In 2018, we started to expand our production capacity of agricultural lime in the Nobres (MT) unit. With an investment of R$ 42 million, the plant will have production capacity of 1.0 million tons in 2019, an increase of 700,000 tons. Our installed capacity of agricultural lime is 4.2 million tons per year, distributed among nine plants in Brazil. In the mortars segment, we invested R$ 10 million in a new line in Cuiabá, which will start operating in 2019. These two plants are located inside cement production units.

INNOVATIONS

In Spain we are investing in products other than cement to offer new solutions to our customers. One innovation in 2018 was the launch of a new line of Pulmor mortars: Flex Gel Color is more flexible, easier to apply, has a gel effect that makes it easier to clean, and comes in bright and long-lasting colors.

In our plants in the South and Southeast of Brazil, Engemix started to produce stabilized mortar for the real estate market. In the Northeast region, we launched a new 25-kg cement bag, targeting the renovation market.

In the United States and Canada, we have worked tirelessly on differentiated solutions for the diverse needs of our customers. In Chicago, for example, we are developing innovative concrete mixes to enable the construction of skyscrapers, helping architects and builders realize their visions of unusual designs and creative engineering techniques with quality and safety. "We are constantly working to innovate and respond more quickly to our customers' requirements for each new project," said Nick Beristain, Quality Control Manager at VCNA Prairie's Technical Services lab.

COMMITMENT TO EFFICIENCY

In 2018, our commitment to excellence enabled us to maintain the efficiency of our plants and fully establish the operation of our most recent expansions – Edealina (Goiás, 2015) and Primavera (Pará, 2016) in Brazil; Sivas (March 2017) in Turkey; and Yacuses (December 2016) in Bolivia. At the same time, we completed the modernization of our Charlevoix, Michigan cement plant in the U.S., entering a new learning curve. Performance monitoring, commitment to continuous improvement, agility, consistency in decision-making and the pursuit of higher productivity in all areas are attitudes that contribute to our results.

"We saw improvements in key indicators in all units," said Günther Smetana, director of Operations, VCEAA and VCLatam. "At Sivas and Yacuses, overall efficiency rates reached 86% and 87% in their first year of operation, further boosting our already high performance."

We expanded the co-processing of alternative raw materials and fuels (AFR), combining economic benefits, such as cost reduction and lower exposure to oil prices and exchange rates, with environmental benefits, such as lower CO_2 emissions resulting from the use of renewable energy sources. In 2018, we achieved an AFR substitution rate of 18.5%. We also expanded the use of digitization tools and improved the level of service to customers and partners, among other aspects that enhanced the quality of our operations *(these topics are detailed on pages below)*.

Co-processing in our plant in Rio Branco do Sul, Paraná (Brazil)

AFR ASSURES COMPETITIVENESS

In support of our value-creation lever, alternative fuels and raw materials co-processing (AFR) is gaining ground as a factor for increasing competitiveness. It also helps us to reduce the environmental and social impacts of waste that would otherwise end up in landfills, lowers the exposure of our operations to oil prices and exchange rate variations, and enables us to lower our production costs.

The main alternative fuels are industrial waste, municipal solid waste, biomass, solvents, recyclable oils, tires and contaminated soils, which offer environmental advantages compared with traditional fuels. In 2018, we advanced in the use of new alternative sources, especially açaí and babassu biomass, and started an unprecedented program in the cement industry in Brazil, transforming part of the recyclable garbage collected in Piracicaba and Sorocaba (interior of São Paulo) into Refuse-Derived Fuel (RDF). The Salto de Pirapora plant used 17,900 tons of RDF during the year, which corresponds to a 5.3% substitution of petroleum coke. The plant has the capacity to process 65,000 tons. The solution involves investments in the waste preparation facility, in the modernization of our manufacturing system, and in filters and online emissions control. (***Click here*** *to see a video about this process).*

"The cement industry has great potential for waste disposal through co-processing, an ecological technology that doesn't generate new environmental liabilities, since 100% of the waste is consumed in the cement manufacturing process," said Eduardo Porciúncula, general manager of AFR Brazil.

We are pioneers in co-processing in Brazil, where we have been performing this activity since 1991. Currently, 14 plants in Brazil are prepared and licensed to co-process alternative fuels. Co-processing initiatives contribute significantly to the country's annual EBITDA. In 2019, we plan to make AFR a new source of revenue by expanding our service offerings.

NEW INITIATIVES

Initiatives to expand the use of alternative fuels—or initiate it where it is not yet in place—were important in 2018 and will continue to be in the coming years.

At VCEAA, where only the Oural plant (Spain) had been using renewable fuels, we implemented AFR projects in all countries, especially to co-process industrial waste. In plants where fuel substitution was already in place, we went from an average rate of close to zero to 5% in just one year, and we plan to reach 15% by 2019. Eight of our nine units will be co-processing (Oural, Córdoba, Niebla and Toral, in Spain; Hasanoglan and Yozgat, in Turkey; Asment Temara, in Morocco; and Jbel Oust, in Tunisia). "In some units our substitution rate is even higher: For example, in 2018, we reached 26.9% in Cordoba (Spain)," explained Juan Aguilera, general manager of Operations, VCEAA.

> USE OF NEW ALTERNATIVE FUEL SOURCES—ESPECIALLY AÇAÍ AND BABAÇU—ADVANCED IN 2018

At VCNA, we started our first phase of AFR at our Bowmanville, Ontario (Canada) plant and began preparing the Charlevoix, Michigan (U.S.) plant for the installation of a system that will enable us to increase the co-processing of low-carbon fuels from 5% to 40%, using mainly industrial, construction and plastic waste. "We are also seeking authorization to co-process plastic in Bowmanville, Ontario, where we concluded testing in late 2018," said Resha Watkins, vice president of Strategy and AFR, VCNA.

Relevant and Sustainable

Our investment in AFR was one of the most important investments we made in 2018, with resources of more than R$ 85 million used in the acquisition of new equipment, development of new suppliers and customers, quality control of new inputs, changes in production processes, comprehensive programs of internal and community communications, regulatory issues and monitoring the activities of our competitors.

"These investments are financial requirements for us to be both competitive and sustainable," said Joe Horton, vice president of Business Development and Engineering, VCEAA. "There is no looking back. These investments take place at the same time as we increase the reliability and performance indicators of our plants."

PLAN FOCUSES ON QUALITY

The quality of alternative fuels and raw materials is critical to achieving and sustaining high co-processing rates. In 2018, we created a new AFR Quality Control Plan and established a quality score for each of the various fuels we co-process and for each supplier.

We performed daily tests and issued monthly reports, generating data that was used by the AFR team to improve the control of these materials and their performance in the production process. We also considered variables, such as occupational health and emissions. "Today we have strict and transparent control of all fuels," explained Silvia Regina Soares Da Silva Vieira, general manager of Research & Development. "This project required the dedication of the team, many hours of work and strong technical knowledge - and is now one of our competitive differentials."

Açaí field in Igarapé-Miri, Pará (Brazil)

Sustainable Açaí and Babassu

Using açaí and babassu, we developed two projects that combine the use of alternative fuels with incentives to generate income and create inclusive businesses in communities close to our operations.

Our plant in Primavera (Pará), in the Brazilian Amazon, started using pits of açaí, a palm fruit native to the region, to substitute part of the petroleum coke, imported from the United States. The pulp of açaí is traditionally consumed for its high energy value, and its pits are discarded. The pits, which make up 83% of the volume of the fruit, used to be sent to landfills or rotted and, without proper disposal, resulted in enormous amounts of waste.

Today, we process, prepare and store part of these pits, which serve as an energy source for the Primavera kiln. In 2018, we used 40,000 tons of açaí pits, resulting in 14.3% thermal substitution. This chain involves the producers of açaí, a fruit that supports dozens of communities in the region, and local partners that process the pits. **Click here** to see a video about our initiative.

In Sobral, Ceará, we co-process babassu coconut that we acquire from five communities in Serra do Meruoca. In 2018, our plant processed 663 tons of babassu, offsetting the use of 340 tons of petroleum coke. This led to a 1,094 tons/year reduction in CO_2 emissions (direct emission). The unit currently co-processes an average of 1,500 tons of fresh babassu per year and has the capacity to co-process up to 7,200 tons *(read more about this project in Perpetuating Our Legacy in the Communities, on page 68).*

Plant in Salto de Pirapora, São Paulo (Brazil)

FINE-TUNED LOGISTICS

Our logistics chain is essential to providing better service to our customers, increasing our competitiveness and creating new businesses. Our structure in Brazil, for example, includes a network of more than 80 units and a team of approximately 850 people, moving 2.8 million tons of product in more than 93,000 freight shipments per month.

"In early 2018, we carried out a detailed strategic assessment to review all of our customer service processes, identify trends and envision where we want to be in the next five years," said Alisson Forti Silva, Logistics director, VCBR. "We then drew four opportunity paths and the means to follow them: 1. cost efficiency; 2. transport matrix; 3. technology and modernization of operations; and 4. collaborative business. Our key initiatives in the year already considered these four paths."

One project involved the creation of a freight intelligence model for the 20 main highway freight routes, which account for 40% of our demand and costs, and in which seasonal factors cause large price variations. This model uses public data (such as highway traffic, port shipment and regional harvest) to calculate trends for price increases or reductions (analytics).

Our advances in logistic planning made it possible, for example, to minimize the impacts of the supply crisis caused by the ten-day truck driver strike that paralyzed Brazil in May. We applied the measures provided for in our global risk management plan and, once the strike was over, we quickly resumed our production and distribution volumes.

CARGO AUTOMATION

In March, we began redesigning our queuing automation and yard management processes to improve their efficiency, using the Yard Management System, version 2.0. In 2019, we will conduct a pilot project in Itaú de Minas, which will be deployed in eight other units (one distribution center and one plant in each region). The next step will be to choose the model to be replicated throughout Brazil.

The Yard Management System is already integrated with a driver app and fully online. This app, launched in 2017, enables drivers to check the availability of freight in advance, as well as to consult information on payment for contracted cargo.

COMMITMENT TO CUSTOMERS

Another initiative aimed at ensuring greater efficiency in customer service is a new OTIF (On Time in Full) indicator that measures deliveries on the dates and volumes specified in the order, segmented by type of customer (retail, construction and industry). Our indicator went from considering the time of delivery to considering the percentage of customers who receive their orders on time. As a result, we replaced data on loading averages by "customer within the target", which shows the percentage of deliveries made by the agreed-upon time. As a result, we were able to reduce our delivery time, improve our reliability and meet the specific needs of each customer.

At Engemix, for example, an average of 21,000 deliveries per month received a score higher than 80% in 2018–the same level as the best concrete companies in the United States. Three years ago, this indicator was 60%. With the segmentation of the OTIF indicator by customer profile, we adopted a more precise method to ensure good delivery performance. We also reopened our Cajamar and Guarulhos branches in the Greater São Paulo area.

MORE EFFICIENT MODES

In Turkey, we leveraged the functionality provided by the 1.8-kilometer rail access we built at the Sivas plant. Together with a new automated clinker loading system, this rail access facilitates the annual shipment of up to one million tons of raw materials and finished products. Previously, transportation between the plant and the nearest train station required the deployment of dozens of trucks and additional loading and unloading steps. "We had

a 91% reduction in loading time and an 89% increase in the daily volume of shipments. As a result, we now offer better customer service with faster deliveries. We also now have the opportunity to reach international markets such as Azerbaijan and Georgia via rail," explained Abdullah Hakan Izmirligil, Aggregates & Concrete Director at VC Turkey.

We continue to invest in waterway transportation as well and, in 2018, added a new barge to our fleet to carry the additional volume produced by the Charlevoix plant. Commander is our largest barge, with a capacity of 14,000 tons per trip. Today, approximately 95% of the cement produced at the Charlevoix plant is transported to our terminals in the region by barges.

New Paths in the North

On October 1, we assumed the operation of the Manaus Terminal, a unit acquired from Cemex with the objective of expanding our geographic diversification through access to the Brazilian Northern region. The purpose of this terminal is to support the commercialization of our portfolio of products from other production units, both in bagged and bulk format. In December, we started selling our Poty brand throughout the region.

Also in December, we received the operating license for the Barra de Coqueiros terminal in Sergipe, and in January 2019 we shipped our first bulk cement cargo from the Laranjeiras mill in Sergipe to Manaus. With this terminal, we increased the percentage of cabotage in our transportation matrix, a mode of transportation that we already use in Pará and Amapá. One new feature: the special type of boat that transports cement to Manaus is of exclusive use of Votorantim Cimentos. The use of this type of cement transport boat is a pioneering operation in Brazilian waters.

Tech Fair in São Paulo, São Paulo (Brazil)

OUR INNOVATION ECOSYSTEM

Aiming to continually offer different solutions, we think, develop and adopt innovative practices that help us achieve operational excellence, perfect our products and services, and reinvent the future. That's why we treat innovation as a cross-cutting theme and have set up a true innovation ecosystem in an environment that connects our teams with startups, suppliers, universities, research centers, government bodies and investment funds.

In 2018, we had a portfolio of approximately 50 projects aligned to the pillars that support our Digital Strategy: Open Innovation, with the Open Innovation program; Platform, with Digital Platform, which is our collaboration environment; and Relationship, with Digital Relationship, our partnership-based competitive differentiator.

"In 2018, we designed and started implementing a new IT architecture, to remain consistent, sustainable and agile in the midst of the digital transformation movement," said Humberto Shida, CIO

Open Innovation challenge in São Paulo, São Paulo (Brazil)

of Votorantim Cimentos. We focused on API (application programming interface) and DevSecOps (development + security + operation)—key innovative areas in this process.

An agile methodology and a new architecture supported the development of structural projects such as VC Mining, a mining process management platform that integrates solutions based on Industry 4.0 technologies, including automation and connectivity. Innovation is one of our major differentiating factors to advance our solutions faster and more comprehensively, to ensure our permanence and to leave an innovative and sustainable legacy to society.

CONNECTED SOLUTIONS

Following this premise, our Open Innovation programs propose thematic challenges related to our business strategy and activate the participation of the entire innovation ecosystem. In its first cycle, in 2017, 107 startups entered projects on seven business needs (on topics such as energy efficiency, land management and automation); 12 of these projects were selected and seven continued in the process, under our mentorship.

In 2018, we hosted a second cycle of Open Innovation, focusing on projects that provide greater visibility and transparency to our concrete customers and increase the level of confidence in our products. We presented two challenges: concrete quality at the construction site, to assess the quality of fresh and hardened concrete (resistance, water-cement factor, minimum cement consumption per m³ of concrete, etc.); and concrete supply digitization, using online images to measure the precise volume of fresh concrete delivered by trucks to construction sites.

We also created a fast-track Open Innovation category for solutions that already exist but need proof of concept and quick leveraging. In this area, we supported the development of Gupi (intelligent recruitment platform).

In addition, we developed a global governance model for Open Innovation so that in 2019, we can launch challenges in all regions where we operate.

Digital Land Management

One of the projects chosen in the first Open Innovation cycle, VC Maps, is a Digital Land Management solution by the Geoinova startup, which was hired by us in 2018. The project enables online monitoring of mining and environmental assets using any type of georeferenced map. Using artificial intelligence, it creates alerts for changes in every location.

Before this solution, updating an inventory using traditional geoprocessing tools and maps could take a year. Now, limits can be assessed remotely, online. Learn more about Geoinova at **https://geoinova.com.br** or via email: **contato@geoinova.com.br**

COLLABORATIVE IDEAS

Our policy of promoting open dialogue, sharing of best practices, and cultivating the leadership and autonomy of our employees also foster innovation. Along these lines, we hosted another round of i9, an initiative to recognize innovative ideas from our employees that contribute to generating value and improving company results. In 2018, we received 404 ideas, more than double the previous cycle, based on challenges related to our strategic pillars: Customer Focus, Empowered People, Best-in-Class Operations and Sustainable Practices.

The i9 initiative is divided into three categories: VCFaz (projects that address routine issues), VCTransforma (projects that address medium-complexity issues) and VCSupera (projects that address high-complexity issues). We follow the PDCA methodology (Plan, Do, Check, and Act) and offer training and support during the development of the projects. In September 2018, we launched the second wave of VCTransforma.

The best ideas are chosen in successive rounds held in the regions. The final round of the 2018 cycle will be held in March 2019, when the winning idea and its authors will be recognized on ComVC *(for more information on ComVC, see page 53).*

Plant in Vidal Ramos, Santa Catarina (Brazil)

I4.0 FOR FASTER INNOVATION

We see in Industry 4.0 a great differentiator to increase the speed and breadth of our innovation, fulfilling our commitment to the future and ensuring the permanence of our company. The Industry 4.0 concept guided our Automation Master Plan, which includes the following guidelines: connect all information (automation, Internet of Things/IoT, Industrial Internet of Things/IIoT, database, Integrated Control Tower); use the cloud and big data to centralize and analyze data; use data mining to eliminate intermediate decisions; use machine learning to operate systems; and use predictive technology to create production and maintenance prognoses.

In 2018, we designated Vidal Ramos (SC) as our model plant and analyzed how to further increase its productivity by applying these concepts. We created a Global Industry 4.0 Committee with representatives from all regions as a way to mobilize the entire company and accelerate the implementation of the various initiatives that are either planned or underway.

The plan for our main units was established in 2017 and includes several initiatives, which are at different stages of implementation: asset management and condition-based predictive maintenance (Spectrum); operational command center; onboard computers in mobile mining equipment; optimization of process control networks; online granulometric analysis of limestone, petcoke and gypsum; analysis of fuel and raw meal using artificial intelligence and optical systems; use of drones and scanners to measure raw material and input inventories; among others.

Since Industry 4.0 initiatives are part of IT and automation environments, we designed our cybersecurity roadmap and implemented initiatives in 2018 to reduce vulnerabilities and protect our operations. Investing in cybersecurity is one of our priorities.

> 50 PROJECTS ALLIGNED WITH OUR DIGITAL STRATEGY PILLARS: OPEN INNOVATION, PLATFORM AND RELATIONSHIP

SPECTRUM

The most relevant I4.0 program we developed in 2018 was Spectrum, for advanced predictive maintenance, which enables online monitoring of the behavior of the main equipment through sensors and uses advanced analytics (predictive) technology to increase its operational reliability. Signals (vibration, temperature, current, etc.) can be controlled in real time to optimize the frequency of maintenance intervention cycles, thus avoiding failures. Spectrum was implemented in 2018 in the Rio Branco (Paraná) and Salto de Pirapora (São Paulo) units; its benefits led us to approve its deployment in all units.

In line with our global effort to share best practices, VCEAA will finalize the implementation of the prerequisites for the deployment of Spectrum in the region by the end of 2019. We are also rolling out the global PI-OSI (Plant Information) solution in the region. The PI System is a set of software products that are used for data collection, localization, analysis, delivery and visualization, and also serves as a repository for operational data.

NEW SAP

Starting with VCEAA, we are transitioning our management system to eventually converge with the new version of SAP S/4 Hana. We developed a solution to

enable this transition all at once without disruption or need for a significant investment. In 2019, we will implement the financial module, SAP Central Finance, to consolidate the three different ERP versions that currently operate in the VCEAA region. VCBR and VCNA already use the same ERP version. The migration of the entire company to the new version (S/4 Hana) is under study.

In 2018 VCEAA invested three times more in information technologies than the previous year. It initiated the integration of its communication environment to the corporate network, restructured its industrial statistics databases and indicators of supply chain and logistics performance, implemented the Concur solution for travel management and prepared SAP for the introduction of IFRS 16 together with all regions.

STEPS TO A SUSTAINABLE INDUSTRY

Plant in Primavera, Pará (Brazil)

Sustainable Practices is one of the pillars of our business and one of the key elements of our Vision, on which our plans and choices are founded. We focus our efforts on initiatives to lower CO_2 emissions and, as a result, to reduce our environmental footprint, while also optimizing manufacturing costs, improving our product offerings according to the needs of our customers and maintaining our high-quality standards, in accordance with applicable laws and regulations.

To advance these themes and address the main challenges of the cement industry, we count on the support of our Research & Development and Quality area on two important levers: 1) clinker factor reduction, through the use of other materials with hydraulic properties (called cementitious), such as blast-furnace slag, fly ash, natural pozzolans and calcined clay, among others; and 2) substitution of fossil fuels with alternative lower-CO_2 emissions fuels, which reduces the use of non-renewable resources and contributes to mitigating the burden of industrial and urban waste.

The projects carried out in 2018 are important steps towards a sustainable, profitable and well-positioned company.

An assessment of the grinding process of clinker produced in all units in Brazil, for example, was the first step to optimize this procedure. Grinding, which varies according to the physicochemical characteristics of the clinker, is one of the production stages that consumes the most electricity—one of the highest budget items in the cement industry. In addition, we studied the reactivity of all types of clinker produced by all VCNA and VCEAA units. From there, we can determine how to improve them, aiming at the production of cements with higher addition contents or with characteristics that meet specific market requirements.

NEW STANDARD IN BRAZIL

Another example was our participation in the process to discuss and define the Brazilian Cement Standard (NBR 16.697), which became effective in July. It allows for a lower use of clinker per ton, which leads to lower CO_2 emissions and higher energy efficiency production. Our R&D and Quality department performed industrial tests to determine possible modifications in cement composition, participated in the standardization committee and now monitors the application of the new standard in our products.

The composition of all cements was modified, with an increase in the limit for limestone addition, without compromising product performance. All cements had a 5% increase, except for type F cement, which can now have up to a 25% addition of limestone. The readjustment of the entire product portfolio in Brazil was successfully completed. In 2018, VC's clinker/cement factor was 75.2%, compared to 77.7%* in 2017. Our target for 2020 is 72%.

The standard is in line with international standards and recommendations of the International Energy Agency (IEA) and the Cement Sustainability Initiative (CSI). In Canada, for example, this issue was regulated in 2017 in some of the provinces, including Ontario. The lower percentage of clinker in cement resulted in an average 10% decrease in CO_2 emissions compared to traditional cement.

> WE FOCUS OUR EFFORTS ON INITIATIVES TO REDUCE OUR CO_2 EMISSIONS AND ENVIRONMENTAL FOOTPRINT

* This data does not include the Suwannee (USA) and China (included in the 2017 Report), operations that were sold at that year.

BUILDING LASTING RELATIONSHIPS

Building materials store in Brazil

Customer focus drives our decisions and motivates the involvement of all areas to develop solutions and services that deliver what customers need and to identify market trends that enables us to anticipate future needs. More and more, we adapt our processes and products to customer demands, to serve them with efficiency and agility, which are the basis for lasting relationships.

The goal of enhancing our customers' experience led us to create Omnichannel, our new customer relationship management (CRM) platform. It will enable us to provide faster services, connect the field sales team directly with the system and provide recommendations for each customer.

The platform is the result of an assessment of all customer-related processes. It replaces a number of legacy systems, software programs and processes that can now be provided with a single, integrated solution. The implementation process will begin in Brazil in 2019, followed by VCEAA, under the name Customer Intelligence Project.

"This is a structural project that will transform our customer relationships and the way we work," explained Humberto Shida, CIO of Votorantim Cimentos. The focus of Omnichannel is to provide a unique and continuous experience to our customers.

> WE ADAPT OUR PROCESSES AND PRODUCTS TO THE NEEDS OF OUR CUSTOMERS, TO SERVE THEM WITH EFFICIENCY AND AGILITY. WE ARE COMMITTED TO BUILDING LASTING RELATIONSHIPS

PROXIMITY

We also invest in technologies to increase our proximity to customers and the ease with which they select our products. As a result of this strategy, 73.4% of our orders in Brazil in 2018 were received through our self-service channel, VC Online, compared to 65.5% in the previous year. We continue to work to improve the experience of our customers through this channel and to facilitate and streamline product purchase and delivery processes.

We also advanced in customer solutions, such as Pague Flex, launched at the end of 2017 to offer customers in all segments (Industrial, Real Estate and Self-Construction) the possibility of buying products in installments or with extended payment terms. This tool is especially important for small retailers. It accounted for 7.2% of revenues in 2018 with an average of 5,027 customers per month, with a peak of 5,992 customers in November 2018.

To strengthen relationships, we created the Brazilian Retail Customer Council and facilitated a workshop that brought together 32 important retailers under the motto "Rethink to innovate. Innovate to build.", focused on discussing the future of retail and how to meet customer needs. We also maintained the four Real Estate Customer Councils, which bring together the main real estate entrepreneurs. In 2018, our focus was on increased productivity in concrete structures and mortars.

In addition, the entire VCBR leadership participated in the "Trilhas Day" training, which aims to enhance knowledge about our products and the markets of our customers, and was cascaded to the entire sales team.

ONLINE CONCRETE

As a result of our Innovation Challenge program, we implemented the Engemix Online app, a platform that connects us to concrete customers, improving our level of service. The solution was developed by a technically savvy group of younger employees who participated in the program, which aims to identify and suggest innovative solutions within VC.

Customers can monitor in real time the location and route of the more than 500 concrete trucks of our Engemix fleet, which are connected via GPS. In addition to logistical information, the app enables customers to evaluate the quality of our service through the NPS (Net Promoter Score). In the future, it will also enable us to offer complementary services for construction projects.

Launch of Juntos Somos Mais in São Paulo, São Paulo (Brazil)

PERFECT PARTNERSHIP

In 2018, we created a new company, Juntos Somos Mais Fidelização Ltda., in partnership with Gerdau (27.5%), Brazil's largest steel producer, and Grupo Tigre (27.5%), one of the world's largest manufacturers of plastic for construction. We have a 45% stake in the new company, which evolved from Juntos Somos +, the largest loyalty program in the Brazilian construction retail market, created by Votorantim Cimentos in 2014. The new company also highlights our commitment to promoting innovative initiatives in our business segments.

In four years, the program grew to include 40,000 building materials stores and 100,000 participants (retailers, clerks and workers, such as masons, plumbers, etc.), distributed one billion points, and redeemed 300,000 prizes.

Our e-commerce portal, VC Online *(detailed on page 45)*, will also be migrated to the new company and expanded to include the program's partners. "Juntos Somos Mais is the first ecosystem in the construction retail segment that involves companies, stores and workers," said Antonio Serrano, CEO of Juntos Somos Mais. The purpose of the new independent company is to develop, strengthen and modernize the civil construction retail segment in Brazil.

At the end of 2018, 14 other companies were part of the program (Santander Bank, Suvinil, Bosch, Linx,

Eternit, Cozimax, Ciser, Stam, Vedacit, Casa do Construtor and Ourolux). The goal is to include 20 companies in six months, in addition to 100,000 stores and 2 million individual participants.

By 2020, the company plans to invest R$ 50 million to expand the program and enhance the ecosystem, by adding new features and improving the benefits to participants.

BENEFITS TO RETAILERS AND CUSTOMERS

There are approximately 150,000 construction materials stores and more than 6 million construction workers in Brazil. Most stores are small- or medium-sized family businesses—50% of which have been in business for more than 20 years. In general, many of these entrepreneurs had no education in business management and administration. In addition, more than 80% of the workers have never taken specialization courses in their area.

> A NEW COMPANY—JUNTOS SOMOS MAIS—AIMS TO DEVELOP, STRENGTHEN AND MODERNIZE THE RETAIL CONSTRUCTION MARKET IN BRAZIL

The benefits of the Juntos Somos Mais loyalty program address this need for professionalization, since prizes include store equipment, management systems, tools and training courses. Enrollment and access to prizes are done via web platform **(www.juntossomosmais.com.br)**, app and contacts via phone and WhatsApp.

According to Serrano, through Juntos Somos Mais consumers will see improvements in their purchase experience, as a result of more personalized service at stores, better qualified workers and a wider range of products.

Building materials store in Brazil

DIVERSE AND MULTICULTURAL TEAM

GRI 103-2 GRI 103-3

Our People, Management and Communications area is responsible for putting into practice one of our strategic pillars, "Empowered People", which is about bringing together people who take initiative and can help us achieve lasting results. We want leaders who are increasingly closer to their teams and create an environment of open dialogue, in a collaborative and informal manner, respecting the culture and unique characteristics of each of the regions where we operate.

In 2018, we took another step in this direction by extending our Diversity Program. As an example, we wrote our Manifesto for Diversity, which aims to ensure that diversity is part of who we are and who we want to be, by respecting the different skills and characteristics that make us unique. "For us, diversity is really important—and not a fad. One of our key advances in 2018 was to face this topic with seriousness, professionalism and respect," said Cristiano Brasil, global director of People, Management and Communications.

The program focused on awareness and open discussions around themes that have become our diversity pillars: people with disabilities, gender (with a focus on women's empowerment), race, LGBT and culture. The idea is to expand the program to include other discussion themes in the coming years.

"We understand the importance of diversity and we invested in it throughout the year. We leveraged the voice of our people who experience diversity on a daily basis, and also incorporated external experiences through partnerships, like the one we did with Zumbi dos Palmares University, to reinforce our commitment to the development and inclusion of afro-descendant leaders," said Thatiana Soto Riva, global manager of Recruitment, Training and Development.

EXPERIENCES

The program featured five panels with outside experts, complemented by discussions with employees who experience diversity in their personal and/or professional lives. The events were held in our corporate offices and transmitted via Workplace, and included the participation of our teams in Bolivia.

In addition, employees who have had their lives impacted by one of the diversity areas shared their stories on Workplace, generating greater empathy, awareness and engagement in the discussions. They told stories about how they have overcome challenges imposed by disabilities, sexual orientation, experiencing gender bias in a male-dominated industry or being part of a multiracial family.

"WE WANT DIVERSITY TO BE PART OF WHO WE ARE AND WHO WE WANT TO BE"

Cristiano Brasil, global director of People, Management and Communications

As evidence that diversity is a priority issue for us, for the first time in Brazil operations a woman became the head of one of our cement plants, our core business. After 10 years with the company, Adriana Celestino de Souza was invited to head our Corumbá (Mato Grosso) cement unit, transferring from our mortar operations in the Metropolitan Complex Barueri and Cajamar (São Paulo).

At VCNA, the diversity program addressed gender, generational and cultural differences. In July, we held the Women and Leadership training program in Toronto. The training included mentoring sessions and sharing of experiences and ideas. And on October 18, for the fourth consecutive year, we held Diversity Day events at all units in Canada and the United States. The goal was to share our strengths and experiences based on the theme that speaks to different facets of VCNA's culture, "We are multicultural. We are multitalented. We are multigenerational. We are multifaceted."

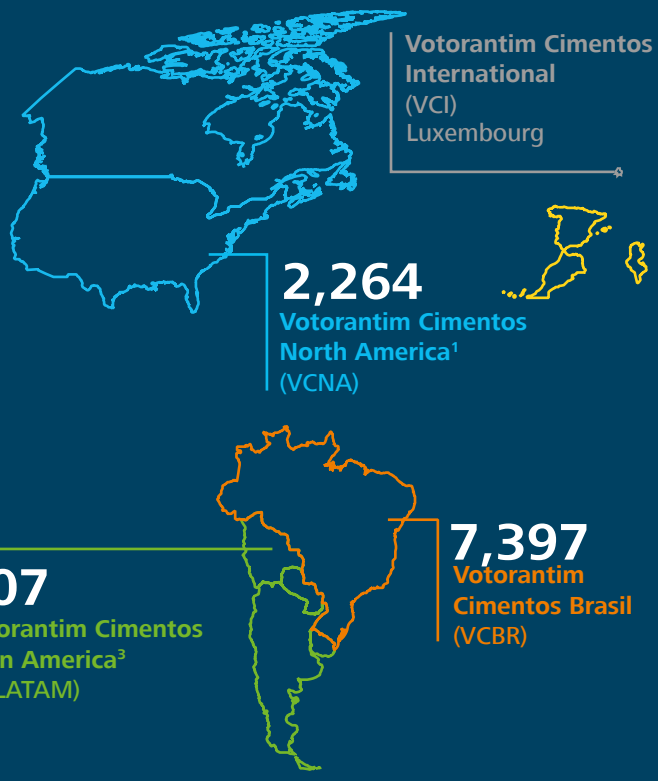
At VCEAA, VC Spain signed off a "Gender and Equal Opportunities Plan", as a result of an alliance between the Company and the workers' unions. This Plan reflects our commitment to not only fulfill legal requirements, but also to promote diversity and equality among women and men. This will be a live tool that will be constantly updated with new proposals.

TOTAL EMPLOYEES PER REGION

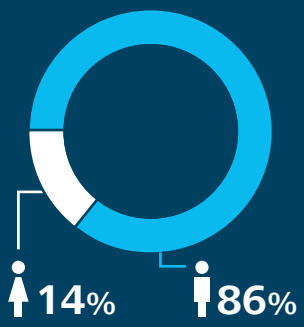
GRI 102-8

2018

11,932 employees
hourly and
monthly payed

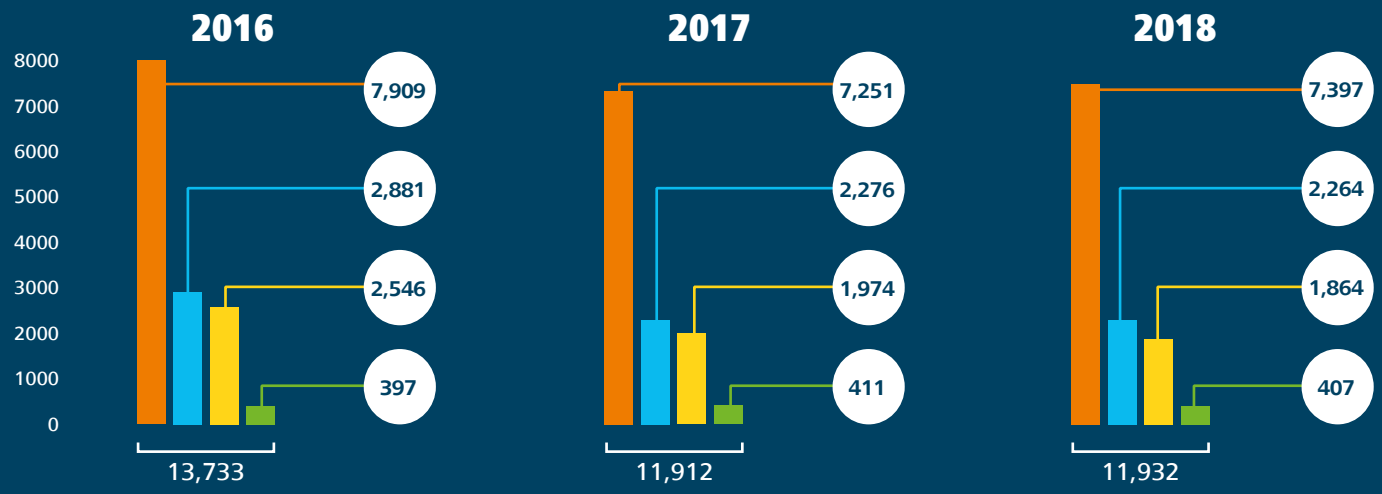


Total male and female employees



Previous years

- Votorantim Cimentos Brasil (VCBR)
- Votorantim Cimentos North America[1] (VCNA)
- Votorantim Cimentos Europe, Asia and Africa[2] (VCEAA)
- Votorantim Cimentos Latin America[3] (VCLATAM)



[1] Canada and United States.
[2] China, India, Morocco, Spain, Tunisia and Turkey in 2016 and 2017; Morocco, Spain, India, Tunisia and Turkey in 2018.
[3] Argentina, Bolivia, Chile, Peru and Uruguay in 2016; Argentina, Bolivia, Peru and Uruguay 2017; Argentina, Bolivia and Uruguay in 2018

2018 Trainee Selection In São Paulo, São Paulo (Brazil)

VALUING OUR TALENT GRI 103-2 GRI 103-3

To recognize our talent and facilitate career movements, we promote employee development, considering personal and professional growth, and identify professionals with potential to assume leadership positions. In 2018, we continued to encourage self-development, reaffirming the value of personal responsibility for career management and ensuring that leaders are increasingly prepared for the challenges of the future.

We made progress in implementing technical assessments to ensure clearer and more effective allocation of training priorities. With a look into the future, we offered a number of tools and initiatives, such as career workshops and career path models for employees to understand development paths and exercise ownership over their choices. We also created a network with leaders and mentors to support this effort, helping people to organize their own development goals.

The results are reflected in the number of internal promotions, movements between areas and international assignments. In 2018, VCBR filled 81% of vacant positions with internal candidates, including 117 changes in leadership positions. One of the highlights of the year was that 288 professionals switched areas in 2018, which is very positive considering the specialized nature of most of our activities. "We value the breadth of skills that are developed with area changes, because this results in more well-rounded professionals who are better prepared for more complex career challenges," said Cristiano Brasil, himself an example of this practice; after starting at Votorantim Cimentos in HR, he worked as director of Operations and, in 2017, took over the People, Management and Communications area.

We ended 2018 with an average of 20 hours of training per employee thanks to an investment of R$ 6.5 million in training and development. As part of the Votorantim Development System (VDS), our performance and career management processes include performance reviews that cover 100% of employees. In 2019, our evaluation methodology, which includes Individual Development Plans (IDPs) and influences development paths, will be revised to better reflect the company's current state, new technologies and new types of work relationships. GRI 404-1

PREPARED LEADERS

We want to ensure that employees in leadership positions are increasingly prepared to work efficiently and proactively on business processes and technologies, as well as on challenges related to people management.

To that end, we continued our two leadership development programs in Brazil—the Essential Leadership Program (ELP) and the Advanced Leadership Program (ALP)—and created another class in the Master Leadership Program (MLP). At the manager level, we also had two leadership training immersions, with a meeting for the entire team at a hotel in the countryside of São Paulo.

YOUNG POTENTIAL

Created initially to accelerate the career development of trainees and young professionals who had been with the Company for more than one year, in 2018 the Potenciar program was extended to other professionals in our team. The selection of 16 participants was not restricted by an

age limit, and the logic and English tests were replaced by a challenge in which candidates had to solve a company issue as if they were the CEO. With an average duration of 14 months, Potenciar includes face-to-face training, visits and a project developed with the use of innovation methodologies.

Another milestone was a "blind" recruiting process for our trainee program, which seeks to attract talented professionals to form our future leadership. The traditional long list of prerequisites was summed up in two criteria: candidates must have graduated within the last three years, from any college and in any career, and have intermediate-level English knowledge (as opposed to advanced-level, as previously required). Of the more than 24,000 candidates who applied to the program, which centered on the theme "Diverse Talents and Possible Futures", 60 were called for the first face-to-face evaluation phase and 20 for the final evaluation phase.

The in-person phase was carried out in partnership with Moradigna and provided candidates with the opportunity to work on remodeling low-income houses in a community in São Paulo *(Moradigna is detailed in Connected Volunteering, on page 69)*. More than just being a participant in a recruiting process, candidates and managers had the opportunity to witness the transforming impact of our products. Of the 20 finalists, 11 candidates began their trainee career in early 2019. With a more engaging and inclusive recruiting process, our goal was to positively impact the candidates. And through that, we discovered talented professionals who will be ready to build a lasting legacy in our company.

Developed in Brazil, the trainee program is a year and a half long, including a four-month integration phase. It offers participants the opportunity to experience various operations and departments and work on three projects in different areas of the company. "What makes VC's program unique is that it values the diversity of talent that we want to be part of our history, while providing the chance for participants to take charge of their development through challenging experiences and projects," said Thatiana Soto Riva, global manager of Recruitment, Training and Development.

Collaborative Communication

Lasting relationships are a key driver for the long-term sustainability of our company and our entire value chain. They are built on relevant and transparent partnerships—a process in which communication is a key component. We believe that communication is essential for improving our reputation and that open dialogue is essential for building trust and enhancing transparency between the company and its stakeholders.

In 2018, we invested in more personal and collaborative communication, portraying employees as the dominant forces in the company's history, thus strengthening their—and their families'—pride and sense of belonging.

With that in mind, we intensified the use of storytelling—a narrative technique to tell relevant stories—in our internal and external communications campaigns.

AGILITY AND SOCIAL MEDIA ENGAGEMENT

In November, we celebrated the first anniversary of Workplace, our internal corporate social media platform. We believe that communication must be continually improved, with the goals of strengthening relationships, engagement and culture, increasing agility in decision-making and spreading innovative ideas in an efficient and practical way.

Workplace, a technology developed by Facebook, received widespread employee support. At the end of the first 12 months, it had more than 6,700 users, 528 groups and more than 20,000 posts throughout all regions. The groups, both open and closed, share important information for everyday business with agility, exercising complete freedom of expression and helping reinforce our belief in open dialogue.

Corporate, global and regional groups (Radar Brazil, Radar VCNA, Radar VCEAA and Connection) are open to all employees, who can publish news and business content that are of interest to everyone in the organization. In that way, we learn that anyone can communicate, share and recognize one another.

To commemorate the anniversary, we had our leaders talk about the importance of Workplace to the business.

1 ano de workplace

1 YEAR OF WORKPLACE

6,700 users (registered accounts)

205 active groups

892 posts on Radar Brazil:

65,000 reactions

5,000 comments and

3,700 active members

INTERNAL COMMUNICATIONS CHANNELS

LEADERSHIP – The Communications area develops specific plans and supports senior leaders and managers as they communicate and engage with their teams.

THE FIRST 100 DAYS OF A LEADER – The Communications area supports the first 100 days of managers in a new position or new area by offering techniques and tools to facilitate communication and engagement and to build trust among the team.

EXECUTIVE BULLETIN ("INFORME EXECUTIVO") – A closed Workplace group for managers to share guidance and information before it gets cascaded to the rest of the organization.

MONTHLY RESULTS – Every month we present company results to managers and encourage them to share key information with their teams. These meetings include time dedicated to recognizing and sharing best practices and for managers to answer questions about the business.

COMVC – We hold quarterly meetings that are broadcast live for all units in Brazil. They are led by our global CEO and have the participation of other company leaders to discuss specific themes and projects. These meetings serve to promote open dialogue, share best practices and recognize significant service anniversaries and employees who have worked on projects that have made a difference.

DISCUSSIONS WITH THE LEADERSHIP ("BATE-PAPO COM A LIDERANÇA") – At these meetings, managers present company results, recognize employees and experience the environment and work routine of their areas. In 2018, these meetings were broadcast live via Workplace to specific groups, with employees participating via comments.

Image and Reputation

Our external communications strategy is based on dialogue and transparency in the process of building lasting relationships and promoting our company's positioning, in a way that enables us to create value for the company.

In 2018, 1,762 positive news items were published about Votorantim Cimentos; most of this coverage was about strategic themes for the company. We also increased our participation in social media to promote the themes of innovation and sustainability.

Created by a group of Votorantim S.A employees in 2015 to promote discussions on innovation and sustainability, the Vototalks initiative evolved in 2018, becoming one of the main platforms for dialogue and culture promotion of the holding company and its subsidiaries. Vototalks are periodic meetings around varied topics, carried out with the goal of sharing knowledge, opinions and market news between employees and external guests who are renowned specialists on themes such as: The Future and the New Business Models, Culture of Error, Gender Equity: Women in Leadership Positions, and How to Think About Innovation in the Work Routine.

SOCIAL MEDIA

We established consistent dialogue with our stakeholders through social media and strengthened our relationships with influencers within each platform. We improved the quality of our communication by using a more personal approach, often based on storytelling techniques.

We organized meetings with influencers called LabDay to offer them the opportunity to experience our products, visit our plants and engage in dialogue on innovation. The initiative impacted journalists and digital influencers through Instagram, reaching approximately 42,000 people.

We operate on the different platforms in a way to position ourselves as a global organization, while also considering our regional brands and businesses. We ended 2018 with 327,179 followers on LinkedIn and 72,608 on Facebook, where our posts increased the engagement rate by approximately 2.8%. On Instagram, we increased our number of followers from 11,000 at the end of 2017 to 16,274 at the end of 2018.

OUR STAKEHOLDERS

GRI 102-40 GRI 102-43 GRI 102-42

To strengthen the connection with our different stakeholders, striving to maintain broad, agile and transparent communication.

VOTORANTIM CIMENTOS

STAKEHOLDER	DESCRIPTION	COMMUNICATION CHANNELS AND ENGAGEMENT
SHAREHOLDERS	Votorantim S.A.	Board of Directors meetings, quarterly results conferences, Integrated Report
FINANCIAL COMMUNITY	Banks, investors, multilateral lending agencies	Financial reports (quarterly and annual), roadshows, investors briefings, Integrated Report
COMMUNITIES	12 countries	Public meetings and consultations, Open Doors programs, community councils, complaint mechanisms, Ethics Line, Business Ethics Office, website, Integrated Report, social media
CUSTOMERS	Trade (wholesale and retail), construction companies, government and industry	Website, apps (VC Online, Obra Fácil, Engemix app), social media, loyalty programs (Juntos Somos Mais), Customer Service (chat and phone), CRM (phone), Integrated Report, satisfaction surveys, e-mail marketing
CONSUMERS	Masons, Contractors	Website, apps (VC Online, Obra Fácil, Engemix app), Social media, Customer Service (chat and phone), CRM (phone), satisfaction surveys, e-mail marketing, Loyalty programs (Juntos Somos Mais)
EMPLOYEES AND CONTRACTORS	Employees, Contractors	Meetings, performance evaluations, climate surveys, ComVC, Psiu Bulletin Board, Discussions with the Leadership, Workplace, Integrated Report, themed events, intranet
UNIONS	Union	Union negotiations, public prosecutors, or Ministry of Labor hearings, positive dialogue agendas and judicial processes

OUR STAKEHOLDERS GRI 102-40 GRI 102-43 GRI 102-42

VOTORANTIM CIMENTOS

STAKEHOLDER	DESCRIPTION	COMMUNICATION CHANNELS AND ENGAGEMENT
ASSOCIATIONS GRI 102-13	• Cement Sustainability Initiative (CSI) • European Cement Research Academy (ECRA) • Brazilian Institute of Mining (Ibram) • Brazilian Portland Cement Association (ABCP) • Brazilian Association of Building Materials Industry (Abramat) • National Union of the Cement Products Industry (Sinaprocim) • Brazilian Concrete Institute (Ibracon) • Trade Union of the Construction Industry of the State of São Paulo (Sinduscon/SP) • Portland Cement Association and Cement Association of Canada • National Industry Union (SNIC) • Global Cement and Concrete Association(GCCA) • Federación Interamericana del Cemento (FICEM) • Turkish Cement Manufacturers' Association (TCMA) • Cement Industry Employers' Union (CIEU) • National Chamber of Cement Producers of Tunisia • Arab Association for Cement and Building Materials • Association Professionnelle des Cimentiers (APC) • Fundación Laboral del Cemento y el Medio Ambiente (CEMA Foundation) • Fundación Laboral Andaluza del Cemento y el Medio Ambiente (FLACEMA) • Oficemen - Association of cement manufacturers in Spain.	Meetings, participation in governance bodies, website, Integrated Report, social media
GOVERNMENT AGENCIES	Governments (federal, state and municipal) of the 12 countries where we operate	Meetings, public consultations, website, Integrated Report, social media
REGULATORY BODIES	National Department of Mineral Research (DNPM), National Mining Agency (ANM) , more than 50 environmental agencies (federal, state and municipal), sector organizations	Meetings, public consultations, website, Integrated Report, social media
SUPPLIERS AND PARTNERS	Material and service providers Startups	Meetings, apps (app for drivers), website, Integrated Report, social media
SOCIAL ORGANIZATIONS	WBCSD, CEBDS, GRI	Meetings, public consultations, website, social media, Integrated Report
ACADEMY AND RESEARCH INSTITUTES	University of São Paulo (USP) University of León (Spain) University of Córdoba (Spain) Middle East Technical University (Turkey) Bozok University (Turkey)	Meetings, website, Integrated Report, job fair, social media
INFLUENCERS/ MEDIA	Media and opinion leaders	Meetings, press releases, website, Integrated Report, social media

PERMANENT ALIGNMENT

GRI 103-2, 103-3

Plant in Itaú de Minas, Minas Gerais (Brazil)

For us, sustainability means reconciling internal business growth targets with the current and future needs of society by offering eco-efficient and innovative products to our customers. It also means maintaining initiatives for the local development of our communities and acting in an ethical and transparent manner, in accordance with the laws and regulations of the countries in which we are present.

Our company leaders participate in quarterly global sustainability forums to monitor progress and challenges in our operations. This is a way to instill the broad concept of sustainability across our teams and ensure that it permeates the entire organization. These meetings reinforce our Sustainability Commitments, through which we set performance targets to be achieved by 2020 and influence the performance evaluation and variable compensation of our leaders.

Globally, we have taken new steps to establish this broad sustainability framework. A priority in 2018 was to strengthen the Global Sustainability area, which was created in 2017 to concentrate the activities of Health and Safety, Environment, Social Responsibility, Eco-efficiency and Energy Management.

We also created the Global Safety and Environment Committees, with the participation of VCBR, VCNA, VCEAA and VCLatam. We carried out a global assessment of social practices and initiatives in all operations and countries where we operate, aiming to improve our social management globally, while respecting the approach and culture of each country.

Our environmental performance is guided by our Global Environment Policy, a document that drives our work on many of our 2020 Sustainability Commitments. We also have the Green Rules: ten standards that make this policy tangible and guide the performance of all areas and the behavior of all employees regarding environmental issues. GRI 102-11

2030 AGENDA

In 2018 we started to discuss a 2030 update of the goals and targets we have for 2020—ensuring alignment with our purpose, "Life is made to last". The 2030 indicators, which will be part of our Global Sustainability Planning, will also be aligned with the Sustainable Development Goals (SDGs), which were launched by the United Nations (UN) as an agenda to be met by countries, business institutions and society by 2030.

The Cement Sustainability Initiative (CSI) mapped out industry-related SDGs to improve the way member companies measure their performance on issues related to the development of the communities they are part of. Within this framework, it is up to each company to establish its own goals according to its local situation. We will develop our approach to this framework throughout 2019.

SELF-ASSESSMENT

In 2018, we strengthened our environmental governance in Brazil by expanding our Environmental Management System. In addition to monitoring routine environmental indicators in our operations, performing internal, external and certification audits, and managing risk and compliance, we created a self-evaluation tool for all industrial managers.

This self-evaluation ensures that the operational managers know, manage in detail and are effectively involved with the environmental issues under their responsibility. In 2018, 116 managers responded to this questionnaire, which includes issues that were previously managed exclusively by the environmental team. Initially, this evaluation will be conducted quarterly, to ensure that new managers or new risks and opportunities are considered.

CSI, NOW GCCA

In 2018, the CSI company-members decided to transform the CSI into the Global Cement and Concrete Association (GCCA), to include the concrete segment in the scope of the organization, which was created in 1999 exclusively for the cement industry. The GCCA maintains a strategic partnership with the World Business Council for Sustainable Development (WBCSD) and includes companies that will represent a larger portion of the world's cement and concrete capacity; the goal is to reach at least 50%. Ten global companies came together to launch the organization, including Votorantim Cimentos (which also participated in the creation of the CSI).

The work of the GCCA is organized around three dimensions (sustainability, innovation and concrete positioning) and five pillars (health and safety, climate change and energy, social responsibility, environment and nature, and circular economy).

WE ARE UPDATING OUR TARGETS FOR 2030, ALIGNED WITH THE SUSTAINABLE DEVELOPMENT GOALS

During 2018, VC occupied the vice presidency of the CSI. During the year, we contributed to the incorporation of the Net Impact Assessment (NIA) methodology into biodiversity indicators and the implementation of five global social responsibility indicators (community engagement, employees hired in the local community, expenses on local vendors, employees by gender and training per employee). Circular economy indicators were also created to monitor co-processing, reverse logistics and water reuse, among other issues.

CSI AUDIT

In 2018 all of our units participated in the CSI Sustainability Charter compliance audit. We received a maximum score in four of the seven indicators (CO_2 and energy management, use of materials and fuels, health and safety, and emission reporting and monitoring) and improved our overall position in relation to 2014, when the last audit was performed.

2020 SUSTAINABILITY COMMITMENTS

Target met | Target on schedule | Target behind schedule

2020 Targets	Key achievements in 2018	Status/Progress
Health and Safety: • Ensure the effective adoption of the Global Health and Safety Policy and the Life Saving Rules	• Creation of the Global Safety Committee • Quarterly meetings of the Safety Committees in each country • Emphasis on the adoption of the Critical Risk Protocol	Target on schedule
Health and Safety: • Promote healthy and safe working conditions for all employees	• Investment to update machine protections, electrical systems and fire suppression systems • Launch of SafeStart (behavioral development) in Brazil	Target on schedule
Health and Safety: • Achieve lost-time injury rate lower than 0.4 among direct employees	• Total number of lost-time injuries (LTI): 50 (54 in 2017) • Frequency rate from 1.40 in 2017 to 1.41 in 2018 for employees	Target on schedule
Logistics and Supply Chain: • Implement standards that ensure sustainability in our logistics and supply chain operations	• 100% of suppliers in Brazil registered and approved through negotiations conducted by the Procurement team	Target met
Supply Chain Standards: • Promote sustainable supply chain standards through our business units	• 100% of suppliers in Brazil registered and approved through negotiations conducted by the Procurement team	Target met
Ethical Business Practices: • Ensure that all our operations are run in an ethical manner and in compliance with the Votorantim Code of Conduct	• Code of Conduct was promoted globally • Critical compliance policies (Anticorruption, Antitrust, Gifts and Entertainment, Conflict of Interest, and Donations and Sponsorships) were updated at VCBR and implemented at VCNA and VCEEA • Development of a Global Government Relations Policy • Implementation of the VCBR Government Relations Manual and training (focal points) of employees nominated by the directors of each regional office/area • Face-to-face training (VCBR) on Compliance (critical policies) in the Xambioá, São Luis, Salto/Santa Helena and Argamassa (Camaçari, Limeira, Barueri and Cajamar) units, and in events for specific groups, such as "Trilhas Day" (sales/marketing), social responsibility facilitators, logistics (leaders) and procurement • Face-to-face training (VCEAA) on Compliance (critical policies) in all countries.	Target met
Environmental Policies: • Ensure the implementation of our Global Environmental Policy and Green Rules	• Global policy implemented in all regions	Target met
Sustainable Products and Services: • Promote the launch of new sustainable products, solutions, services and innovations • Achieve a clinker/cement factor[1] of 72%	• We ended 2018 with a clinker/cement factor of 75.2%	Target on schedule
Renewable Fuels: • Reach a 30% level of non-fossil fuels use in our cement plants	• We achieved a 18.5% rate in the use of alternative fuels in our clinker kilns	Target behind schedule
CO_2 Emissions: • Reduce our CO_2 emissions per ton of cement by 25% compared to 1990 levels	• Our emissions have decreased 18.6% in relation to the base year (1990), thanks to an increase in thermal substitution and a reduction in the clinker/cement factor	Target on schedule
Emissions: • Reduce emissions of particulate matter, NOx, and SOx, to 65g, 1,950g, and 750g per ton of clinker, respectively	• Emissions of particulate matter, NOx and SOx were 69g, 2,102g and 847g per ton of clinker respectively, compared to 62g, 2,144g and 638g per ton of clinker in 2017. We plan to invest in filter retrofit, abatement systems and gas scrubbers to reduce our PM, NOx and SOx emissions	Target on schedule
Water: • Implement a water management plan in our business units located in areas of scarcity	• Evolution of Measure 1 of the water roadmap *(see page 65)*, ensuring measurement in 100% of VCBR collections in 2019. We also realized actions that contributed to the evolution of Measures 3, 4 and 6.	Target behind schedule
Biodiversity: • To ensure that all of our quarries have rehabilitation and biodiversity management plans for local and sensitive biodiversity regions	• Development of a biodiversity plan for seven units (9 quarries) identified as areas of high biodiversity relevance. The process was divided into four phases; in 2018 all steps were performed in one of the units and steps 1 and 2 were performed in the remaining six units	Target on schedule
Communities: • Ensure the implementation of community engagement plans in the communities in which we operate that have a high degree of social vulnerability	• Implementation and execution of Community Relations Plans in 100% of the priority units for External Social Investments in Brazil • Global Assessment of Social Performance: 101 operational units surveyed in eight countries with the participation of 94 leaders • Creation of a Standard Operating Procedure to formalize the creation of methodologies for Community Relations Plans in Brazil	Target on schedule

[1]Clinker/cement factor = ratio of total clinker consumed to total cement or cementitious product produced.

Plant in Santa Helena, São Paulo (Brazil)

SAFETY AS A VALUE

GRI 103-2 GRI 103-3

Safety is our main value. We ensure safe working environments and promote a culture of safety—at home and at work—as a commitment from each one of us. Every year we celebrate Global Safety Day, an engagement campaign with participation from all employees, in all units and in all countries where we operate. In 2018, our theme was "See Something? Say Something!", to encourage employees to immediately communicate perceived risks and to recognize personal and shared responsibility throughout the company.

We have specific targets for all regions and for each unit. We use the performance of our industry peers, as assessed by the Cement Sustainability Initiative, as our benchmark. Our goals are supported by our safety guidelines: Safety is a Value; Safety Begins with Me; regulatory standards; risk protocols; safe behavior; concepts, principles, procedures, tools and surveillance; broad action; comply and ensure compliance; consequence management; and zero accidents.

> "WE WILL INVEST R$ 200 MILLION BETWEEN 2016 AND 2021 TO ENSURE THE BEST STANDARDS IN THE INDUSTRY"

Since 2015, we have allocated more than R$ 95 million—R$ 29 million in 2018 alone—to update our facilities and improve our safety standards. "We have a plan that started in 2016 and is estimated to be concluded by 2021, with a total investment of more than R$ 200 million, to update machine and equipment protection, fire suppression systems and electrical systems, among others, as a way to maintain the best standards in the industry," said Luiz Germano, general manager of Global Sustainability.

Our Global Safety Committee, created in 2018, brings together representatives from all regions to monitor our performance and establish guidelines for our global safety management system. In all countries, Safety Committees meet quarterly and those responsible for safety meet at least every two months. We perform cross-audits and consequence management and share best practices. Our Safety Talks and our program to recognize best practices in safety are global practices.

Asment Temara plant (Morocco)

EVOLVING INDICATORS

Our commitment for 2020 is to achieve a global lost-time injury rate lower than 0.40. In 2018, our global LTI frequency rate indicator was 1.41 for employees and 0.77 for contractors (1.40 and 0.77, respectively, in 2017). Our goal is zero accidents and for all employees to return home safely at the end of every work day.

We reduced the number of fatalities in relation to 2017 but unfortunately we still recorded four deaths among contractors (three off site and one on site).

Three of the four fatalities were caused by traffic accidents on federal and state highways. The fourth occurred during concrete pumping; the boom of the concrete pump accidently hit a high voltage line during the cleaning process. The contracted worker was struck by the electric discharge and died on-site.

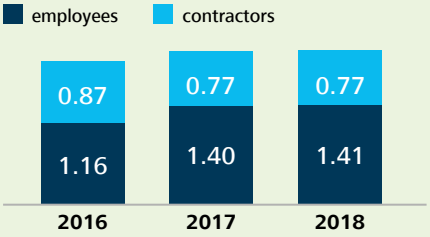
To prevent off-site accidents, Votorantim Cimentos has continuously invested in training, "blitzes" and campaigns to increasingly raise drivers' awareness about the importance of safe and preventive driving, including on highways.

The implementation of the **SafeStart** program will also be extended to several Engemix distribution centers and units, with the goal of contributing to behavioral change, inside and outside the work environment. The application of these programs' concepts reduces accidents not only in the workplace but also in traffic and in our homes.

At VCNA, where we had one employee death in 2017, there were no fatalities during 2018. In 2018, the LTI frequency rate was 1.66 among employees. VCNA's Safety CEO Award, an award created to recognize best practices, is expected to be extended to other regions.

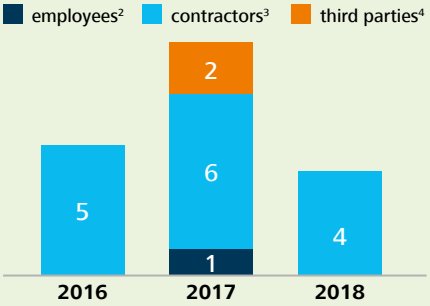
VCEAA ended 2018 with an accident frequency rate of 0.25, an indicator that has steadily declined since 2016 as a result of the Critical Risk Protocol Audit Plan, a methodology that also supports the work around safety in Brazil. The region has a Safety Committee composed of the CEOs of each country and representatives from the supply chain, and includes cement, aggregates and concrete plants, as well as transportation, an area with a higher risk of accidents. Two years ago, the region developed an action plan that defines clear responsibilities and provides for continuous improvement. The Latin American units were included in the Global Committee and exchange practices with the VCEAA countries.

GLOBAL FREQUENCY RATE[1]



1 Calculated by taking the number of lost-time injuries per 1,000,000 (1 million) hours worked both for employees and for the contractors in the reporting period.

NUMBER OF FATALITIES[1]



1 Considers occurrences inside and outside cement, aggregates and concrete facilities.
2 Employees: Workers hired directly by any company of which we have management control and those in which there are technical management agreements.
3 Contractors: All independent professionals, from companies or associations, hired to perform a specific job.
4 Third parties: Customers and visitors who travel to company facilities, and drivers or passengers involved in accidents with the general population occurring outside our facilities.

SAFESTART TO RAISE AWARENESS

SafeStart, an advanced safety awareness program, enabled significant improvement in the indicators of the Sobradinho (DF) unit since it was adopted as a pilot in 2016; the frequency rate (LTI + NLTI) went from 4.95 in 2015 (three lost-time injuries and six non-lost-time injuries) to 1.47 in 2018, with no lost-time injuries. The unit also registered a record 586 days without lost-time injuries.

After the success in Sobradinho, in 2018 we began to implement SafeStart in eight of our 24 cement units, which account for 61% of the lost-time accidents in Brazil, as well as four distribution centers (Mucuripe/Northeast, Goiânia/Centro-Norte, Osasco/Southeast and Maringá/South) and four Engemix branches in southern Brazil (São José, Florianópolis, Canoas and Sapucaia do Sul).

This is a behavior development program that helps reduce accidents at work, on the road and at home. It considers that 95% of accidents are fundamentally caused by four physical and mental states (hurry, frustration, fatigue or complacency), which lead to four critical mistakes, turning minor risks into major risks and causing accidents. The program does not replace any other program but complements existing tools.

Since SafeStart is extended to family members, it encourages more effective participation, daily application and subsequent behavior change.

Lower Emissions and Higher Energy Efficiency

Our commitment to reduce atmospheric emissions and thermal consumption is at the heart of our co-processing and energy efficiency initiatives. In 2018, we designed a global strategy to position ourselves as an industry benchmark in low CO_2 emissions. During the 24th UN Climate Change Conference (COP24) in Poland, we shared the best practices of our company and how we are adapting to this new low-carbon economy.

Our priority is to progressively reduce the clinker/cement factor, as a way to reduce our costs and our environmental impact, since clinker production accounts for 90% of the energy we consume and 90% of our GHG emissions. At the same time, we are mapping how national or regional legislation—and their possible changes—affect each of our units, so we can work on the initiatives and investments that are necessary to maintain our competitiveness.

Our communications efforts on emissions are paramount, since in many countries and communities there is little information and strong resistance to the use of alternative fuels (AFR). "This is our primary focus" says Joe Horton, vice president of Business Development and Engineering, VCEAA. "It's important to be transparent with the community about what we're doing."

"SHADOW PRICE"

We reinforced our position by adopting an internal carbon price, which is taken into account during investment decisions. We reviewed future scenarios using an internally set price, based on the tons of CO_2 emitted, to analyze the cost of initiatives that reduce greenhouse gas emissions and, consequently, the impact on production costs. These discussions are reviewed by the Global Capex Committee, which was created in 2018 and prioritizes investments according to their expected return *(the committee is detailed in Financial Management, on page 30).*

"The use of a 'shadow price', as it is called internally, determines a potential future price of CO_2 emissions. That way, we bring future sustainability challenges to present value," explained **Álvaro Lorenz**, Global Technical and Sustainability director. "This is the best way to prepare ourselves as a company and work towards sustainability in the corporate world."

EMISSIONS INVENTORY

We perform an annual inventory of greenhouse gas (GHG) emissions by our cement plants and units of concrete, aggregates, mortar and other products. For cement, we use the CSI methodology and for the other products we use the GHG Protocol tool.

Logistics in Charlevoix, Michigan (United States)

Reflecting our efforts to improve our environmental footprint, we have reduced our CO_2 emissions by 18.6% in relation to the 1990 base year, which we adopted as our benchmark for our 2020 target of a 25% global reduction. In 2018, our emissions were 622 kg of CO_2 per ton of cementitious products, compared to 763 kg in 1990.

We also measure our emissions of particulate matter, sulfur oxides (SOx) and nitrogen oxides (NOx). In 2018, they reached 69g, 2,102g and 847g per ton of clinker, respectively,remaining very similar to the previous year (62g, 2,144g and 638g per ton of clinker in 2017).

"To ensure better emissions performance, we plan to install baghouse filters in all our plants in Brazil by 2028, when we will eliminate 100% of the electrostatic filters, which despite fully meeting emission standards are less efficient," said Luiz Germano, general manager of Global Sustainability. In 2019, we will continue to update our industrial facilities, installing new baghouse filters in Sobral and Salto de Pirapora.

In Canada, we are setting up a scrubber at the Bowmanville unit. At VCEAA, as part of the AFR programs in all of our plants, we are taking measures to prevent dust emissions, such as covering storage areas.

CARBON BUSINESSES

We closely follow the different national and regional laws that regulate greenhouse gas (GHG) emissions, especially carbon dioxide (CO_2), globally. In countries of the European Union, such as Spain, the restrictions are expected to increase over the years. In 2018, the new elected government in the province of Ontario, Canada, decided to change the clean energy policy, which affected the negotiations of carbon credits among companies. In Brazil, there is currently no legislation on the matter.

"Although the regulation in Canada won't be finalized until June of next year, it will take effect in January, which means that for some time we'll be under a law that we don't know in detail," said Bill Asselstine, vice president of Sustainability, VCNA. Regulatory changes may determine that a sector that has received resources for emissions below its limit will now have to buy carbon credits, which tend to increase in price.

> ACHIEVING A LOWER CLINKER/ CEMENT FACTOR IS A PRIORITY TO REDUCE COSTS AND ENVIRONMENTAL IMPACT

In Spain, we were entitled to credits for emissions below the regulatory limit in 2018. In 2020, however, phase 3 of the European Union's cap and trade program will be in effect, with a reduction in carbon credit, which will have a financial impact on companies that are not prepared to cut emissions. "In Spain, we are lowering the clinker/cement factor, without compromising on quality, and increasing the use of alternative fuels and biofuels," explained Joe Horton, vice president of Business Development and Engineering, VCEAA.

There are two models of regulation. One is cap and trade: a government sets an annual emissions cap for industries; companies with emissions above the cap can trade or buy credits from companies with emissions under the cap emissions cap, issues a number of permits for industry emissions within this limit, taxes emissions above the cap and allows companies to sell their allowances. This is a mechanism adopted in parts of Canada (excluding Ontario as of July 2018) and the European Union. Another model is pure and simple taxation on emissions volumes. In Argentina, for example, there is a tax on petroleum coke, which increases over ten years.

New Cement Roadmap

In April 2018, the CSI and the International Energy Agency (IEA) launched an update of the cement industry's technology roadmap. The document, Low-Carbon Transition in the Cement Industry, provides information, identifies opportunities and aims to stimulate an international collaborative effort for the cement industry to contribute to the long-term CO_2 emission reduction targets.

The cement industry consumes 7% of the energy generated for industries in the world and accounts for 7% of industrial emissions of carbon dioxide. We actively participated in the development of the global technology roadmap and also of its replication in Brazil, conducted by SNIC (National Union of the Cement Industry). The Brazilian document, to be launched in 2019, maps current and potential technologies that can help the cement industry reduce its greenhouse gas emissions and improve energy efficiency, thus meeting future demands of society and complying with public policies.

Rules for Thermal Consumption

Optimizing the use of fuels—both renewable and nonrenewable—is one of our goals. In Brazil, in 2018, we implemented the Ten Golden Rules for Thermal Consumption, a list of best practices covering all phases of clinker production, from mining to combustion. With that, we standardized our practices in all of our units, a process that involved the participation of all areas.

At VCEAA, we audited our plants to map out potential improvements that, when combined, would lead to greater efficiency and lower energy consumption. In Tunisia, a waste heat recovery (WHR) system, which recovers waste heat from the production process and turns it into energy, has been in use since the end of 2017. In 2018, the WHR system enabled us to substitute 28.8% of our plant's fuel consumption and, consequently, reduce our production costs. In Morocco, wind power sources accounted for 77% of the energy consumed in the Asment Temara plant in 2018.

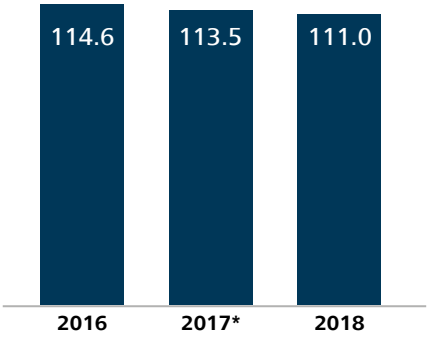
ENERGY CONSUMPTION

Our cement production processes consumed 91,160,894 GJ of energy within the organization, in sources under our control, and 7,844,530 GJ in activities outside the organization, which are not managed directly by us (such as fuel used by third-party trucks). The total volume corresponded to an energy intensity of 111.0 kWh per ton of cementitious products, compared to 113.5 kWh/t in 2017. In the year, 27.5% of the energy we consumed in Brazil originated from renewable sources (such as hydroelectric), compared to 25% in 2017.

Asment Temara plant (Morocco)

ENERGY INTENSITY

(kWh/t of cementitious product) GRI 302-3



* Adjusted data published in 2017 GRI 102-48

Preserving Biodiversity GRI 103-2, 103-3

In 2018, we developed Biodiversity Management Plans (BMP) in one unit and started doing BMPs in six others. Advancing towards our 2020 Commitment target of detailing action plans for quarries located in sensitive areas, thus ensuring that we are protecting flora and fauna species. In 2019, the current percentage of units that have BMPs implemented is 21%, compared to 10% in 2017.

Also in 2018, we began adopting the new Net Impact Assessment (NIA) methodology developed by the CSI to identify the real negative and positive impacts of mining activities, from quarry opening to closure and decommissioning. One of the objectives of the NIA is to ensure that the local fauna and flora are at least at the same level as before the start of operations. At the unit of Sobradinho (DF), which was our pilot for the application of NIA, we recorded a positive result, considering that large extensions of the surrounding area have been recovered during the operation of the quarry.

We also participated in the United Nations Convention on Biological Diversity (CBD) held in Egypt in November. We presented our work on assessing impacts and opportunities at the Business Forum and discussed our environmental practices, including area prospection and production through quarry closure.

Another advance in 2018 was the beggining of the recovery process of three areas used in mining activities using ARO (Asset Retirement Obligation). Proceeds are included in the financial statements and may be used before the closure of the operation. This ensures that areas are recovered concomitantly with the operation, advancing their integration into the landscape at the end of the quarry's life.

POTY GEOSITE

In our areas of operation, in addition to high biodiversity we may also find geological or archaeological sites. In these cases, we preserve and assess the areas to identify scientific, academic or touristic potential, while respecting the uniqueness of each site.

In November, we opened for visitation the K-Pg Poty quarry Geosite, located in the Paulista (PE) unit. The area holds evidence of the impact of a meteor that caused the extinction of up to 85% of the Earth's living species, including dinosaurs, 66 million years ago. It is the first Brazilian private geosite to be open to educational visits (universities) and scientific visits (researchers).

The name of the site refers to the era when this phenomenon occurred: the end of the Cretaceous (K) and beginning of the Paleogene (Pg) period. The evidence was discovered in our geosite in 1993 by researchers Gilberto Albertão and Paulo Martins. Measuring approximately 65,000 square meters (equivalent to ten soccer fields), the area was preserved and divided into four geological exhibition areas.

COVA EIRÓS

We are currently working in collaboration with the community and other stakeholders in the development of a Sustainable Land Management Plan (SLMP) for Cova Eirós, a karstic cave adjacent to the quarry operations to our Oural plant (Spain), a site with paleontological and archaeological remains dating between 30,000 and 50,000 years. After years of surveys and studies, the site is now known as an important paleontological site, with parietal artistic manifestations corresponding to the Upper Paleolithic era, allowing to suppose a possible coexistence between Homo Neanderthalensis and Homo Sapiens.

NEW EVALUATION METHODOLOGY IDENTIFIES REAL NET IMPACT OF MINING ACTIVITIES

To ensure the preservation of the cave while continuing the mineral exploitation, a Control Protocol and continuous surveys are carried out by specialists. We have already begun to rehabilitate the zone above the Cova Eirós.

Today the community sees Votorantim Cimentos as a company open to dialogue, which, combined with other environmental care initiatives, led us to receive the main sustainability award by the Spanish Aggregates Association: first place in the Economic Contribution and Value Added to Society category. We also received two other sustainability awards from the association: first prize in the Restoration category, for our work at the El Toril quarry, and second prize in the Biodiversity category, for the regeneration of the Alcolea del Rio quarry, both in Seville, Spain.

Mining area in Cuiabá, MT (Brazil)

Monitoring and Measuring Water GRI 103-2 GRI 103-3

In 2018, we reassessed areas of water scarcity in all countries where we operate to ensure that all impacted units have Water Management Plans. In addition, in Brazil, we continued to work to reach our goal of installing water metering systems in 100% of our cement plants, thus fulfilling one of the commitments of our Water Roadmap: Measurement and monitoring.

Among our units, cement plants consume the most water. The meters are being installed regardless of whether or not the plant is located in areas of water scarcity. This is a key step to prepare our units, and using online measurement and control systems, to implement individual management plans to ensure that leak and waste control is part of their daily management.

We were also able to plan and implement rainwater reuse and harvesting systems to fulfill another of the commitments: Innovations that contribute to the environment. The Water Roadmap is a set of management measures aimed at minimizing the impact of the Votorantim Cimentos Brazil operations on water use.

COMMITMENT TO WATER SECURITY

In 2018, during the World Water Forum in Brazil, we became signatories to the Brazilian Business Commitment to Water Security, which brings together approximately 60 of the largest business groups in the country under the auspices of the World Business Council for Sustainable Development (WBCSD). By joining this initiative, we committed to set targets to increase the inclusion of water-related issues in our business strategy and to measure and publicly disclose how we manage water.

6 MEASURES OF THE WATER ROADMAP

1. Measurement and monitoring
2. Reduction in consumption and improvement of water quality
3. Protection of water resources
4. Incentive for good water practices by our suppliers
5. Innovation that contributes to the environment
6. Partnerships for a better future

CIRCULAR ECONOMY

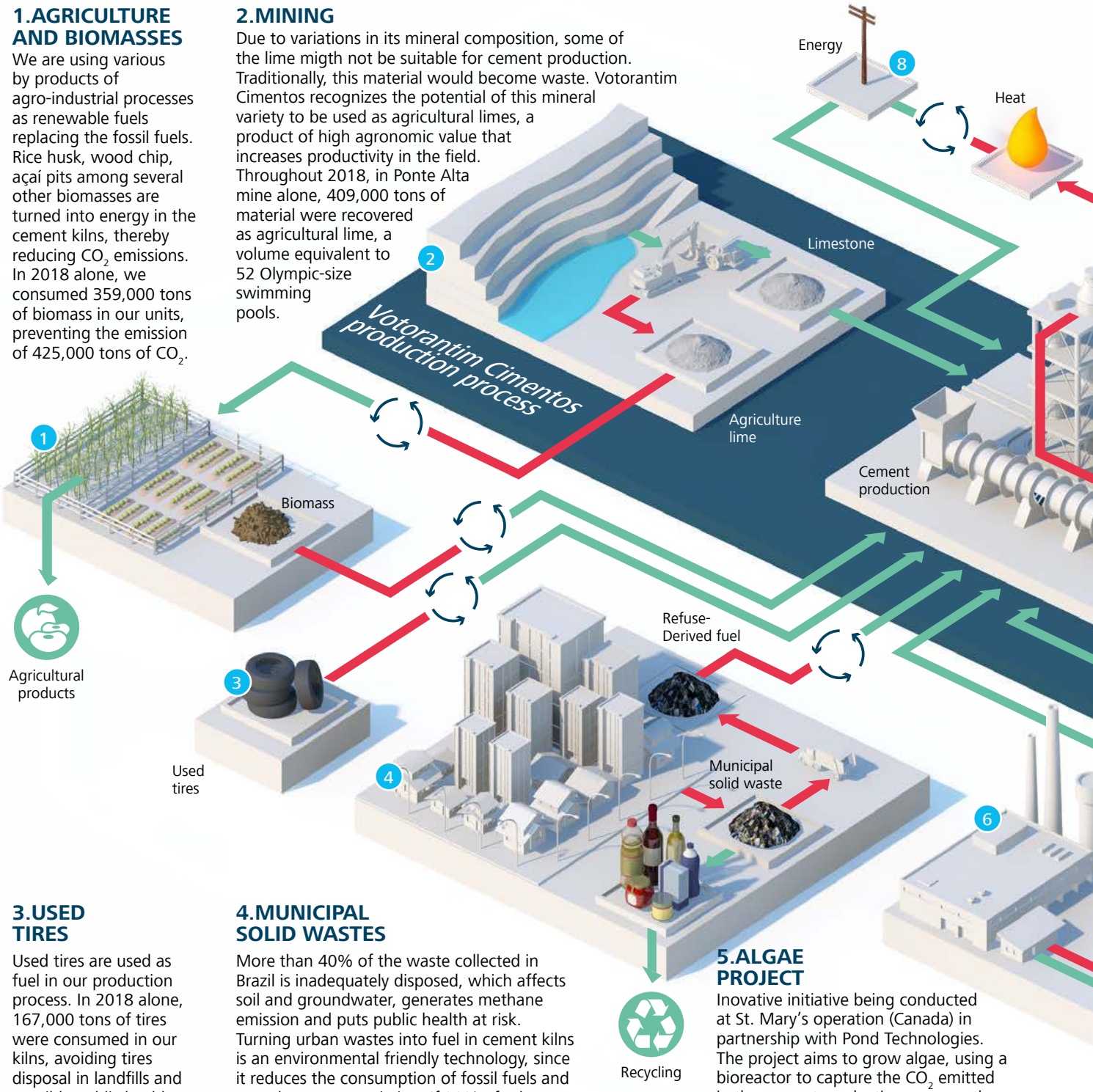
The cement sector already incorporates many circular practices, being notably a net consumer of waste derived resources.

1.AGRICULTURE AND BIOMASSES

We are using various by products of agro-industrial processes as renewable fuels replacing the fossil fuels. Rice husk, wood chip, açaí pits among several other biomasses are turned into energy in the cement kilns, thereby reducing CO_2 emissions. In 2018 alone, we consumed 359,000 tons of biomass in our units, preventing the emission of 425,000 tons of CO_2.

2.MINING

Due to variations in its mineral composition, some of the lime migth not be suitable for cement production. Traditionally, this material would become waste. Votorantim Cimentos recognizes the potential of this mineral variety to be used as agricultural limes, a product of high agronomic value that increases productivity in the field. Throughout 2018, in Ponte Alta mine alone, 409,000 tons of material were recovered as agricultural lime, a volume equivalent to 52 Olympic-size swimming pools.



3.USED TIRES

Used tires are used as fuel in our production process. In 2018 alone, 167,000 tons of tires were consumed in our kilns, avoiding tires disposal in landfills and possible public health risks, mainly the proliferation of mosquitoes that transmit diseases.

4.MUNICIPAL SOLID WASTES

More than 40% of the waste collected in Brazil is inadequately disposed, which affects soil and groundwater, generates methane emission and puts public health at risk. Turning urban wastes into fuel in cement kilns is an environmental friendly technology, since it reduces the consumption of fossil fuels and greenhouse gas emission. If 30% of urban waste collected in Brazil were used as fuel, it would be possible to avoid the emission of 28 million tCO_2 / year.

5.ALGAE PROJECT

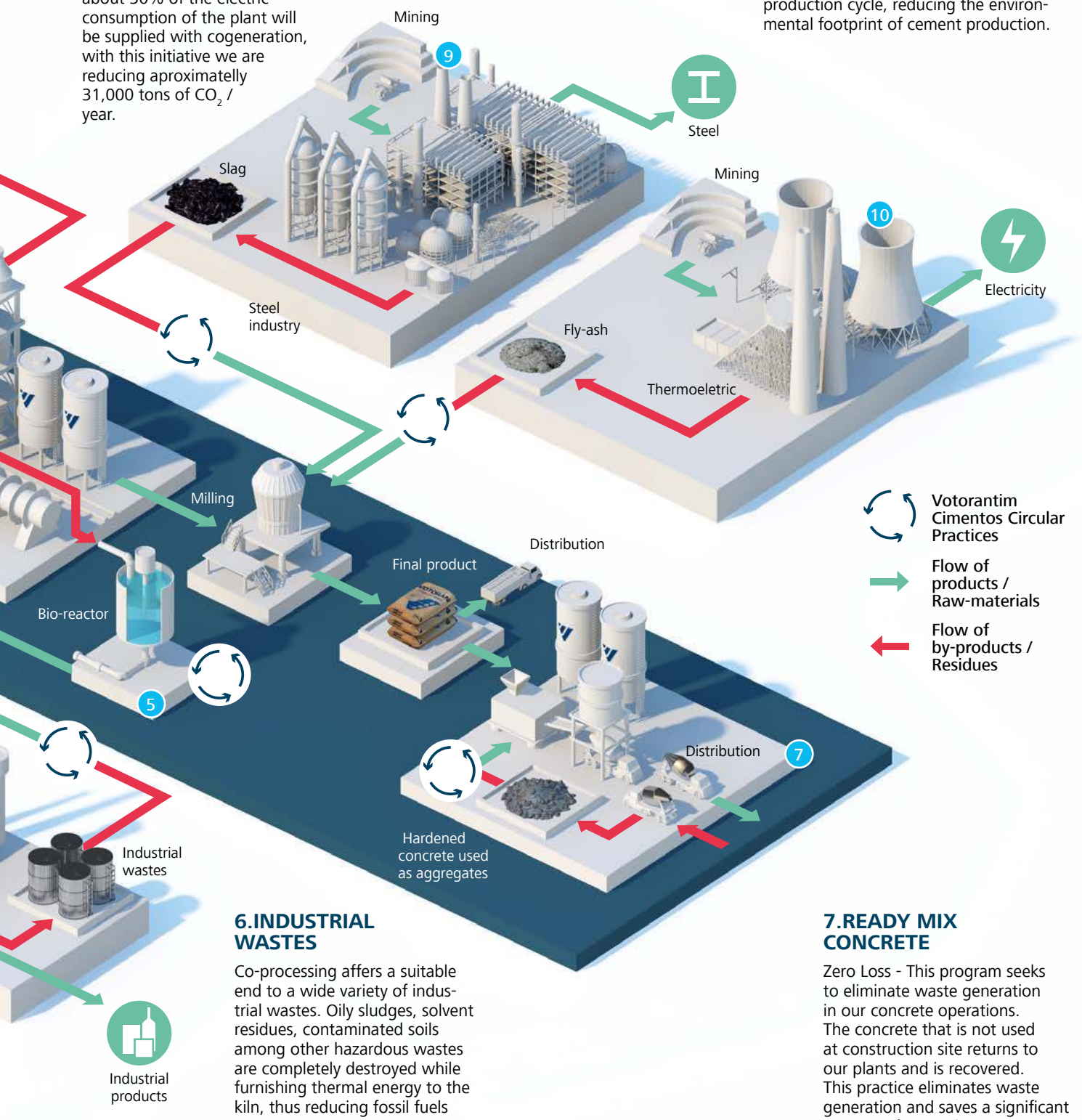
Inovative initiative being conducted at St. Mary's operation (Canada) in partnership with Pond Technologies. The project aims to grow algae, using a bioreactor to capture the CO_2 emitted in the cement production process, then algae can be converted into different products, as biofuel, biofretilizers and animal meal.

8.WASTE HEAT RECOVERY

We seek to make the most of the heat generated in the kiln, first as preheating the raw material and in sequence for the generation of electricity. Only at our Tunisia plant, where we are installing the system, about 30% of the electric consumption of the plant will be supplied with cogeneration, with this initiative we are reducing aproximatelly 31,000 tons of CO_2 / year.

9 AND 10.STEEL AND THERMOELETRIC BY-PRODUCTS

The by-products of the thermoelectric and steel industries find a sustainable re-use in cement production. These materials which used to be environmental liabilities, are reincorporated into the production cycle, reducing the environmental footprint of cement production.



6.INDUSTRIAL WASTES

Co-processing affers a suitable end to a wide variety of industrial wastes. Oily sludges, solvent residues, contaminated soils among other hazardous wastes are completely destroyed while furnishing thermal energy to the kiln, thus reducing fossil fuels consumption.

7.READY MIX CONCRETE

Zero Loss - This program seeks to eliminate waste generation in our concrete operations. The concrete that is not used at construction site returns to our plants and is recovered. This practice eliminates waste generation and saves a significant amount of mineral resources.

PERPETUATING OUR LEGACY IN THE COMMUNITIES

GRI 103-2 GRI 103-3

Social project in Cuiabá, Mato Grosso (Brazil)

We are committed to support the local development of the communities in which we operate. We promote dialogue and relationships with the goal of perpetuating our positive legacy. Through impact and risk evaluations, we want to increasingly seize opportunities in our value chain to promote a culture of sustainability.

Our work is done in two ways: regionally, by a team of expert technical advisors, and locally, by our operational leaders and a team of more than 78 social responsibility facilitators who are the focal points of our social initiatives in Brazil. We follow a 360° approach: our results are presented annually to the Board of Directors and the Executive Committee, and our social investment planning follows a participative process that takes into account the strategic drivers of our business and the participation of community councils and other local bodies of social engagement.

GLOBAL MAPPING

Focused on building a Global Social Responsibility Strategy that respects local cultures, in 2018, we performed an assessment to map our social performance. The objective was both to better understand the initiatives implemented in

the countries where we operate and to assess the social demands.

The mapping process considered criteria identified through a questionnaire answered by all units. We collected information about social investments, history of conflict with communities, stakeholder management and volunteering, among other topics. This will enable us, in 2019, to further advance the proposal of global guidelines for social performance, which will integrate a macro sustainability strategy.

CONNECTED VOLUNTEERING

One of our 2018 Sustainable Practices highlights was our Corporate Volunteering Program. For the first time, we implemented a social initiative that was totally connected to the business. In partnership with the non-profit organization Habitat for Humanity, we restored houses in the community of Heliópolis, in São Paulo.

Volunteering in São Paulo, São Paulo (Brazil)

The project involved the active participation of our employees, who worked on activities such as plastering, painting and laying floors. It also included the use of our products and other inputs from the construction chain purchased from small retailers in the community, fostering the local economy and extending the reach of our products. More than 100 kilos of our materials were used in the renovation and expansion of ten houses, with the help of 26 employees, who worked over a one-day period.

"What makes this initiative unique is not the number of houses or the volume of materials, but rather the connection of employees with our products and the understanding that cement, concrete and mortar, combined with volunteer work, can change the lives of families. Currently, Brazil has about 40 million homes deemed unsafe and, with this project, we proved that through an organized effort it's possible to improve the quality of life for these people. After all, social responsibility is also about empathizing with such diverse situations and working towards collective well-being," said Priscilla Alvarenga, global manager of Social Responsibility.

In addition to this initiative, in 2018 our volunteer projects mobilized 1,637 employees and 1281 guests from 78 Brazilian units, engaging 5949 people in the communities. In all, we conducted 2795 organized initiatives related to the Sustainable Development Goals (SDGs).

Social project in Vidal Ramos, Santa Catarina (Brazil)

SOCIAL INVESTMENT

Our social performance strategy focuses on supporting local development and, at the same time, increasing synergies throughout our production chain.

In 2018, we invested R$ 13.7 million in 383 initiatives in 64 locations in Brazil, Canada, India, Morocco, Spain, Tunisia, Turkey and the United States. These initiatives include programs to foster local development and manage social risk, legal commitments, sponsorships and donations, covering 24% of our global operations. The amount invested in 2018 was 17.4% higher than the R$ 11.7 million invested in 2017. GRI 413-1

Our focus in 2018 was to look for opportunities linked to co-processing and income generation using biomass *(covered further in AFR Assures Competitiveness, page 37)*. At the same time, we made one of the largest investments in our history in education. We joined a challenge proposed by our parent company, Votorantim S.A., to mark its centennial anniversary, celebrated in 2018: to bring the Partnership for the Enhancement of Education (PVE, for its initials in Portuguese) to more than 100 Brazilian towns. We took our commitment to contribute to the improvement of public education to 25 towns, compared to seven in 2017 *(For more details on the PVE program see page 71).*

IN ADDITION TO EDUCATION, OUR SOCIAL INITIATIVES ARE DIVIDED INTO FOUR WORK AREAS:

- **HUMAN CAPITAL**
  Support of projects in education, professional qualification, culture, sports and the rights of children and adolescents
- **INSTITUTIONAL CAPITAL**
  Support of public management and empowerment of local NGOs
- **SOCIAL CAPITAL**
  Engagement with stakeholders and community councils
- **ECONOMIC DYNAMISM**
  Support of production chains

SOCIAL INVESTMENTS IN 2018

Work area	R$ million	% of the total
Human capital	3.5	26
Institutional capital	2.9	21
Social capital	4.8	35
Economic dynamism	2.5	18
Total	**13.7**	**100**

Açaí field in Igarapé-Miri, Pará (Brazil)

Initiatives in Brazil

In total, 36Brazilian towns were assisted by 99 initiatives to foster local development and promote community engagement. A R$ 10.1 million investment was primarily allocated to towns in which we have operations, including locations with a high social vulnerability index.

In 2018, we started a feasibility study for an inclusive social business that will expand the scope of the açaí chain by including the region of Primavera, in Pará. We also continued the Moradigna (São Paulo) and Babassu (Ceará) projects.

To enhance the dialogue on long-term trends in private social investment, leaders of Votorantim S.A. companies participated in the Votorantim Social Performance Meeting held in July and August. The program of the meeting included a training class ("Company + Community"), opportunities to share case studies, and activities that promoted reflection on hypothetical situations involving the opportunities and challenges in the locations where Votorantim Cimentos operates.

PARTNERSHIP FOR THE ENHANCEMENT OF EDUCATION (PVE)

Our main area of social investment continues to be education, an important instrument to perpetuate our positive legacy and develop communities in all regions of Brazil. We provided support to improve public education in 25 towns in areas where we operate *(this program is detailed on page 72).*

BABASSU PROJECT – SOBRAL (CE)

By using babassu as a source of energy in the cement kilns of our unit in Sobral (Ceará), we fostered income generation and the creation of an inclusive business. The plant began co-processing babassu coconut in 2016 and, since September 2018, has been acquiring the fruit from communities in Serra do Meruoca to substitute part of the fossil fuel used in the cement kilns. Through the ReDes Program and in line with our business strategy and our Sustainability Commitments, the project helps to improve the efficiency of our plant, reduce our emissions of greenhouse gases, increase the use of local suppliers and further promote economic development in the region. Family farmers who previously discarded 90% of the fruit now have another source of income from selling coconut to our plant. Five communities in the region participate in the program and distribute income among 40 beneficiaries. *(Learn more about this project in AFR Assures Competitiveness, on page 37)*

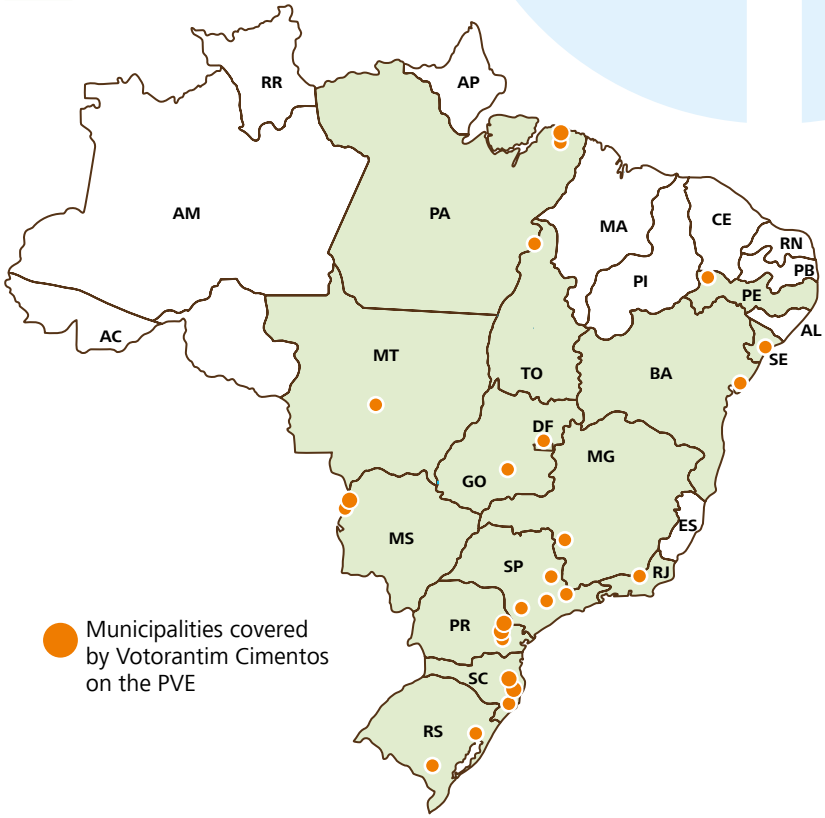
Facilitators

"We were able to advance our 2018 initiatives thanks to the dedication of our 78 facilitators—people who, in addition to their role in the company, become responsible for making our projects happen. We have a lean team but are we able to spread wide thanks to the efforts of our facilitators, who also benefit from working in this area by developing new skills," said Fernanda Ramos, regional Social Responsibility consultant.

Any employee can be recommended for a position as a facilitator; the selection is based on the candidate's potential to execute the tasks at hand. Facilitators are released from their regular functions to dedicate part of their time to managing social projects. Some of the projects include deliverables that are part of their variable compensation targets.

We promoted capacity building workshops to help them develop the skills they need, especially when it comes to relationships with governments and representatives of local communities. Also, the facilitators who stood out were recognized at the end of the year during ComVC, a quarterly internal event that that takes stock of the company's achievements and performance in the quarter and is broadcast to all units.

PARTNERSHIP FOR THE ENHANCEMENT OF EDUCATION (PVE)



EDUCATION, A LEGACY THAT TRANSFORMS

Quality education, as a force that transforms society and has direct correlation with productivity and competitiveness, was adopted as a cause by our parent company, Votorantim S.A., becoming one of the celebratory highlights of its centenary in 2018. We are active participants in a program of the Votorantim Institute, the Partnership for the Enhancement of Education (PVE, for its initials in Portuguese). In 2018, we took the initiative to 25 of the 104 towns in which it was implemented during the year. In these 25 towns alone, we involved 351 schools and 191 administrators.

In total, considering all Votorantim S.A. companies, more than 162,000 people engaged in activities of the PVE; 1,130 schools participated in the program, 2,130 school directors and coordinators received training and more than 360,000 students were impacted.

By enhancing educational and school management practices, the PVE contributes actively to improve public school management by providing tools and training to the technical staff of municipal education departments. The towns where the program is in place have registered an average 38% improvement in the Basic Education Development Index (Ideb) for elementary school and up to 45% for middle school.

To learn more about the PVE, **click here** to watch the video *Edifying Stories: Education, a Legacy that Transforms.*

25 towns in areas where we work

351 participating schools

191 administrators trained

537 public school directors and coordinators

READY TO FLY

In 2018, two income generation projects in Vidal Ramos (Santa Catarina), involving the production of jelly and cookies, gained autonomy. Supported by us for four years through the ReDes program—a partnership with the Votorantim Institute, the National Bank for Economic and Social Development (BNDES) and the Inter-American Development Bank (IDB)—the two projects have matured enough to become independent. The cookie production is carried out by an exclusively female cooperative and is expected to be replicated in other towns.

GLOBAL INITIATIVES

In 2018, our operations in Canada and the United States invested R$ 1.1 millions in 101 community relationship initiatives, sponsorships and donations. We allocated R$ 2.5 millions to 183 social and government relations initiatives in Europe, Asia and Africa. Our investments included:

BECAUSE YOU CARE – We were the biggest corporate supporters of the Because You Care campaign, which raised funds for a new nursing home in Ontario, Canada.

CONCRETE KITS FOR KIDS – In Ohio, United States, 173 students participated in the Concrete Kits for Kids program in 2018. Launched in 1992, this initiative strengthens our relationship with the community by increasing knowledge about our business. Children can sit in the cabin of our concrete mixers and also learn about paper, clay, wood and concrete materials in hands-on workshops.

RIDE FOR HEART - A team of VCNA employees walked, ran and pedaled to raise money for heart disease treatment and research. Collectively, we raised more than US$ 10,000 at an event held in Ontario, Canada, on July 4.

SCHOLARSHIP AWARDS - For the past 21 years, the VCNA Scholarship Awards program has recognized the achievements and supported the education of families of North American employees. The selection is based on academic performance, leadership, participation in school and community activities, work experience and educational and professional aspirations. In 2018, eight people were awarded scholarships.

NEW SIVAS MIDDLE SCHOOL - VC Turkey donated 2 million Turkish Liras to build a new Middle School in Sivas. More than 430 students, between 11 and 15 years old, attend this school.

THE KERKENES PROJECT - Kerkenes is an iron age city located in Turkey. Since 1994, the Yozgat cement plant is one of the sponsors of the Kerkenes Eco-Center, a platform developed by the Kerkenes archeological team and ŞAHDER (a Şahmuratlı village association). The goal of the project is to promote sustainable rural life through the use of renewable energy, drip-irrigated organic gardens, parabolic solar cooker and large solar drier, and the construction of buildings using appropriate materials and energy-efficient designs.

Children at Concrete Kit for Kids in Ohio (United States)

In addition, students from the Middle East Technical University (one of Turkey's most prestigious universities) come to the Kerkenes Eco-Center to take part in "hands-on building" sessions, which give them the opportunity to gain practical experience while contributing to improve the Eco-Center.

VUELTA AL MUNDO SOLIDARIA - To end sedentary lifestyle in the workplace and contribute toward a healthier society, Votorantim Cimentos Spain employees choose an NGO participating in the "Solidarity Around the World" challenge (Vuelta al Mundo Solidaria) to receive a donation from the company. As part of this initiative, employees walk, run, swim or cycle to "collect" kilometers and exceed 40,000 km each year.

OPEN DOORS - In Spain, we continue to support the Open Doors initiative to welcome community members into our plants. More than 700 people visited the Toral plant in 2018.

JUDY KUSZEWSKI

Judy Kuszewski is chief executive of Sancroft International, a London-based sustainability advisory company. She has over 25 years' experience in sustainability and corporate responsibility. Judy is also chair of the Global Sustainability Standards Board, the body that sets independent sustainability reporting standards on behalf of the Global Reporting Initiative.

I am again honoured to be invited to review Votorantim Cimentos' integrated report and reflect on the company's strong values, innovative activities and dedication to good corporate governance. It is all the more impressive given the fact that Votorantim Cimentos is a privately-owned company, and therefore both this report and the efforts it describes represent a significant voluntary commitment.

Last year's integrated report came at a challenging time for the company, and for business and society in general in Brazil – where the large majority of the company's assets and operations exist. Financial performance has stabilised since, but the economy remains under pressure, and the political context in Brazil is contentious and fragmented. In this way, Brazil is no different from many regions and societies around the world.

What is perhaps unique to Brazil is its combination of natural and human resources, its social and cultural diversity, and its status as a rapidly-developing and growing nation at the heart of its region. The potential for Brazil to become a model of sustainability is coupled with the risk that economic and political instability could undo some of these efforts, whether temporarily or permanently. Votorantim Cimentos clearly recognises its role as a corporate leader obliges the company to look beyond its own operations and seek out opportunities to create additional value in society.

This integrated report identifies a wide range of issues and topics of importance to Votorantim Cimentos and to its stakeholders. It is hard to miss the fact that internal and external views of these topics sometimes diverge widely – for example, in relation to climate action and quality education.

This divergence, to my mind, is related to the striking scale of impact of the cement industry and Votorantim Cimentos. At the same time, the scale of expectations the company is facing is also exceptional. It is evidence of Votorantim Cimentos' outstanding reputation and attractiveness as an employer that the company attracted some 24,000 applications to its graduate trainee program. But it is equally evident that the company alone cannot provide the future path for so many of the country's best and brightest – a mere eleven applicants to the program were lucky enough to begin their careers with Votorantim Cimentos in the most recent intake. I would encourage the company to show more in the future their actions alongside others in Brazilian industry to tackle the scale of expectations collectively.

The sustainability challenges that the SDGs address are fundamental to the cement industry, and if the world is to avoid catastrophic ecological harm and deliver a just and prosperous future to the next generation, then companies like Votorantim Cimentos will need to step up the scale of response to these challenges. The cement industry is extremely energy-intensive, and depends on finite resources. By enabling building and development, it serves basic human needs, but society's attitudes are always changing. I encourage Votorantim Cimentos in the future to explore some of the sustainability trends that drive value for the business, such as:

- Availability of aggregates, all forms of which are becoming increasingly scarce worldwide
- Attitudes to building and design, which respond to people's lifestyle and community aspirations
- Competition for space, especially in urban areas, which may make efficient and sustainable delivery, use and recycling of building materials difficult
- Radically reduced energy consumption and changing fuel mix – which already challenges the cement industry to find alternatives, and which is set only to intensify in the coming years

Cement is unusual, among other reasons, for the fact that large quantities of waste products are typically used in its manufacture. As we move toward a more circular economy, where waste is eliminated as a concept through materials reduction and effective recycling, what will become the feedstocks of the future? Votorantim Cimentos has already taken the innovative step of introducing biomass energy cogeneration, using acai and babassu waste, which has measurably reduced energy required from fossil fuel sources. But what is the potential of this technology? How much of the energy requirement – and carbon footprint – of cement can be provided in this way, before new environmental or social problems arise?

Cement is one of the oldest man-made building materials. Yet the future for sustainable cement is far from clear. I commend Votorantim Cimentos for providing this thought-provoking integrated report again this year, reflecting global best practice in reporting.

DANE SMITH

Dane Smith is a Managing Director in the Washington, D.C. office of FSG, a mission-driven consulting company founded by Harvard Business School Professor Michael Porter and Mark Kramer. Dane leads FSG's corporate practice and has 25 years of experience advising private and public sector leaders on business strategy. Dane has worked with CEOs, COOs, and functional heads of Fortune 500 companies in the pharmaceutical, medical device, financial services, consumer goods, mining, forestry, and manufacturing industries.

Thank you for inviting me to comment on Votorantim Cimento's annual report. Perhaps the most intriguing part of the report is the way that you have placed the United Nations' Sustainable Development Goals right at the center of your review of last year's activities. Committing yourselves to integrating the SDGs into your operations and recognizing that it is necessary for maximizing business success is laudable. Reflecting on your progress to date in the SDGs highlights some of your important successes and also clarifies how much further Votorantim Cimentos has to go to fully avail itself of the opportunity in front of the company.

Votorantim Cimentos has made important progress in the environmental SDGs by increasing its use of alternative fuels, most notably acai and babassu pits to substitute for petroleum coke fuel. I am impressed with this program; in particular, with the way that it has created additional income generation opportunities for communities in Para and Ceara. It would be helpful for VC to note how its rate of thermal substitution (18.5% in 2018 up from 14.6% in 2017) compares to its competitors. Is VC doing better than its competitors or is it still catching up. Also, how much economic impact is the program having on community members?

Likewise, I am pleased to see that VC is making a commitment to social impact. You note a R$13.7 M investment in social investment, including an important contribution to PVE, the Partnership for the Enhancement of Education, and a team of 78 social facilitators. While certainly, these efforts are a concrete manifestation of VC's interest in social impact, I would like to see the company be clearer about what impact is it trying to achieve. The most important consideration should not be how much VC spends or how many people are involved in its programs, but how much social or environmental impact is achieved. Even if VC is at too early a stage to demonstrate concrete results, a clear articulation of its strategy, objectives, and goals would allow the reader to perceive that its commitment to these issues is deep, authentic, and carefully considered.

In reading through the annual report, there are several places where it seems clear to me that Votorantim Cimento has an opportunity to identify shared value strategies. These strategies would allow VC to increase its revenues or decrease its costs by helping to solve social and environmental problems at scale. Votorantim Cimento has shared value opportunities in local supplier development, local hiring, alternative fuels, local infrastructure, and in supporting its retailers. If VC does not rigorously explore these opportunities, it is likely missing out on millions of dollars of increased profits and simultaneously the possibility of improving the lives of tens of thousands of Brazilians and community members in other markets. The shared value opportunity with "Juntos Somos Mais" seems particularly notable. It would be interesting to explore with Gerdau and Tigre how the program can evolve from a simple loyalty program to an initiative that would allow small retailers to increase their prosperity by more effectively merchandising and selling VC's products.

In conclusion, I am very encouraged to see Votorantim Cimento's efforts to integrate the Sustainable Development Goals into its operations. While many companies discuss the SDGs, few do a good job of integrating them into their business strategies. I look forward to hearing more about Votoratim Cimento's progress in 2019 to develop clear business strategies that will result in increased profits for the company by making meaningful and measurable impact on the SDGs.

MATERIAL THEMES CORRELATION

Material Topic	GRI Topic	KPI	Impacted Stakeholder
Healthy and Safe Working Conditions	GRI 403 - Occupational Health and Safety	403-2	Employees Shareholders
Customer relations and satisfaction	GRI 102 - General Content	102-43 102-44	Customers
Innovation, research and development	No Specific KPI available		Environment Clients Society
Human Capital Development	GRI 401 - Employment	401-1	Employees Society Government
	GRI 404 - Training and education	404-1	Employees
	GRI 405 - Diversity and equal opportunity	405-1	Society
Ethics and Business Integrity	GRI 102 - General Content	102-16 102-17	Society Employees
	GRI 205 - Anti-Corruption	205-1 205-2 205-3	Employees Society
	GRI 206 - Anti-competitive Behavior	206-1	Competitors Shareholders Society
	GRI 405 - Diversity and equal opportunity	405-1	Employees Society
	GRI 406 - Non-Discrimination	406-1	Employees Society
	GRI 407 - Freedom of association and collective bargaining	407-1	Employees
	GRI 408 - Child labor	408-1	Society
	GRI 409 - Forced or compulsory labor	409-1	
Climate Change and GHG Emissions	GRI 302 - Energy	302-1 302-2 302-3	Society Environment
	GRI 305 - Emissions	305-1 305-2 305-3 305-4 305-5 305-7	Environment Society
Regulation and Compliance	GRI 415 - Public Policy	415-1	Society Government
	GRI 307 - Environmental Compliance	307-1	Government Society Environment
	GRI 419 - Socioeconomic Compliance	419-1	Society

EXTERNAL INITIATIVES GRI102-12

GLOBAL

WORLD BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT (WBCSD): a global organization led by the CEOs of more than 200 companies from all business sectors, working together to accelerate the transition to a sustainable world. Together, these companies have a total revenue of US$ 8.5 trillion and employ 19 million people.

GLOBAL COMPACT: an initiative of the United Nations (UN) to encourage private organizations to adopt appropriate practices on human rights, labor, anti-corruption and environmental conservation.

GLOBAL REPORTING INITIATIVE (GRI): an international organization focused on sustainability management and communication to help companies and other stakeholders better understand the impact of their operations.

GLOBAL CEMENT AND CONCRETE ASSOCIATION (GCCA): Established in 2018, the GCCA includes companies that represent 30% of the world production capacity, including Votorantim Cimentos. The platform represents the cement and concrete industries globally, maintaining a strategic partnership with the World Business Council for Sustainable Development (WBCSD).

BRAZIL

BRAZILIAN BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT (CEBDS): organization that represents the World Business Council for Sustainable Development (WBCSD) in Brazil. It brings together approximately 60 of the country's largest business groups, which together account for approximately 40% of Brazilian GDP and are responsible for more than one million direct jobs.

COMMITMENT LETTER OF THE BUSINESS MOVEMENT FOR INTEGRITY, TRANSPARENCY AND FIGHT AGAINST CORRUPTION: By signing this document in August 2018, together with 36 other companies, we reaffirmed our commitment to adopt practical measures to fight corruption in the business environment and public-private relationships, which is already part of our Compliance Program.

COOPERAÇÃO TÉCNICA SBE VC RBMA (TECHNICAL PARTNERSHIP): a partnership among Votorantim Cimentos, the Brazilian Society of Speleology and the Atlantic Forest Biosphere Reserve to develop and disseminate good socio-environmental practices in cave areas and the Atlantic Forest region.

CARTA ABERTA AO BRASIL SOBRE MUDANÇA DO CLIMA (THE ETHOS INSTITUTE'S OPEN LETTER ON CLIMATE CHANGE): initiative of the business sector in Brazil to combat climate change.

VCNA

Canada

CEMENT ASSOCIATION OF CANADA (CAC): CAC advances the Canadian Cement industry's position as a proactive partner in addressing society's sustainability and climate change challenges. We participate as directors and voting members.

CONCRETE ONTARIO (READY MIXED CONCRETE ASSOCIATION OF ONTARIO): Provides leadership and advocacy in business and markets, promoting environmental stewardship and safety practices for the advancement of our industry.

ONTARIO STONE, SAND & GRAVEL ASSOCIATION (OSSGA): Serves as a voice of environmental sustainability and stewardship on behalf of the Ontario aggregates industry, advocating for consistent application of best operating standards and environmentally responsible use of resources.

United States

PORTLAND CEMENT ASSOCIATION (PCA): Promotes safety, sustainability and innovation in all aspects of construction, fosters continuous improvement in cement manufacturing and distribution. We participate as directors and voting members.

NATIONAL READY-MIXED CONCRETE ASSOCIATION (NRMCA): Promotes partnerships to proactively address environmental issues that affect the ready-mixed concrete and construction industries. We participate in the NRMCA's Build with Strength initiative, a coalition of concrete suppliers promoting concrete as a sustainable solution.

ILLINOIS ASSOCIATION OF AGGREGATE PRODUCERS (IAAP): Promotes and protects Illinois' industrial minerals mining industry through advocacy and education to ensure a regulatory and business climate focused on industry growth, safety and sustainability.

VCEAA

Spain

FUNDACIÓN LABORAL DEL CEMENTO Y EL MEDIO AMBIENTE (CEMA FOUNDATION): a three-party organization composed of the cement employer's association OFICEMEN and the two main unions of the sector. Its activities focus on sustainability and CSR, communication and awareness, environment, waste valorization, occupational risk prevention and training.

FUNDACIÓN LABORAL ANDALUZA DEL CEMENTO Y EL MEDIO AMBIENTE (FLACEMA): a three-party organization, composed of cement employers and the two main unions of the sector in Andalusia. Its goal is to promote the creation of a culture within Andalusia that makes economic and social progress compatible with respect for the environment and natural resources.

OFICEMEN: Nonprofit, private and technical association of cement manufacturers in Spain. It represents an industry that has a mission to serve citizens, participates in civil society and, above all, shows deep respect for the environment. Currently, all companies dedicated to integral cement production with factories in Spain are part of Oficemen.

Turkey

TURKISH CEMENT MANUFACTURERS ASSOCIATION (TMCA): We participate in the activities promoted by TCMA, a non-profit organization aimed at finding solutions to industry challenges regarding environmental, legal and ethical values, while promoting higher quality products and more efficient services. The primary role of TCMA is to provide services and support in areas such as the environment, quality, mining and energy management. It also supports cement industry professionals in their technical training needs. TCMA has specific work groups dedicated to research and development, quality control, environmental issues and AF/ARM.

CEMENT INDUSTRY EMPLOYERS' UNION (ÇEİS): We participate in the activities supported by CIEU, aimed at protecting, developing and achieving cooperation among members regarding economic and social rights and interests, and establishing a collective labor agreement. The union has specific working groups that focus on occupational health and safety, development of skills of cement industry professionals and industry relations.

Tunisia

NATIONAL CHAMBER OF TUNISIAN CEMENT PRODUCERS (LA CHAMBRE NATIONALE DES PRODUCTEURS DE CIMENTS DE LA TUNISIE): An organization under the umbrella of the Tunisian Association of Industry, Trade and Handicrafts (UTICA). It gathers all companies in the building materials industry and actively works to improve their economic and institutional environments.

ARAB ASSOCIATION FOR CEMENT AND BUILDING MATERIALS: This inter-Arab International organization, affiliated with the General Secretariat of the Arab League and the Council of Arab Economic Unity, focuses primarily on developing and supporting technical, industrial and commercial relations, coordinating industry-related activities among its members, and suggesting general grounds for developing these industries in Arab countries.

PERFORMANCE TABLE GRI102-48

ECONOMICAL PERFORMANCE

	GRI	2016	2017	2018
Economic value generated and distributed	201-1			
Revenues - Gross sales revenues of products and services. other income and provision for credit (R$ Thousands)		14,683,856	13,182,514	**15,278,098**
Inputs acquired from third parties		-7,512,331	-7,276,962	**8,136,778**
Gross value added		7,171,525	5,905,552	**7,141,320**
Net value added produced		6,156,295	4,914,476	**6,103,425**
Total value added received in transfers		2,208,389	1,161,865	**1,107,583**
Total value added available for distribution		8,364,684	6,076,341	**7,211,008**
Distribution of value added		8,364,684	6,076,341	**7,211,008**
Net Revenue by product type (R$ Thousands)	201-1			
Cement		8,463,592	7,971,446	**8,902,225**
Concrete		2,335,801	2,103,201	**2,487,147**
Aggregates		456,760	401,140	**459,227**
Mortar			419,951	**453,776**
Others			208,042	**307,501**
VALUE CREATION FOR VOTORANTIM CIMENTOS AND KEY STAKEHOLDER GROUPS				
Employee benefits (R$ thousands)	201-1	2,152,183	2,041,428	**2,199,590**
Value added for government (taxes) (R$ thousands)		2,574,938	2,205,942	**2,993,421**
Remuneration of third-party capital (R$ thousands)		3,213,534	2,448,570	**2,067,597**
Remuneration of own equity (R$ thousands)		424,029	-619,599	**10,400**
Sales of cement (million metric tons)		32.5	31.5	**30.9**
Sales of aggregates (million metric tons)		24.7	23.4	**21.7**
Sales of concrete (million m³)		8.3	7.8	**7.7**
Sales of mortar (million metric tons)				**1.5**

	GRI	2016	2017	2018
SUPPLIERS				
Proportion of spending with local suppliers at significant operating locations	204-1			
Total amount spent with suppliers (Million R$)		1.87	1.48	**1.47**
Proportion of spending with local suppliers at significant operating locations		52%	53%	**49%**
Contracting of suppliers*				
Total number of new suppliers			13,685	**10,989**
Total number of new suppliers selected according to environmental criteria	308-1		639	**549**
Total number of new suppliers selected according to social criteria	414-1		96	**89**
% of new suppliers that were screened using environmental criteria	308-1	4.0%	4.7%	**4.9%**
% of new suppliers that were screened using social criteria	414-1	80.0%	0.7%	**0.8%**
Total number of negative environmental impacts in the supply chain and actions taken	414-2		0	**0**

*Results refer to VCBR operations
** Suppliers that were developed in the Productive Chaining Program of 2017 have continued, and the contracting of local Suppliers for orders up to R$ 5,000 made the number of suppliers remain closer to previous years.

RELATIONS WITH GOVERNMENT				
Political contributions (in R$)*	415-1	0	0	**0**

* Scope VCBR, VCNA and VCEAA.

CONSUMER RELATIONS				
Net Promoter Score (NPS) survey results	102-43 102-44	40%	51%	**42%**

* Weighted results of the industrial, real estate and self-construction segments
** Scope VCBR

OPERATIONS AVALIATED BY CORRUPTION RISK*				
Percentage of operations evaluated	205-1		100%	**0%**
Significant corruption-related risks identified through this evaluation			Obtaining or renewing documents, Contracting of third parties, Payments to private third parties, Acquisition of products or services of public entities, Gifts, presents, travels, lodging and entertainment. Participation in commercial associations and / or sidicates associations, Participation in licenses and consortia, Provision of public entities products.	**The assessment on anti-corruption at our operations is not realized in an annual basis at Votorantim Cimentos. To ensure the compliance coverage to the anti-corruption code, we run the assessment once every three years with an external consultancy. This process will be realized again, in a global scope, in 2019.**

	GRI	2016	2017	2018
TOTAL NUMBER OF EMPLOYEES WHO RECEIVED ANTI-CORRUPTION TRAINING				
Total number of employees who received anti-corruption training	**205-2**			
President/Director		20	21	**1**
Manager/General Manager		40	31	**16**
Coordinator/Consultant		40	74	**74**
Technician/Analyst/Supervisor		33	300	**198**
Trainee		0	7	**0**
Operator		0	0	**762**
Intern		0	1	**329**
Others		-	12	**311**
Total		133	446	**1691**
TOTAL NUMBER OF LEGAL ACTIONS FOR UNFAIR COMPETITION. TRUST AND MONOPOLY PRACTICES AND THEIR OUTCOMES				
Total number of legal actions*	**206-1**	0	35	**0**
Value of legal actions (R$)			invaluable	**0**
In the beginning of 2017, processes were raised with more than R$ 98 million, in line with specific standards for M&A and Due Diligence				
MONETARY VALUE OF SIGNIFICANT FINES AND THE TOTAL NUMBER OF NON-MONETARY SANCTIONS FOR NON-COMPLIANCE WITH LAWS AND REGULATIONS				
No. tax legal actions	**419-1**	67	4*	**28***
No. of labor and social security legal actions		1,702	1,277	**654**
Value of tax legal actions (Million R$)		40.2	1.3	**13.9**
Value of labor and social security legal actions (Million R$)		316.2**	127.9**	**38.2**
* From 2017, processes with values above 98 million reais were made, in line with the standards applied for M&A and Due Diligence. **Adjusted data				
TOTAL NUMBER OF INCIDENTS OF DISCRIMINATION RECEIVED BY THE GLOBAL BUSINESS ETHICS OFFICE AND THE CORRECTIVE ACTIONS TAKEN				
Race/color	**406-1**	5	3	**0**
Age group		0	2	**1**
Gender		0	0	**0**
Religion		2	2	**0**
Political opinion or other opinion		0	0	**0**
Nationality or social origin		5	1	**2**
Physical conditions		0	0	**0**
War veterans		0	0	**0**
Other incidents (discrimination)		0	0	**0**
Total number of incidents analyzed		12	8	**3**
Analyzed and considered unfounded		7	7	**3**
Under analysis		3	1	**0**
Valid		2	0	**0**
*There was one case reported in 2017 "under analysis" at the time of the report. The incident was considered unfolded.				
NUMBER OF CASES OF CORRUPTION CONFIRMED BY THE GLOBAL BUSINESS ETHICS OFFICE				
	205-3	0	0	**0**

ENVIRONMENTAL PERFORMANCE

	GRI	2016	2017	2018
NUMBER OF UNITS INCLUDED IN THE ENVIRONMENTAL EVALUATION				
Cement		48	48	**44**
Aggregates		9	5	**5**
Concrete		56	45	**40**
Mortar		4	4	**4**
Limes and agricultural inputs		2	2	**2**
ENVIRONMENTAL INVESTMENTS AND COMPLIANCE				
Total Environmental Capex and Opex by type* (million reais)				
Environmental investments (Capex) (R$)	103-2	27.3	45.5	**42.5**
Environmental expenses (Opex) (R$)		27.7	37.7	**41.7**
Monetary value of fines	307-1			
Number of legal actions judged against the Company in the year		3	6	**2**
Value involved in legal actions judged against the Company in the year (Million reais)			0.29	**1.5**
N° of legal actions payed against the Company in the year			0	**0**
Value payed in legal actions agains the Company in the year			0	**0**
N° of administrative sanctions received in the year		15	14	**19**
Value involved in administrative sanctions received in the year (Million reais)			1.88	**1.3**
N° of administrative sanctions payed in the year			3	**0**
Value payed in administrative sanctions in the year (Million reais)			0.06	**0**
N° of TAC's or TC's received in the year		0	2	**0**
Value involved in TAC's or TC's received in the year			0	**0**
N° of TAC's or TC's payed in the year			2	**0**
Value payed in TAC's or TC's in the year			0	**0**
Number of contentious claims received in the year			18	**21**
Value involved in contentious claims received in the year (Million reais)			2.17	**2.8**
Number of contentious claims payed in the year			3	**0**
Value involved in contentious claims payed in the year (Million reais)			0.06	**0**

*The Company works to ensure the fulfillment of the obligations set out by regulatory and supervisory bodies regarding the Conduct Adjustment Agreement and Commitment Agreement

	GRI	2016	2017	2018
CO_2 EMISSION				
CEMENT				
Gross absolute CO_2 emission (millions of tons)	305-1	22.9	21.7	**21.7**
Liquid absolute CO_2 emission (millions of tons)		22.3	21.0	**21.0**
Gross specific CO_2 emission (kg CO_2/t prod cem)	305-4	672.3*	656.7*	**641.5**
Liquid specific CO_2 emission (kg CO_2/t prod cem)		655.5*	637.6*	**621.6**
% of redution of CO_2 based in 1990 (kg CO_2/t prod cem)	305-5	16.1%*	16.5%*	**18.6%**
AGGREGATES				
Gross absolute CO_2 emission (millions of tons)	305-1	0.009	0.005*	**0.005**
Liquid specific CO_2 emission (kg CO_2/t prod cem)	305-4	1.75	1.54	**1.45**
CONCRETE				
Gross absolute CO_2 emission (millions of tons)	305-1	0.02	0.01	**0.02**
Gross specific CO_2 emission (kg CO_2/t prod cem)	305-4	10.3	9.9*	**8.9**
MORTAR				
Gross absolute CO_2 emission (millions of tons)	305-1	0.0017	0.0017	**0.0014**
Liquid specific CO_2 emission (kg CO_2/t prod cem)	305-4	2.3	1.9	**2.2**
LIMES AND AGRICULTURAL INPUTS				
Gross absolute CO_2 emission (millions of tons)	305-1	0.22	0.68*	**0.85**
Gross specific CO_2 emission (kg CO_2/t prod cem)	305-4	123.0	341.8*	**487.4**
*Adjusted data				
INDIRECT CO_2 EMISSIONS				
Energy indirect CO2 emissions (purchased energy) (Million metric tons)	305-2			
Cement		0.96**	0.97**	**0.82**
Concrete		0.0002	0.0003	**0.0003**
Aggregates		0.0011	0.0007	**0.0005**
Mortar		0.0006	0.0011	**0.0005**
Lime and agricultural inputs		0.0027	0.0026	**0.0039**
Transportation of inputs and final products*	305-3			
Other indirect emissions - Scope 3 (million tCO_2e)		0.0013**	0.0006**	**0.0006**
* Includes Scope 3 GHG emissions for cement, concrete and aggregates units ** Adjusted data Ps: Estimated data				
ENERGY				
Thermal energy mix of clinker production	302-1			
Fossil fuels (Coal, petroleum coke, heavy fuel oil, diesel oil, natural gas, shale and lignite)		88.3%*	85.6%*	**82.1%**
Thermal substitution rate (% thermal energy from alternative fuels and biomass)		11.7%	14.4%	**18.5%**
Clinker factor (average % of clinker in cement)		77.0%	76.6%*	**75.2%**
*Adjusted data				

	GRI	2016	2017	2018
Energy intensity*	302-3			
Cement (MJ/metric ton of cementitious product)		3,050	2,667	**2,695**
Aggregates (MJ/metric ton of product)		28	32	**27**
Concrete (MJ/m³ concrete)		145	143	**127**
Mortar (MJ/metric ton of product)		70	74	**69**
Lime and agricultural inputs (MJ/metric ton of product)		1,298	1,787	**2,187**
Total fuel consumption (TJ/Year)*	302-1			
Cement		94,053	88,655	**91,148**
Aggregates		130	54	**64**
Concrete		269	196	**212**
Mortar		53	24	**20**
Lime and agricultural inputs		20*	26*	**26**
*Adjusted data				
Specific consumption of electrical energy (KWH/Metric Ton)	302-3			
Cement (kWh/metric ton of cementitious product)		116.9*	113.5*	**111.0**
Aggregates (kWh/metric ton product)		2.7	2.9	**1.8**
Concrete (kWh/m³)		1.7	2.2	**1.8**
Mortar (kWh/t produto)		10.5	13.0	**10.4**
Lime and agricultural inputs (kWh/t product)		18.9	14.2	**26.9**
*Adjusted data				
Total electricity consumption (Total MWH/Year)				
Cement		3,807,361*	3,603,246*	**3,660,140**
Aggregates		13,745	7,395	**6,295**
Concrete		3,216	3,115	**3,142**
Mortar		7,963	11,494	**6,595**
Lime and agricultural inputs		33,993	45,033*	**47,196**
*Adjusted data				
Energy consumption inside the organization (GJ)	302-1			
Cement		93,157,013*	88,707,000*	**91,160,894**
Aggregates		165,060	94,537*	**86,962**
Concrete		280,166	207,020.1	**223,067**
Mortar		52,826	65,512.6	**43,431.0**
Lime and agricultural inputs		2,329,994	3,531,321.8	**3,828,828**
*Adjusted data				
Energy consumption outside the organization (GJ)	302-2			
Transport and distribution		8,087,144	8,074,023	**8,003,728**
MATERIALS USED BY WEIGHT (Million metric tons)	301-1			
Cement		52.85	46.19	**51.25**
Other businesses		11.99	8.49	**14.14**
Total non-renewable materials		64.84	54.68	**65.39**

	GRI	2016	2017	2018
OTHER AIR EMISSIONS				
NO_x				
Number of kilns reported	305-7	39	40	**35**
Total emissions (metric tons/year)		51,046*	53,916*	**51,810**
Average specifc concentration (g/metric ton clinker)		2,012	2,144*	**2,102**
% Reduction in NO_x compared to the previous year		-2.4%	-6.6%*	**2.0%**
*Adjusted data				
SO_2				
Number of kilns reported	305-7	38	40	**35**
Total emissions (metric tons/year)		17,004	16,039	**20,885**
Average specifc concentration (g/metric ton clinker)		672	638	**847**
% Reduction in SO_2 compared to the previous year		2.5%*	-5.0%*	**32.8%**
*Adjusted data				
PM				
Number of kilns reported	305-7	41	40	**35**
Total emissions (metric tons/year)		1,682	1,554*	**1,701**
Average specifc concentration (g/metric ton clinker)		66	62	**69**
% Reduction of PM compared to the previous year		-9.6%	-6.8%	**11.7%**
*Adjusted data				
Mercury				
Number of kilns reported	305-7	31	35	**34**
Total emissions (kg/year)		260	553	**171**
Average specifc concentration (mg/metric ton clinker)		10	22	**7**
% Reduction of mercury compared to the previous year		-43.6%	109%*	**-68.5%**
*Adjusted data				
VOCS				
Number of kilns reported	305-7	28	34*	**31**
Total emissions (metric tons/year)		2,113	1,509*	**1,483**
Average specifc concentration (g/metric ton clinker)		83	60	**59**
% Reduction of VOCs compared to the previous year		4.2%*	-28%*	**-1.1%**
*Adjusted data				
Dioxins/Furans				
Number of kilns reported	305-7	29	34	**33**
Total emissions (mg/year)		4,304*	12,546	**14,298**
Average specifc concentration (µg/metric ton clinker)		0.2*	0.5	**0.6**
% Reduction of Dioxins/furans compared to the previous year		-0.9%*	-194.2%*	**-16.3%**
*Adjusted data				
HM1 (CADMIUM + THALLIUM)				
Number of kilns reported	305-7	28	34	**35**
Total emissions (kg/year)		191	514*	**445**
Average specifc concentration (mg/metric ton clinker)		8	20	**18**
% Reduction of HM1 compared to the previous year		44.4%	-172.0%*	**11.6%**
*Adjusted data				
HM2 (antimony + arsenic + lead + chromium + cobalt + copper + manganese + nickel + vanadium)				
Number of kilns reported	305-7	27	33*	**35**
Total emissions (kg/year)		22,391	18,104*	**29,190**
Average specifc concentration (mg/metric ton clinker)		882	720*	**1,184**
% Reduction of HM2 compared to the previous year		42.9%	18.4%*	**-64.5%**
*Adjusted data				
Monitoring Data				
Total monitoring coverage rate (KP1) – Total coverage rate*	305-7	54.8%	68.8%*	**83%**
Continuous monitoring coverage rate (KP2) - PM, NOx and SO_2		90.2%	85%*	**100%**
*Adjusted data				

**Percentage of clinker produced in kilns covered by the monitoring system for Particulate Matter, NOX, SO2, VOC/THC, heavy metals (Hg, Cd, Tl, Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V) and PCDD/F

	GRI	2016	2017	2018
BIODIVERSITY AND RESOURCE CONSERVATION				
Total number of active mines	**304-1**			
Global		122	99	**86**
VCBR		-	40	**26**
VCNA		-	28	**29**
VCEAA**		-	31	**31**
Number of areas of high biodiversity value*	**304-1**			
Global		74	20	**14**
VCBR		-	12	**9**
VCNA		-	6	**4**
VCEAA**		-	3	**1**
* Three factors are evaluated: - The importance of the area of high relevance to biodiversity overlapping the mining area; - The percentage of overlapping area of high relevance to biodiversity under the mining area (considering a radius of 5 km from the center of the mine); - The distance from the area of high relevance to biodiversity under the mining center. ** VCEAA indicator only contemplates cement business.				
Number of high biodiversity value areas with existing biodiversity management plans*	**G4-MM2**			
Global*		4	2	**3**
* VCEAA indicator only contemplates cement business.				
% of quarries with closure plan*	**G4-MM10**			
Global*		86	90	**90**
* VCEAA indicator only contemplates cement business.				
Habitats protected or restored (in hectares)*	**304-3**			
Amazônia		2,783	2,783	**2,783**
Type of area			Legal reserve(a) and Permanent Protection Area(b)	**Legal reserve(a) and Permanent Protection Area(b)**
Status of the area			Preserved	**Preserved**
Caatinga		336	336	**336**
Type of area			Legal reserve(a) and Permanent Protection Area(b)	**Legal reserve(a) and Permanent Protection Area(b)**
Status of the area			Preserved	**Preserved**
Cerrado		2,848	2,848	**2,552**
Type of area			Legal Reserve(a), Permanent Protection Area(b), Private Reserve of Natural Heritage(c) and Wildlife Refuge Area(d)	**Legal Reserve(a), Permanent Protection Area(b), Private Reserve of Natural Heritage(c) and Wildlife Refuge Area(d)**
Status of the area			Preserved	**Preserved**
Mata Atlântica		5,075	5,075	**5,003**
Type of area			Legal Reserve(a), Permanent Protection Area(b) and Private Reserve of Natural Heritage(c)	**Legal reserve(a) and Permanent Protection Area(b) and Private Reserve of Natural Heritage(c)**
Status of the area			Preserved	**Preserved**
Pantanal		169	169	**169**
Type of area			Legal reserve(a) and Permanent Protection Area(b)	**Legal reserve(a) and Permanent Protection Area(b)**
Status of the area			Preserved	**Preserved**

	GRI	2016	2017	2018
Pampa		422	422	**422**
Type of area			Legal reserve(a) and Permanent Protection Area(b)	**Legal reserve(a) and Permanent Protection Area(b)**
Status of the area			Preserved	**Preserved**
* Indicator that considers all VCBR's businesses				
Brazilian areas classification a) Legal Reserve b) Permanent Protection Area c) Private Reserve of Natural Heritage d) Wildlife Refuge Area				
TOTAL NUMBER OF IUCN RED LIST AND NATIONAL CONSERVATION LIST SPECIES WITH HABITATS IN AREAS AFFECTED BY OPERATIONS	304-4			
Threatened		119	119	**119**
Near Threatened		74	74	**74**
Critically endangered		32	32	**32**
Vulnerable		102	102	**102**
* Indicator includes information for VCBR (cement and aggregates).				
WATER*				
Water Withdrawn (Concrete) - Million M³/Year	303-3			
Total water withdrawn		0.52	0.80	**0.58**
Groundwater		0.36	0.41	**0.21**
Water supply		0.16	0.38	**0.37**
Water Consumed (Concrete) - L/M³	303-5	133.91	553.09	**329.23**
PS: Indicator includes information for VCBR.				
Water Withdrawn (Cement) - Million M³/Year	303-3			
Total water withdrawn (Cement)		9.24	7.33	**15.03**
Surface water		6.57	5.65	**7.60**
Groundwater		2.36	1.34	**7.18**
Rainwater collected		0.19	0.24	**0.01**
Public or private water supplies (truck)		0.11	0.10	**0.12**
Other		-	-	**0.12**
Water Consumed (Cement) - L/Ton		305.96	249.90	**364.89**
Water Discharge (Cement) - Million M³/Year*	303-4 303-5			
Surface water bodies		-	2.57	**4.36**
Water discharge surface		-	0.20	**0.10**
Off-site water treatment		-	-	**0.05**
Other		-	-	**0.84**
Total water discharge (Cement) - M³/Year		3,299,128	2,762,201	**5,345,169**
* Estimated values				
PS: 2018 data includes information for VCBR and VCEAA				
WASTE MANAGEMENT AND RECYCLING				
Total Non-Hazardous Waste (Metric tons)	306-2			
Non-hazardous waste sent to industrial landfll		217,058	1,158*	**44,248**
Non-hazardous waste incinerated		395	360*	**1,684**
Non-hazardous waste sent for recovery		34,057	4,191*	**211**
Non-hazardous waste sent for reuse/recycling		246,270	11,983*	**27,687**
Non-hazardous waste sent for composting		328	1,689*	**67**
Non-hazardous waste with another destination		5,322	5,128*	**6,191**
Total Non-Hazardous Waste		503,428	24,509*	**80,089**
*Adjusted Data				
Total Hazardous Waste (Metric Tons)				
Hazardous waste incinerated		2,168	2,021	**96**
Hazardous waste sent to industrial landfll		1,983	300	**122**
Hazardous waste with another destination		1,664	272*	**554**
Total hazardous waste		5,870	2,593*	**772**
*Adjusted Data				

SOCIAL PERFORMANCE

	GRI	2016	2017	2018
EMPLOYEES BY REGION	102-8			
Brazil		7,909	7,251	**7,397**
Latin America		397	411	**407**
North America		2,881	2,276	**2,264**
Europe, Asia and Africa		2,546	1,974	**1,864**
EMPLOYEE TURNOVER (%)				
By region	401-1			
Brazil		-	27.5%*	**21.6%**
Other countries		-	15.3%*	**15.3%**
By gender	401-1			
Women		-	34.4%*	**28.2%**
Men		-	20.9%*	**17.7%**
By age group	401-1			
Under 30 years old		-	41.7%*	**32.2%**
Between 30 and 50 years old		-	16.8%*	**15.2%**
Over 50 years old		-	20.4%*	**16.8%**
*Adjusted data				
RATE OF NEW HIRES				
By region	401-1			
Brazil		-	17.9%*	**22.8%**
Other countries		-	17.3*	**12.5%**
By gender	401-1			
Women		-	32.4%*	**33.9%**
Men		-	15.4%*	**16.8%**
By age group	401-1			
Under 30 years old		-	43.1%*	**45.2%**
Between 30 and 50 years old		-	12.1%*	**13.4%**
Over 50 years old		-	7.1%*	**4.5%**
*Adjusted data				
% WOMEN IN THE WORKFORCE				
% Management and coordinator positions	405-1	-	20.2%*	**21.7%**
% Operational positions		-	12.2%*	**13.1%**
% Women in the workforce		-	13.4%*	**13.9%**
*Adjusted data				
% EMPLOYEES OVER 50 YEARS OLD				
% Management and coordinator positions	405-1	-	23.4%*	**21.4%**
% Operational positions		-	12.6%*	**19.6%**
% Employees over 50 years old		-	13.48%*	**19.7%**
*Adjusted data				

	GRI	2016	2017	2018
TRAINING				
No. average hours of training per employee per year	**404-1**			
Men				
President/Director		18	16	**8**
Manager/General Manager		53	60	**36**
Coordinator/Consultant		51	39	**35**
Technician/Analyst/Supervisor		51	57	**24**
Trainee		181	125	**0**
Operator		43	48	**18**
Women				
President/Director		65	9	**1**
Manager/General Manager		80	89	**28**
Coordinator/Consultant		58	34	**31**
Technician/Analyst/Supervisor		56	29	**16**
Trainee		208	122	**0**
Operator		27	20	**12**
Average hours of training (men and women)		34	46	**20**
TOTAL NUMBER OF EMPLOYEES COVERED BY COLLECTIVE BARGAINING AGREEMENTS				
Employees covered by collective bargaining agreements	**102-41**	9,720	9,312	**9,116**
Total number of employees		13,735	11,912	**11,932**
Percentage of employees covered		70.8%	78.2%	**76.4%**
PROPORTION OF SENIOR MANAGEMENT* HIRED FROM THE LOCAL COMMUNITY AT SIGNIFICANT LOCATIONS OF OPERATION *** **				
Percentage of senior management hired from local communities*	**202-2**			
VCBR		96.0%	96.9%	**96.9%**
VCNA			93.0%	**81.0%**
VCEAA			59.1%	**54.2%**
VCLatam			15.4%	**0.7%**
Percentage of employees from the local community**				
VCBR		99.7%	99.8%	**99.8%**
VCNA			99.9%	**99.9%**
VCEAA			97.4%	**96.6%**
VCLatam			69.3%	**69.3%**

* Includes senior managers, general managers, directors and the CEO.

** Employees born or naturalized in the country of operation are considered to be local hires.

*** Adjusted data

OCCUPATIONAL HEALTH AND SAFETY				
Number of fatalities - Cement, Aggregates and Concrete	**403-2**			
Employees (on-site)		0	1	**0**
Employees (off-site)		0	0	**0**
Contract staff (on-site)		5	0	**0**
Contract staff (off-site)		0	6	**4**
Third parties		0	2	**0**

	GRI	2016	2017	2018
INJURY FREQUENCY RATE WITH LOST TIME (LTI FREQUENCY RATE)				
Employees	403-2	1.06	1.39	**1.41**
Contract staff		0.87	0.77	**0.76**
Total - employees + contract staff		0.97	1.09	**1.09**
DAYS LOST DUE TO INJURIES (CALENDAR DAYS)				
Employees	403-2	2,246	3,442	**2,332**
Contract staff		1,105	1,175	**5,262**
LOST SEVERITY RATE (CALENDAR DAYS)				
Employees		- 74.25	114.60	**99.49**
Contract Staff		- 37.22	50.83	**235.60**
LOCAL COMMUNITY STAKEHOLDER ENGAGEMENT				
Global Social Investment (Million of reais)	413-1		11.7	**13.7**
Breakdown of social investments (%)				
Total number of operations with community involvement programs, impact and development assessments implemented in all organizations (Quantity)			64	**64**
Total number of operations			329	**383**
Percentage of operations with implemented programs of local community engagement, impact evaluation and local development (%)			19.5%	**24%**
Social Investment Distribution - By capital				
Human Capital			21.94%	**26%**
Institutional Capital			8.6%	**21%**
Social Capital			30.5%	**35%**
Economic Dynamism			31.0%	**18%**
Others			7.9%	**0%**

* Exchange rate used - December 31st, 2018

GRI CONTENT INDEX GRI102-55

For the Materiality Disclosures Service, GRI Services reviewed that the GRI content index is clearly presented and the references for Disclosures 102-40 to 102-49 align with appropriate sections in the body of the report. This service was performed on the English version of the report.

GRI Standard	Disclosure	Page number(s) and/or URL(s) and/or response	Omission		
			Part Omitted	Reason	Explanation
GRI 101: Foundation 2016					
General Disclosures					
GRI 102: General Disclosures 2016	**Organizational profile**				
	102-1 Name of the organization	Votorantim Cimentos S.A.			
	102-2 Activities, brands, products, and services	14, 15			
	102-3 Location of headquarters	91			
	102-4 Location of operations	13, 14, 15			
	102-5 Ownership and legal form	Votorantim Cimentos is a part of Votorantim S.A., one of the largest business conglomerates in Brazil, and 100% Brazilian-owned			
	102-6 Markets served	13, 14, 15			
	102-7 Scale of the organization	5, 13, 32			
	102-8 Information on employees and other workers	50, 88			
	102-9 Supply chain	80			
	102-10 Significant changes to the organization and its supply chain	13			
	102-11 Precautionary Principle or approach	58, 98	Our environmental performance is guided by our Global Environment Policy, a document that drives our work on many of our 2020 Sustainability Commitments. We also have the Green Rules: ten standards that make this policy tangible and guide the performance of all areas and the behavior of all employees.		
	102-12 External Initiatives	29, 77, 78			
	102-13 Membership of associations	54, 55			
	102-14 Statement from senior decision-maker	8, 9, 10, 11			
	Ethics and integrity				
	102-16 Values, principles, standards, and norms of behavior	28			
	Governance				
	102-18 Governance structure	24, 25			
	Stakeholder engagement				
	102-40 List of stakeholder groups	54, 55			
	102-41 Collective bargaining agreements	89			
	102-42 Identifying and selecting stakeholders	6, 54, 55			
	102-43 Approach to stakeholder engagement	6, 7, 54, 55, 80			
	102-44 Key topics and concerns raised	6,7, 80			

GRI Standard	Disclosure	Page number(s) and/or URL(s) and/or response	Omission		
			Part Omitted	Reason	Explanation
GRI 101: Foundation 2016					
General Disclosures					
GRI 102: General Disclosures 2016	**Reporting practice**				
	102-45 Entities included in the consolidated financial statements	Calmit Industrial Ltda. Votorantim Cimentos N/NE S.A. Votorantim Cimentos S.A. CRB Operações Portuárias S.A. Empresa de Mineração Acariúba Ltda. Fazenda São Miguel Ltda. Interávia Transportes Ltda. Votorantim Cement North America Cia de Cimento Pinheiro Machado Cimento Itaú do Paraná Ltda. Pedreira Pedra Negra Ltda. Cementos Artigas S.A. Petrolina Zeta Mineração Ltda. Mineração Potilider Lidermarc Indústria Votorantim Cementos Chile Ltda. DL Mineração Votorantim Cimentos EAA Inversiones S.L. Votorantim Cimentos Argentina S.A. Votorantim Cement Trading, S.L. Itacamba Cemento S.A. GB Minerales y Agregados S/A. Cimento Vencemos do Amazonas Ltda. Votorantim Cimentos Internacional Silcar Empreendimentos Com. e Part. Ltda VOTO Votor.Ov Trad Op.IV Ltd Votorantim Cimentos Machadinho Energia Ltda.			
	102-46 Defining report content and topic Boundaries	5, 6, 7			
	102-47 List of material topics	6			
	102-48 Restatements of information	Restatements were included on the Performance Table - Pages 79 to 90			
	102-49 Changes in reporting	Did not occur			
	102-50 Reporting period	January - December 2018			
	102-51 Date of most recent report	Votorantim Cimentos Integrated Report 2017 - April, 2017			
	102-52 Reporting cycle	Annual			
	102-53 Contact point for questions regarding the report	ri@vcimentos.com			
	102-54 Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option			
	102-55 GRI content index	91 to 97			
	102-56 External assurance	5 to 101			

GRI Standard	Disclosure	Page number(s) and/or URL(s) and/or response	Omission		
			Part Omitted	Reason	Explanation
Material Topics					
GRI 200 Economic Standard Series					
Economic Performance					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	30, 31, 32			
	103-3 Evaluation of the management approach	30,31,32			
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	79			
Market Presence					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	48, 49			
	103-3 Evaluation of the management approach	48, 49			
GRI 202: Market Presence 2016	202-2 Proportion of senior management hired from the local community	89			
Procurement Practices					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	33			
	103-3 Evaluation of the management approach	33			
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	80			
Anti-corruption					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	28, 29			
	103-3 Evaluation of the management approach	28, 29			
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	81			
	205-2 Communication and training about anti-corruption policies and procedures	29, 81			
	205-3 Confirmed incidents of corruption and actions taken	29, 81			
Anti-competitive Behavior					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	28, 29			
	103-3 Evaluation of the management approach	28, 29			
GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	81			

GRI Standard	Disclosure	Page number(s) and/or URL(s) and/or response	Omission		
			Part Omitted	Reason	Explanation
GRI 300 Environmental Standards Series					
Materials					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	56, 57			
	103-3 Evaluation of the management approach	56, 57			
GRI 301: Materials 2016	301-1 Materials used by weight or volume	84			
Energy					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	37, 38, 56, 57, 63			
	103-3 Evaluation of the management approach	37, 38, 56, 57, 63			
GRI 302: Energy 2016	302-1 Energy consumption within the organization	83, 84			
	302-2 Energy consumption outside of the organization	84			
	302-3 Energy intensity	63, 84			
Water					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	56, 57, 65			
	103-3 Evaluation of the management approach	56, 57, 65			
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	65			
	303-2 Management of water discharge-related impacts	65			
	303-3 Water withdrawal	87			
	303-4 Water discharge	87			
	303-5 Water consumption	87			
Biodiversity					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	56, 57, 64			
	103-3 Evaluation of the management approach	56, 57, 64			
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	86			
	304-3 Habitats protected or restored	86			
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	87			
Emissions					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	56, 57, 61, 62			
	103-3 Evaluation of the management approach	56, 57, 61, 62			
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	83			
	305-2 Energy indirect (Scope 2) GHG emissions	83			
	305-3 Other indirect (Scope 3) GHG emissions	83			
	305-4 GHG emissions intensity	83			
	305-5 Reduction of GHG emissions	83			
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	85			

GRI Standard	Disclosure	Page number(s) and/or URL(s) and/or response	Omission		
			Part Omitted	Reason	Explanation
Environmental Compliance					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	56, 57			
	103-3 Evaluation of the management approach	56, 57			
GRI 307: Environmental Compliance 2016	307-1 Non-compliance with environmental laws and regulations	82			
Supplier Environmental Assessment					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	33			
	103-3 Evaluation of the management approach	33			
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	80			
	308-2 Negative environmental impacts in the supply chain and actions taken	No impacts were identified			
Mining and Metals					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	56, 57, 64			
	103-3 Evaluation of the management approach	56, 57, 64			
GRI G4 Mining and Metals Sector Disclosures	MM2 - The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place	86			
GRI G4 Mining and Metals Sector Disclosures	MM10 - Number and percentage of operations with closure plans	86			
GRI 400 Social Standards Series					
Employment					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	48, 49, 51, 52			
	103-3 Evaluation of the management approach	48, 49, 51, 52			
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	88			
Occupational Health and Safety					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	56, 57, 59, 60, 61			
	103-3 Evaluation of the management approach	56, 57, 59, 60, 61			
GRI 403: Occupational Health and Safety 2016	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	89, 90			
Training and Education					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	48, 48, 51, 52			
	103-3 Evaluation of the management approach	48, 48, 51, 52			
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	51, 89			

GRI Standard	Disclosure	Page number(s) and/or URL(s) and/or response	Omission		
			Part Omitted	Reason	Explanation
Diversity and Equal Opportunity					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	48, 49, 50			
	103-3 Evaluation of the management approach	48, 49, 50			
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	88			
Non-discrimination					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	29			
	103-3 Evaluation of the management approach	29			
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	29, 81			
Freedom of Association and Collective Bargaining					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	28, 29			
	103-3 Evaluation of the management approach	28, 29			
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Votorantim Cimentos' Code of Conduct respects free association, recognizes trade unions as legal representatives of employees and seeks, in a manner consistent with its values and management beliefs, to encourage open dialogue among the company, its employees and their union representatives. The company negotiates directly with unions, and employees may also participate at the negotiating table			
Child Labor					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	28, 29			
	103-3 Evaluation of the management approach	28, 29			
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	Child labor and forced or compulsory labor is not tolerated by the organization. The issues related to these topics are addressed in the Code of Conduct and also by operational control audits. Complaints involving such incidents should be sent to the Global Business Ethics Office			
Forced or Compulsory Labor					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	28, 29			
	103-3 Evaluation of the management approach	28, 29			
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	Child labor and forced or compulsory labor is not tolerated by the organization. The issues related to these topics are addressed in the Code of Conduct and also by operational control audits. Complaints involving such incidents should be sent to the Global Business Ethics Office			

GRI Standard	Disclosure	Page number(s) and/or URL(s) and/or response	Omission		
			Part Omitted	Reason	Explanation
Local Communities					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	56, 57, 68, 69, 70, 71, 72, 73			
	103-3 Evaluation of the management approach	56, 57, 68, 69, 70, 71, 72, 73			
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	70, 90			
Supplier Social Assessment					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	33			
	103-3 Evaluation of the management approach	33			
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	80			
	414-2 Negative social impacts in the supply chain and actions taken	33, 80			
Public Policy					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	28, 29			
	103-3 Evaluation of the management approach	28, 29			
GRI 415: Public Policy 2016	415-1 Political contributions	80			
Socioeconomic Compliance					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	28, 29			
	103-3 Evaluation of the management approach	28, 29			
GRI: 419: Socioeconomic Compliance 2016	419-1 Non-compliance with laws and regulations in the social and economic areas	81			
Mining and Metals					
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	6, 76			
	103-2 The management approach and its components	29			
	103-3 Evaluation of the management approach	29			
GRI G4 Mining and Metals Sector Disclosures	MM7 - The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and indigenous peoples, and the outcomes.	29			

GCCA CHARTER

CO_2 AND CLIMATE PROTECTION	STATUS 2018
Use the tools set out in the GCCA CO_2 and Energy protocol to define and make public our baseline emissions	Protocol used by all plants of our cement business
Develop a climate change mitigation strategy, and publish targets and progress	**See our Sustainability Commitments for 2020**
Report annually on CO_2 emissions in line with the protocol	See our Integrated Report 2018
Participate in and contribute agreed datasets to the Getting the Numbers Right global cement database system of CO_2 and energy information	Data uploaded every year
RESPONSIBLE USE OF FUELS AND RAW MATERIALS	
Apply the Guidelines for Co-Processing Fuels and Raw Materials in Cement Manufacturing	Changing internal procedures
EMPLOYEE HEALTH AND SAFETY	
Apply the Health and Safety in the Cement Industry: Guidelines for Measuring and Reporting	Implemented. Data uploaded every year
Report to the GCCA annually on employee safety data in line with the guidelines developed for measuring and reporting (fatality data to be reported to the GCCA as of the year of joining)	See our Integrated Report 2018
EMISSIONS REDUCTIONS	
Apply the Guidelines for Emissions Monitoring and Reporting in the Cement Industry	Reporting used by all plants of our cement business
Make emissions data publicly available and accessible to stakeholders	See our Sustainability Commitments for 2020
Set emissions targets for main pollutants (NOx, SOx, dust) and report publicly on progress	See our Integrated Report 2018
LOCAL IMPACTS ON LAND AND COMMUNITIES	
Apply the Environmental and Social Impact Assessment Guidelines and develop tools to integrate them into decision making processes	Ongoing
Apply the Guidelines on Quarry Rehabilitation	Reporting used by all plants of our cement business in VCBR
WATER	
Apply the Protocol for Water Reporting for the Cement Industry	Reporting used by all plants of our cement business
REPORTING AND COMMUNICATIONS	
Report publicly on all agreed GCCA Key Performance Indicators (KPIs) on an annual basis	See our Integrated Report 2018
Publish a statement of business ethics	**See our Code of Conduct**
Establish a systematic dialogue process with stakeholders to understand and address their expectations	See our Integrated Report 2018
Report progress on developing stakeholder engagement programs	See our Integrated Report 2018
Develop documented and auditable environmental management systems at all plants	**See our Global Environmental Policy**
ASSURANCE	
CO_2 emissions data	
Companies will carry out assurance at least once every two years using recognized, independent third party assurance practitioners	Carried out every year by BVQI
Assurance practitioners will decide on the number of sites to be visited	Decided by BVQI
Assurance statements will explicitly mention the number of sites visited and the corresponding % CO_2 emissions covered	Included in SGS assurance statement
Safety data	
Companies will carry out assurance at least once every three years using recognized, independent third party assurance practitioners	Carried out every year by BVQI
NOx, SOx, and dust emissions data	
Companies will carry out assurance at least once every three years using recognized, independent third party assurance practitioners	Carried out every year by BVQI
Note: No history due to the creation of GCCA in 2018	

KPIs GCCA CHARTER

	2016	2017	**2018**
Climate Protection			
Total CO_2 emissions - gross (million tonnes)	22.9	21.7	**21.7**
Total CO_2 emissions - net (million tonnes)	22.3	21.0	**21.0**
Specific CO_2 emissions - gross (kg / tonne cementitious material)	672.3	656.7	**641.5**
Specific CO_2 emissions - net (kg / tonne cementitious material)	655.5	637.6	**621.6**
Responsible use of fuels and raw materials			
Specific heat consumption of clinker production (MJ/tonne clinker)	3,474	3,447	**3,542**
Alternative fossil fuel rate (%)	7.36%	8.80%	**9.8%**
Biomass fuel rate (%)	5.00%	6.00%	**8.7%**
Alternative raw materials rate (%)	8.4%	6.6%	**6.3%**
Clinker / cement ratio (%)	77.0%	76.6%	**75.2%**
Safety			
Number of fatalities (directly employed)	0	1	**0**
Number of fatalities per 10,000 directly employed	0	0.7954	**0.000**
Number of fatalities (indirectly employed)	5	6	**4**
Number of fatalities (third party)	0	2	**0**
Number of days lost due to injuries (calendar days / employees)	2,246	2,875	**2,332**
Total Number of days lost due injuries	3,351	4,124	**7,594**
Lost time injuries per 1 million man-hours (directly employed)	1.06	1.40	**1.41**
Emissions Reduction			
Emissions reductions Overall coverage rate: percentage (%) of clinker produced with monitoring of all pollutants mentioned in the emissions guidelines	54.8%	75.6%	**83%**
Coverage rate continuous measurement: percentage (%) of clinker produced with continuous monitoring of main pollutants, dust, NO_x, SO_2	90.2%	84.9	**100%**
Dust - coverage rate (%)	100.0%	95.9%	**100.0%**
NO_x - coverage rate (%)	100.0%	100.0%	**100.0%**
SO_2 - coverage rate (%)	95.4%	100.0%	**100.0%**
VOC/THC - coverage rate (%)	74.0%	83.0%	**90.0%**
PCDD/F - coverage rate (%)	75.0%	88.0%	**93.0%**
Hg - coverage rate (%)	78.0%	92.0%	**98.0%**
Sum of Cd and Tl - coverage rate (%)	70.0%	90.0%	**98.0%**
Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V - coverage rate (%)	66.0%	90.0%	**98.0%**
Dust - specific emissions (grams / tonne clinker)	66	62	**69**
NO_x - specific emissions (grams / tonne clinker)	2.012	2.144	**2.102**
SO_2 - specific emissions (grams / tonne clinker)	672	638	**847**
VOC/THC - specific emissions (grams / tonne clinker)	83	60	**59**
PCDD/F - specific emissions (µg / tonne clinker)	0.2	0.5	**0.6**
Hg - specific emissions (mg / tonne clinker)	10	22	**7**
Sum of Cd and Tl - specific emissions (mg / tonne clinker)	8	20	**18**
Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V - specific emissions (mg / tonne clinker)	882	720	**1.184**
Dust - absolute emissions (ktonnes / year)	1.68	1.56	**1.70**
NO_x - absolute emissions (ktonnes / year)	51.05	53.91	**51.81**
SO_2 - absolute emissions (ktonnes / year)	17.04	16.04	**20.89**
VOC/THC - absolute emissions (tonnes / year)	2,113	1,508	**1,463**
PCDD/F - absolute emissions (mg / year)	4.30	12.55	**14.30**
Hg - absolute emissions (kg / year)	260	553	**171**
Sum of Cd and Tl - absolute emissions (kg / year)	191	514	**445**
Sum of Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V - absolute emissions (t / year)	22.39	18.10	**29.19**

PS: Scope contemplates only the cement business (100% of our units)

	2016	2017	**2018**
Local impacts on land and communities			
Percentage (%) of sites with community engagement plans in place	32.29%	19.5%	**24%**
Percentage (%) of sites with quarry rehabilitation plans in place	86%	90%	**90%**
Number of quarries within, containing, or adjacent to areas designated for their high biodiversity value, as defined by GRI 304-1	74	20**	**14**
Percentage (%) of mines with high biodiversity value where biodiversity management plans are actively implemented	5.4%	10%	**21%**

* First year with global reach KPI
** In 2017, there was a review of the methodology to calculate this indicator. In this methodology three factors are evaluated:
- The importance of the area of high relevance to biodiversity overlapping the mining area;
- The percentage of overlapping area of high relevance to biodiversity under the mining area (considering a radius of 5 km from the center of the mine);
- The distance from the area of high relevance to biodiversity under the mining center.

ASSURANCE LETTER GRI102-56

INDEPENDENT ASSURANCE STATEMENT
BUREAU VERITAS

To Votorantim Cimentos´s stakeholders

INTRODUCTION

Bureau Veritas Certification Brazil (Bureau Veritas) was engaged by Votorantim Cimentos, to conduct an independent assurance of its Integrated Report for the year 2018 (hereinafter referred to as the Report).

This assessment was conducted by a multidisciplinary staff with expertise in non-financial data.

SCOPE OF WORK

The scope of this assurance verification encompassed the Standard and Principles[1] of the Global Reporting InitiativeTMGRI for Sustainability Reports , including the GRI Mining and Metal Sector Disclosure (2013), covering the calendar year of 2018.

The escope of work also encompassed the Cement Sustainability Initiative (CSI) Guidelines Report and Monitoring of Emissions in the Cement Industry, ver. 2.0 and Safety in the Cement Industry: Guidelines for measuring and reporting, ver. 4.0.

VOTORANTIM CIMENTOS´S AND BUREAU VERITAS RESPONSIBILITIES

The collection, calculation and presentation of the data published in the report are Votorantim Cimentos's management sole responsibility. Bureau Veritas is responsible for providing an independent opinion to the Stakeholders, pursuant to the scope of work defined in this statement.

METHODOLOGY

The assurance work covered the following activities:

1. Interviews with the personnel responsible for material issues and Reportcontent;
2. Analysis of documentary evidence provided by Votorantim Cimentos in relation to the reporting period (2018);
3. Verification of performance data relating to the principles that ensure the quality of the information, pursuant to the GRI Standards and the Mining and Metal Sector Disclosure;
4. Verification of performance data regarding criteria established in the CSI Guidelines for Report and Monitoring of Emissions in the Cement Industry and Safety in the Cement Industry;
5. Review of Votorantim Cimentos´s internal systems for data aggregation;
6. Visits to the following sites: Global Corporate Center, São Paulo/SP; Operational units of Asment Temara/Marrocos; Bowmanville/Canadá; Nobres/MT; Salto de Pirapora/SP;
7. Desk review of Votorantim Cimentos's stakeholder engagement activities.

The level of verification adopted was Limited, according to the requirements of the ISAE 3000 Standard[2], which were incorporated to the internal assessment protocols of Bureau Veritas, except for the following themes that were verified based on a Reasonable level of assurance: Labor health and safety, emissions to the atmosphere, Greenhouse Gas (GHG) emissions.

Additionally to this scope of verification, the GHG inventory of Votorantim Cimentos Brasil was separately verified by Bureau Veritas, following a specific protocol.

LIMITATIONS AND EXCLUSIONS

Excluded from the scope of this work was any assessment of information related to:

- Activities outside the defined reporting period;
- Statements of position (expressions of opinion, beliefs, goals, or future intentions) on the part of Votorantim Cimentos;
- Economic and financial data contained in this Report which has been taken from financial statements verified by independent financial auditors;
- Data and information concerning operations and activities that are not in the scope of the Report.

TECHNICAL REPORT

- Votorantim Cimentos issued the Report in compliance with the GRI Standards and Principles, also including the Mining & Metals Sector Supplement;
- The data published concerning the emissions produced by their industrial processes are in accordance with the criteria of the Guideline for Emissions, Monitoring and Reporting in the Cement Industry;
- We noticed there was an increase in the total coverage and continuous monitoring rates (KPIs 1 and 2 of the above mentioned Guideline) in the last two years;
- The safety indicators published in the Report meet the criteria of the Industry Safety Guideline;
- During our visits we observed that corrective actions were taken to improve the occupational safety performance, among which the audits between units of the group are worth mentioning. Nevertheless, the Report does not present preventive actions carried out to reduce the accident

1 Materiality, Stakeholder Inclusiveness, Sustainability Context, Completeness, Balance, Comparability, Accuracy, Periodicity, Clarity, and Reliability
2 ISAE 3000: International Standard on Assurance Engagements

rates, which have remained stable in the last years;

- The data presented to comply with the GHG emissions indicators are part of the GHG emissions Inventory of Votorantim Cimentos. This inventory was verified by Bureau Veritas, through an independent assurance process. We confirmed that the presentation of data concerning the inventory was based on the GRI standards methodology;
- During our visits to the units abroad, we verified that the collection of information for the Report follows a defined flow. However, the data collection process and the definition of responsibilities can still be improved;
- As regard to biodiversity, we noticed the formalization of a biodiversity policy which has not been totally implemented yet in the units abroad;
- Votorantim Cimentos published data regarding indicators associated to material aspects of the GRI standards and the sector supplement. It is our understanding that there is still room for the publishing of several data associated with relevant indicators pursuant to the company's materiality matrix.

RECOMMENDATIONS

- Prioritize efforts to define clear flows for the collection of data of indicators associated to material issues, with the purpose of strengthening the compliance with the GRI standards;
- Implement the company's biodiversity policy in the units abroad, with the purpose of defining which units need a biodiversity management plan (indicator MM2 of the mining & metals sector supplement);
- Enrich the Report with data and information that demonstrate the efforts made in the prevention of accidents.

CONCLUSION

As a result of our assurance nothing has come to our attention that would indicate that:

- The information presented in the Report is not balanced, consistent and reliable;
- Votorantim Cimentos has not established appropriate systems for the collection, aggregation and analysis of quantitative and qualitative data used in the Report;
- The Report does not adhere to the Core option and the Principles for defining report content and quality of the GRI Standard.

DECLARATION OF INDEPENDENCE AND IMPARTIALITY

Bureau Veritas Certification is an independent professional services firm specializing in Quality, Health, Safety, Socialand Environmental Management, with more than185 years' experience in independent assessment.

Bureau Veritas has a quality management system that is certified by a third party, according to which policies and documented procedures are maintained for the compliance with ethic, professional and legal requirements.

The assurance team has no links with Votorantim Cimentos and the assessment is performed independently.

Bureau Veritas implemented and follows a Code of Ethics throughout its business, in order to assure that its staff preserve high ethical, integrity, objectivity, confidentiality and competence/ professional attitude standards in the performance of their activities. At the end of the assessment, a detailed report was drawn up, ensuring traceability of the process. This Report is kept as a Bureau Veritas management system record.

CONTACT

Bureau Veritas Certification is available for further clarification on: **www.bureauveritascertification.com.br/faleconosco.asp** or by telephone (55 11) 2655-9000.

São Paulo, Brazil, March 2019.

Alexander Vervuurt
Lead Auditor; Assurance Sustainability Reports (ASR)
Bureau Veritas Certification – Brazil

CORPORATE INFORMATION

BOARD OF DIRECTORS

Paulo Henrique de Oliveira Santos (Chairman) - in memoriam
João Carvalho de Miranda
Fábio Ermírio de Moraes
José Ermírio de Moraes Neto
Johann Markus Akermann (Independent director)
Alexandre Gonçalves Silva (Independent director)
Luiz Antonio dos Santos Pretti (Independent Director)
Francisco de Sá Neto (Independent director)

EXECUTIVE LEADERSHIP

Walter Dissinger – Global CEO
Filiberto Ruiz – CEO, VCNA
Jorge Wagner – CEO, VCEAA
André Roberto Leitão - COO, Global
Hugo S. Armelin - Comercial Director, Brazil
Álvaro Lorenz – Global Director, Technical Department and Sustainability
Cristiano Carvalho Brasil – Global Director, People, Management and Communications
Gabriela Woge – Treasurer and Global Director, Investor Relations
Luiz Marcelo Pinheiro Fins – Global Director, Legal (Interim)
Osvaldo Ayres Filho – Global Director, Finance
Ricardo Turra – Global Director, Internal Audit

HEADQUARTERS GRI102-3

Rua Gomes de Carvalho, 1996
São Paulo – SP – Brazil
+ 55 11 4572-4000
www.votorantimcimentos.com

CREDITS

PROJECT DIRECTOR: Álvaro Lorenz

GENERAL COORDINATION: Alexandre Henrique Takano

TEAM: Christopher Mason, Fábio Cirilo, Gabriela Woge, Kelly Cristina Bassi Theodosio, Leonardo Ferreira Gomes Luna, Luiz Germano Bernartt Junior, Maria Jose Martin Aradilla, Melissa Domenich Bianchi e Paloma Capistrano Pinheiro

CONTENT AND EDITING: Editora Contadino

GRAPHIC DESIGN AND LAYOUT: The Infographic Company: Gerson Mora e Anna Luiza Aragão

MATERIALITY: Ampla Consultoria

ENGLISH VERSION: Claudia Gustavsen

PHOTOS: Sergio Zacchi, Leonardo Rodrigues, Henrique Suenaga and Image bank of Votorantim Cimentos

We are grateful for the support and dedication of the corporate and industrial areas of Votorantim Cimentos and, especially, to the Salto de Pirapora, Nobres, Asment Temara and Bowmanville units, which were part of the assurance process and the collection and verification of the information that is included in this document.

Votorantim
Cimentos
Life is made to last