

**nexa**

Annual Report

2018



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We have adopted the guidelines of the International Integrated Reporting Council (IIRC) and the GRI Standards of the Global Reporting Initiative (GRI) to present the annual performance of Nexa Resources S.A. from January 1 to December 31, 2018. The previous edition, for the year 2017, was published in April 2018. The content includes economic, social and environmental aspects, as well as the risks and opportunities mapped and considered of interest by shareholders and other stakeholders.

GRI 102-1, 102-50, 102-51, 102-52 SDG 12.6

The financial indicators follow the International Financial Reporting Standards (IFRS) while social and environmental data have been calculated according to Brazilian standards applied to labor and environmental issues. We use the GHG Protocol methodology for the greenhouse gases aspect. The survey of the standard contents, as well as complementary information, was the responsibility of the Sustainability area. The document was assured by PricewaterhouseCoopers (PWC).

GRI 102-56

The consolidated financial statements and the accounting audit report are available for viewing on our Investor Relations website (<https://ir.nexaresources.com>) on the results page. You can download this document, also in Portuguese and Spanish, on our institutional website ([www.nexaresources.com](http://www.nexaresources.com)).





**Materiality**





GRI 102-44, 102-46

The content of this document follows the Materiality Principle established by the IIRC and GRI and was defined based on the evaluation of topics of major relevance to the mining and smelting sector, the Sustainability Accounting Standards Board (SASB) guidelines and sectorial benchmarking. The most important issues were prioritized in consultation with Nexa's leadership.

The material aspects of sustainability and its long-term goals are presented throughout the report and cover the subjects: People, Safety and Health, Waste, Water, Emissions and Energy, Local Development, Decommissioning and Human Rights. The Economic Performance, Ethics and Integrity topics are considered as transversal topics. GRI 102-47

**Material topics**

Material topic <small>GRI 102-47</small>	Explanation of the material topic <small>GRI 103-1</small>	Where the impacts occur	Involvement with impacts
	Why it is material for Nexa		
Water 	The mining activity involves technical procedures in which water assumes an important role, both for extraction and processing. It is an indispensable input, especially in a context in which water resources are scarce and their management has an impact on local communities. Thus, it is even more important to strive to reduce water use and increase reuse throughout the value chain.	All operations	Nexa and communities
Waste 	Our activities generate a significant amount of waste. There are regulatory requirements, such as the National Solid Waste Policy (PNRS, in Portuguese) in Brazil, which determine the company's responsibilities in this area. Thus, we seek to reduce the generation of mining and metallurgical waste, complying with local legislation, and acting committed to our strategy, co-creating a positive legacy for society.	All operations	Nexa, suppliers and communities
Energy and emissions 	We consume large amounts of energy due to the nature of our activities and logistics and transportation processes. That is why we seek new technologies and progress in sustainable energy generation. The search for green technologies is also due to the fact that mining activities comprise a considerable percentage of foreign trade; hence, they are subject to the norms and regulations of the developed countries. As a result, we contribute to the advancement of the National Policy on Climate Change policy.	All operations	Nexa, suppliers and communities
People 	Our personnel management model and our policies and tools have guided the development of people based on Intelligence, Enthusiasm and Courage.  In recent years, the Diversity Committee has coordinated the implementation of a number of actions aimed at promoting diversity, uniformly and constantly, in all our units.	All operations	Nexa and communities

Material topic <small>GRI 102-47</small>	Explanation of the material topic <small>GRI 103-1</small>	Where the impacts occur	Involvement with impacts
	Why it is material for Nexa		
Safety and health 	We continuously invest in strengthening a culture focused on safety and health for both our own as well as outsourced employees, in improving training, especially for risky activities, and in enhancing working conditions to assure safe and healthy conditions for our employees.	All operations	Nexa, suppliers and communities
Local development 	Our projects emphasize relationship actions with the communities and training of local workforce when we set up the units and in their future operations, always taking into account the co-creation of a legacy in the localities in which we are present	All operations	Nexa and communities
Human rights 	We believe that maintaining human rights is an essential condition for building long-term partnerships. Therefore, our contracts involve a number of requirements, such as the adoption of clauses, compliance with legal obligations and supplier assessment. All these measures are important for our suppliers to develop and implement appropriate business processes.	All operations	Nexa, suppliers and communities
Decommissioning 	Our activities impact the environment and the communities in the vicinity of our units. As a way of minimizing them, we designate all the activities necessary to go beyond compliance with the legal closing requirements, through documents that describe guidelines for the deactivation of an industrial mining unit. These take into account alternative future uses, with the goal of co-creating the best legacy to the neighboring communities, free of environmental liabilities.	Mining and smelters	Nexa, environmental agencies, local governments and communities

# Message from the Board of Directors

GRI 102-10, 102-14



“

*We have sought to move closer to our investors, who have made important contributions to our planning. At the same time, we have set out to inform the market more clearly about our zinc and copper business*

**In 2018, we completed one year as a publicly traded company on two of the world's most important stock exchanges - New York and Toronto -, which instilled in us a global market vision and also served as a great learning experience for improving our governance.**

We consolidated the activities of the Board of Directors, with the participation of four independent members, fully active advisory committees and the review of fundamental policies for the good functioning of the organization. The diversity we seek in our company is mirrored in the formation of our Board, composed of seven men and two women representing five nationalities – Brazilian, Canadian, American, Croatian and Chilean.

As we complete the process initiated with the 2018 Strategic Dialogue, held every three years, we have strengthened our corporate attributes and ensured the guidelines for our journey into the future. Our aspirations for the coming years are marked by the desire to be globally perceived as an intelligent and trustworthy company, one that consistently delivers attractive results. Being intelligent means finding simple solutions to our challenges through transformational technologies and processes, moving towards becoming an increasingly better company. And being trustworthy is the commitment to plan what we do and deliver what we promise, as well as co-creating a legacy alongside society.

We approved our Compliance Program over the course of the year, revised and optimized to adhere to the laws of all the countries in which we operate. As part of the program, we have published four new policies – Anti-Corruption, Anti-Money Laundering and Anti-Terrorism, Antitrust and Compliance – and nine internal procedures detailing how to manage these issues. The documents address aspects such as human rights, political contributions, conflicts of interest and employee rights and duties, reinforcing our commitment to the United Nations Global Compact.

Our Code of Conduct, based on the values of Votorantim S.A., our largest shareholder, has been reviewed and made public both internally and externally. It guides the behavior we desire from our employees, third parties and suppliers, so that the challenges are faced ethically and with a social and citizenship-based conscience. Votorantim completed its 100th anniversary in 2018, an uncommon milestone in Brazilian corporate history. The transformation and renewal capacity, long-term vision and commitment to the future mark the performance of all of companies in which Votorantim has invested, such as Nexa, in which it owns 64.3% of the capital and inspired this centennial celebration.

We have sought to move closer to our investors, who have made important contributions to our planning. At the same time, we have set out to inform the market more clearly about our zinc and copper business, which has characteristics that are distinct from most of the players in the mining arena. We have organized numerous contacts and meetings with analysts, investors and banks to make our goals, strategies and way of operating transparent. This is a challenge that extends into 2019.

From the internal point of view, we had some operational challenges in Peru that are already being addressed, as well as strong investment in research into new projects, extending the life of our mines; furthermore, we have taken actions to introduce new processes and technologies that make our mining and smelting operations increasingly more productive.

In the external scenario, we had to coexist with the volatility of metal prices on the London Metal Exchange (LME), which also influenced our net revenue of US\$ 2.5 billion. Although there were no sufficient grounds to justify such behavior, zinc ended the year at an average price of US\$ 2,922 a tonne, compared to US\$ 3,421 in the first quarter. In a scenario of rising demand and without evidence of

unaccounted inventories, a situation aggravated by China's announcement of production reduction, we expect the price of the metal to reach better levels, favoring our revenues in the coming years.

In the meantime, we are strengthening our structures and our governance, building an increasingly intelligent and reliable company that can smoothly overcome external adversities, based on our constant commitment to operational excellence, transparency in all levels of governance, aiming at creating value for all our stakeholders.

**Luis Ermirio de Moraes**  
Chairman of the Board of Directors

# Message from the CEO

GRI 102-10, 102-14



“

*We are determined to achieve our aspirational goal: to be globally recognized as an intelligent and reliable company, growing in zinc and copper mining, taking the world of mining to the world of people and consistently delivering attractive results.*

**In 2018, our operations made significant progress, featuring the implementation of new projects and internal processes that strengthen our capacity to create value over the long-term. Special mention should be given to the improvements we made in safety, a key topic that is one of our organization's values. Our indicators were much better than in previous years, the result of a robust plan of action that involved everyone in management.**

Over the course of the year, our Board of Directors defined Nexa's strategic mandate for the next three years. As an intelligent, reliable company that delivers what it promises, we aspire to be more innovative and connected to the world and the trends, identifying simple solutions to our challenges. This was our main guideline in 2018.

We also moved forward with the integration process between the units in Brazil and Peru. Today, we are a unique company, with stronger and better adapted technical and administrative teams. The full integration of our operations was fundamental to the optimization of our processes, systems, structures and costs in a manner that was both competitive and attractive for the market.

We place great emphasis on innovation, with transformative technologies and processes. Toward this end, we successfully concluded the second edition of the open innovation Mining Lab that included 186 registered projects and nine winning startups, as well as the participation not only of Brazilian companies but also Canadian, Peruvian and American firms.

All the innovative and state-of-the-art technology is being applied in our operations — especially our new mineral exploitation project in Aripuanã in the state of Mato Grosso. The unit received its installation license in December, and is being built right from the start using all of the standards of excellence we have been striving to implement. Aripuanã marks the beginning of a new phase in the company, wherein we are beginning to deliver what we promised in our IPO. It also represents a great challenge for the upcoming two years.

Our Capex totaled US\$ 300 million in the year, mainly earmarked for Growth and Operational Excellence purposes. In addition to the resources directed to Aripuanã, we also made progress on the Magistral, Hylarion and Pukaqaqa greenfield projects.

From the commercial point of view, it was a period of good results. This was due to the offsetting of the decline in demand in South America with growth in other places, such as the U.S. and Asian markets. Another positive factor was the opening of an office in Shanghai, China, which lets us capture opportunities and better understand the characteristics of this important market.

We believe that talent development is also a critical factor for the success of our business. Therefore, we invest in programs and initiatives that increasingly allow swapping experiences and cultural integration between our teams. We have global programs in place for the development of young talents, the formation of managers and exchange opportunities between the countries in which we operate. The result of our employee climate survey confirmed that we are on the right track: 93% of staff participated and the favorable rating we earned places us among the first quartile in the industry in terms of organizational climate.

One way to value the initiative of our employees is through the Recognition Program, which rewards actions in the social, operational and environmental spheres. This year, we saw higher participation and levels of commitment than in 2017. One example of team engagement is the growth of the volunteer program, for which we have ambitious goals designed to boost our contribution in the coming years.

We are determined to achieve our aspirational goal: to be globally recognized as an intelligent and reliable company, growing in zinc and copper mining, taking the world of mining to the world of people and consistently delivering attractive results.

**Tito Martins**  
Chief Executive Officer



# Nexa Resources

**We are a mining and smelting company with an emphasis on zinc and copper, with over 60 years of experience in asset development and integrated production in Brazil and Peru. Our shares have been traded since October 2017 on the New York (USA) and Toronto (Canada) stock exchanges. Our main shareholder is Votorantim S.A., which owns 64.3% of our capital.** [GRI 102-1, 102-5](#)

We operate five polymetallic mines, three of which are located in the central Andes of Peru (Cerro Lindo, El Porvenir and Atacocha) and two in the state of Minas Gerais, Brazil (Vazante and Morro Agudo). Our operations consist of large-scale underground and modern and mechanized open-pit mines, which produced 556 thousand tonnes of equivalent zinc<sup>1</sup> in 2018. Cerro Lindo and Vazante are among the world's 15 largest zinc mines and, combined with our other mining operations, placed us among the world's top five zinc producers, according to Wood Mackenzie. [GRI 102-2, 102-4, 102-7](#)

We also have three zinc smelters: one in Peru (Cajamarquilla) and two in Brazil (Três Marias and Juiz de Fora), which produce metallic zinc, zinc oxide and by-products. Cajamarquilla is the only zinc smelter operation in Peru and the seventh largest in the world by volume produced, according to Wood Mackenzie's survey (2018 data). In the year, our our smelters produced 638 thousand tonnes, of which 607 thousand tonnes were metallic zinc and 31 thousand tonnes were zinc oxide. [GRI 102-4, 102-7](#)

Our main headquarters are in Luxembourg, with administrative offices in the cities of São Paulo (Brazil) and Lima (Peru). Our commercial offices are located in Brazil, Peru, the United States, Austria and China. [GRI 102-3, 102-4](#)

In December 2018, we received the license to install the Aripuanã Mining Project in the state of Mato Grosso, and we plan to build the project starting in the first quarter of 2019, with operations beginning in 2021. Annual production capacity is estimated at 2.3 million tonnes of ore, according to the Technical Report published on our Investor Relations website and also filed with regulators in the United States and Canada. In May, we sold the assets of the Fortaleza de Minas unit, where we produced sulfuric acid, a product that lost relevance in our business portfolio. We also shut down a commercial office in Canada, a market that is now being serviced by the Houston unit (USA). [GRI 102-10](#)

Net revenue totaled US\$ 2.5 billion in 2018, an increase of 1.7% over the previous year (US\$ 2.4 billion) and adjusted EBITDA was US\$ 605 million (US\$ 668 million in last year). At the end of the year, we had 5,591 own employees<sup>2</sup> and 11,345 outsourced employees. [GRI 102-7](#)

## Integration

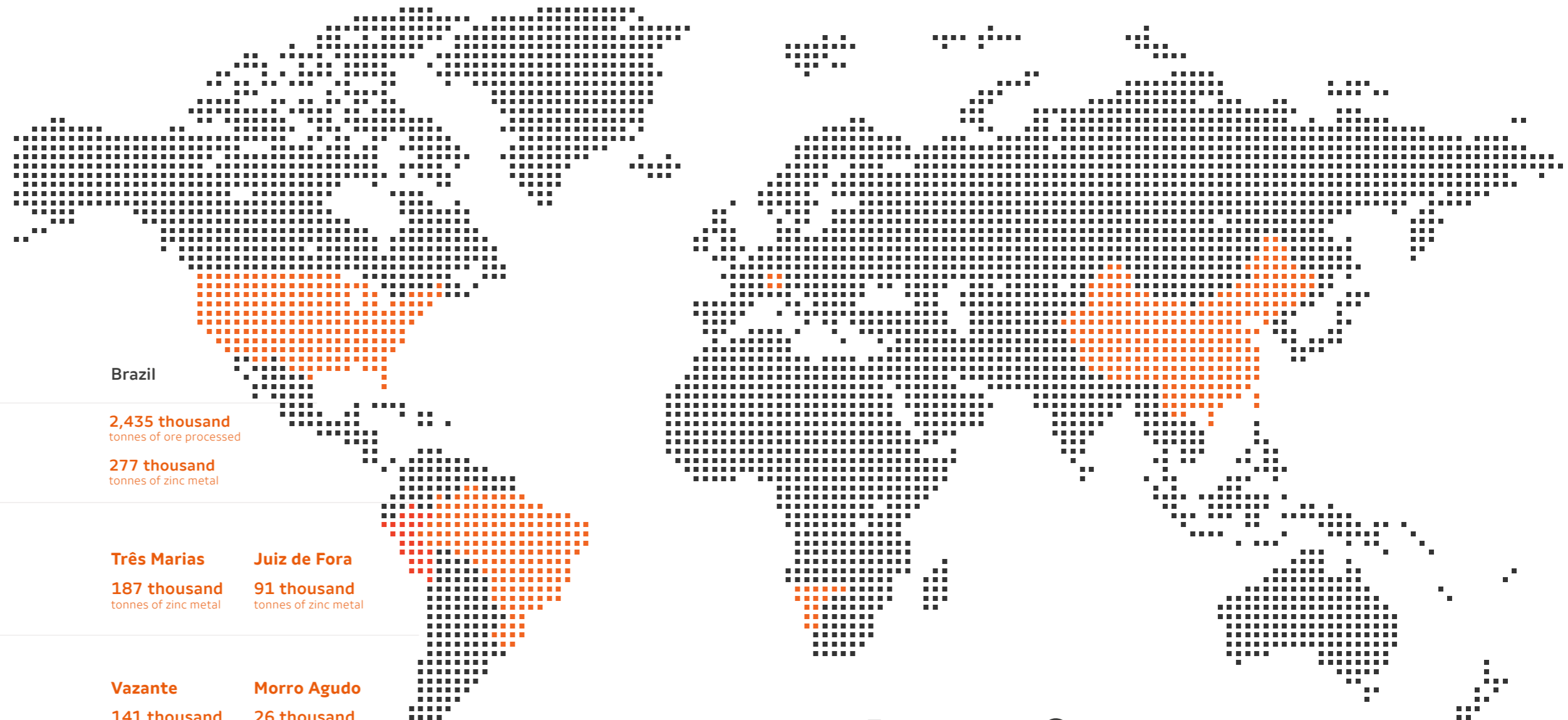
The integration between mines and smelters represents a distinguishing characteristic in our operations. In Brazil, the zinc concentrates produced in the Vazante and Morro Agudo mines are transformed into metallic products at the Três Marias unit. The Juiz de Fora plant, in addition to concentrates, also uses recyclable materials (such as steel scrap metal and powder) for the production of zinc. In Peru, most of the zinc concentrates produced at the Cerro Lindo, El Porvenir and Atacocha mines are processed by the Cajamarquilla unit.

Our level of integration is around 60% and we always strive to reduce the supply of zinc concentrate received from third parties. For example, the start-up of Aripuanã in 2021 will contribute to greater integration because the expected average annual production of concentrate from this project is equivalent to 28% of the volume purchased from suppliers.

<sup>1</sup> Consolidated mineral production in thousand tonnes of zinc equivalent, calculated by converting volumes of copper, lead, silver and gold to an equivalent volume of zinc at the benchmark average prices for 2018. The prices used for conversion are: zinc: US\$ 2,922/t; copper: US\$ 6,523/t; lead: US\$ 2,242/ton; silver: US\$ 16/ounce; gold: US\$ 1,268/ounce.

<sup>2</sup> This value disregards trainees and young apprentices.

# Operations and Projects GRI 102-4, 102-7



## 2018 Production

### Peru

**10,616 thousand**  
tonnes of ore processed

**330 thousand**  
tonnes of zinc metal

### Smelters

#### Cajamarquilla

**330 thousand**  
tonnes of zinc metal

### Mining

#### Cerro Lindo

**130 thousand**  
tonnes of zinc contained in concentrates

#### Pasco (El Porvenir e Atacocha)

**75 thousand**  
tonnes of zinc contained in concentrates

**45 thousand**  
tonnes of contained lead

**39 thousand**  
tonnes of contained copper

### Greenfield projects in development

Magistral, Pukaqaqa, Shalipayco

### Projects in resource definition process

Florida Canyon, Tajo San Gerardo

### Brazil

**2,435 thousand**  
tonnes of ore processed

**277 thousand**  
tonnes of zinc metal

#### Três Marias

**187 thousand**  
tonnes of zinc metal

#### Juiz de Fora

**91 thousand**  
tonnes of zinc metal

#### Vazante

**141 thousand**  
tonnes of zinc contained in concentrates

#### Morro Agudo

**26 thousand**  
tonnes of zinc contained in concentrates

**7 thousand**  
tonnes of contained lead

Aripuanã, Bonsucesso, Caçapava do Sul

Calamina



### Mining and processing

- Vazante (Brazil)
- Morro Agudo (Brazil)
- Cerro Lindo (Peru)
- El Porvenir (Peru)
- Atacocha (Peru)



### Smelters

- Três Marias (Brazil)
- Juiz de Fora (Brazil)
- Cajamarquilla (Peru)



### Mineral exploration

- Brazil
- Peru
- Namibia



### Offices

- Luxembourg - headquarters, commercial and administrative
- Belo Horizonte (Brazil) - administrative
- São Paulo (Brazil) - central administrative
- Lima (Peru) - commercial and administrative
- Houston (United States) - commercial
- Salzburg (Austria) - commercial
- Shanghai (China) - commercial

# 2018 Highlights



## Financial capital GRI 102-7



US\$ 2.5 billion  
net revenue

US\$ 605 million  
adjusted EBITDA

US\$ 1.2 billion  
added value

6.1 years  
of average maturity of the debt, after renegotiation in the year.



## Manufactured capital

US\$ 300 million  
of investments in assets (Capex)

556 thousand  
tonnes of zinc equivalent produced

4%  
increase in the production of the smelters

License for the Aripuanã Project (Brazil), with production capacity estimated at

2.3 million  
t/year of ROM (Rum of Mine)



## Human Capital



5,591  
own employees

Over  
210 thousand  
hours of training

More than  
US\$ 2 million  
invested in training

## Social and relationship capital



US\$ 10.4 million  
invested in social actions, with **193 projects** in **17 localities**

More than  
10 thousand  
people benefited by the **We Are All Together (Somos Todos)**

More than  
29 thousand  
people benefited by social investments

## Intellectual Capital



US\$ 9.2 million  
invested in Research and Development

US\$ 2.4 million  
for 9 startups selected in MiningLab2

Pilot project  
Ore sorter  
for metal recovery in Vazante

## Natural Capital



66%  
of water recirculation over total consumption in units

24%  
of the Juiz de Fora smelter's production coming from secondary (recycled) materials







# Strategy

## Intelligent and reliable

GRI 103-1, 103-2, 103-3

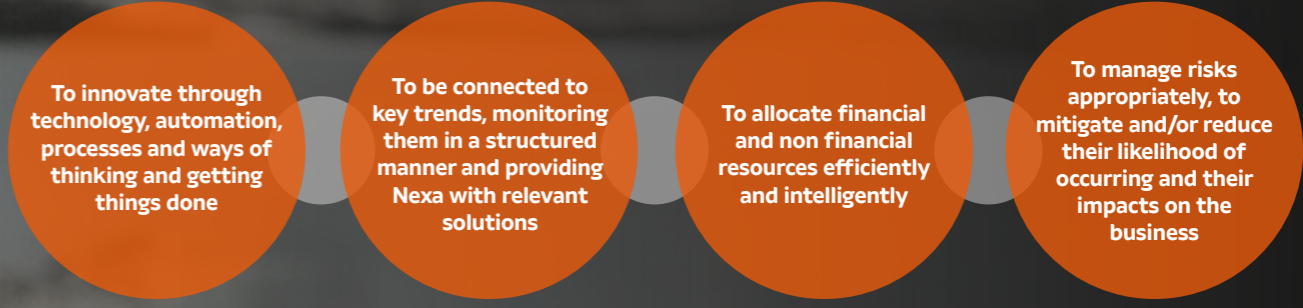
We want to be globally perceived as an intelligent and reliable company that creates value for all stakeholders. This is part of our strategic objective, revised in 2018 by the Board of Directors and the Board, which will guide us for the next few years (more information on how the review process for our strategy was conducted is on page 20).

Our core business is the extraction of ore and metal processing and production. By acting intelligently and reliably, we develop quality products that will be transformed into solutions to benefit millions of people. We have followed a very well devised path to bring the world of mining to the world of people, based on our strategy that defines who we are and guides us to continue growing in a competitive manner.

Being intelligent means innovating through transforming technologies and processes, keeping us connected to the world and its trends, carefully allocating human and financial resources and managing the risks inherent in our business. Acting jointly to find simple solutions to our challenges, we are moving towards becoming an increasingly improved company.

And being reliable means that we are committed to operating safely and sustainably, contributing in a material way to the development of the localities in which we operate. Furthermore, to be reliable is to be perceived as a company that plans what it does and fulfills what it plans.

### TO BE INTELLIGENT



### TO BE RELIABLE



# Business model

Our business model has been established to take into account the capture, creation and distribution of value from the six capitals proposed by the International Integrated Reporting Council (IIRC): financial, manufactured, human, intellectual, natural and social and relationship. In the sector in which we operate, mining, the main elements of value capture involve the natural, financial and human capitals. Our mining, processing, smelting and marketing activities allow us to add and distribute value to the stakeholders.

## Value Capturing

**Financial Capital** – We use our own financial resources, derived from operating cash generation, and also from third parties, to make the necessary investments to develop new projects and maintain operational excellence and competitiveness in the mines and smelters. Strategic projects sometimes are financed with funds raised in the capital markets. The production and sale of ore concentrate, by-products, metals and metallurgical alloys generate our revenues and, together with our ability to appropriately operate our assets, generate added value that is distributed among shareholders, employees, suppliers, governments and society.

**Natural Capital** – At the beginning of the chain, our activity depends on the prospecting of mineral resources. To do so, we rationally extract natural resources and seek innovative alternatives to reduce waste generation, atmospheric emissions and impacts on biodiversity, as well as recover areas impacted by our activities.

**Human Capital** – Our Values and Beliefs, our development and compensation policies and our organizational environment are key factors in attracting and retaining highly qualified people. We seek to maintain a safe and healthy working environment and invest so that people develop personally and professionally.

**Manufactured Capital** – Our mines, smelters, administrative buildings, exploration areas and logistic structures enable the generation of value through more efficient processes and equipment. Mining and smelting activities require the use of engineering and technological resources, managed to guarantee the operational stability of the units, maximizing productivity and ensuring and boosting competitiveness.

**Social and Relationship Capital** – Dialogue with the communities in which we operate is essential for the maintenance of the operations and the sustainability of the business and is part of the process for co-creating a legacy in the localities where we have a presence.

**Intellectual Capital** – We stimulate innovation and the development of technologies that create competitive differentials, carried out in partnership with universities, research centers and public institutions.

## Value Creation

**Strategic Guideline:**  
**Growth**



### Mineral exploration

The discovery and development of economically viable mineral resources, as well as the extended life of our mines, are important competitive advantages that add value to the business.

**Strategic Guideline:**  
**Operational Excellence**



### Mining

We carry out mining activities, mainly zinc and copper, with an important percentage of the ore concentrates being sent to our own smelters for metal production. The five mine operations are distinctive for taking responsibility for the management of socio-environmental impacts and relationships with the communities.

### Smelting

We operate three smelters: two in Brazil and one in Peru, each with specific positioning parameters. In addition to metallic zinc, zinc oxide and alloys, the units are configured to make co-products, such as silver concentrate, sulfuric acid and copper sulfate.

### Sales

We sell concentrates, zinc metal and co-products, and invest in the development of products and applications with higher potential for growth in the coming years, identifying new trends and market needs.

## Value Created

**US\$ 2.5 billion**  
net revenue

**US\$ 126 million**  
invested in mineral exploration and project development

**US\$ 108 million**  
in taxes paid

**US\$ 1.3 billion**  
paid to suppliers

**US\$ 10 million**  
invested in communities

**US\$ 95 million**  
for the environment

**128**  
new jobs created

**1,722**  
contracted suppliers

## Shared Value

**Employees** – We create direct and indirect jobs, develop, train and appreciate our employees, ensuring care for their safety and their intellectual and professional growth.

**Investors** – The efficient management of assets and resources, as well as a short-, medium- and long-term strategic vision, allows for creation of value, distribution of dividends and the increase in the company's value.

**Clients** – We manufacture quality products, maintain partnerships with local and global customers in search of new solutions and applications to maintain the perpetuity of the zinc and copper value chain.

**Governments** – We pay taxes to federal, state and municipal governments, with the objective of improving the quality of the services offered to the communities in our activity areas.

**Communities** – We act to co-create a legacy in the localities where we operate. We seek an understanding of these localities through structured actions and continuous relationships, contributing to their development.

**Suppliers** – We hire many different materials, inputs and services companies and seek to train local suppliers, aiding in the creation of indirect jobs in the communities in which we are present.

**Financial Institutions** – Our market capacity and credibility lets us contract financing for investments and initiatives in projects that bring development and value creation to the company and its stakeholders.



## Strategic mandate

Every three years, we implement an established strategy review process called Strategic Dialogue. This is a fundamental step in the discussion cycle about where the company is headed and is an important part of the process to ensure we will move in the direction expected by the shareholders and other stakeholders. Our last review was initiated in December 2017, based on individual and structured interviews with all of the company's executive directors and Board of Directors members to identify both positive aspects as well as improvements and adjustments that should be made.

At the same time, we analyzed the industry scenario, macro trends, new technologies, and the political, economic and social environments of the countries in which we operate. Likewise, we verified our competencies and capacity to execute the strategy, as well as how these aspects have evolved since the previous evaluation.

Based on this analysis, which was coordinated by the Strategic Planning area and supported by the various departments and key people in the organization, we prepared a review of our Strategic Mandate, which was approved in June 2018 by the Board of Directors. It is a document that formalizes our aspiration to be an intelligent and reliable company that generates value for its stakeholders.

### Axes and enablers

We maintained our intention to ensure growth with competitiveness, based on two strategic axes: Operational Growth and Excellence.

A third axis, Market Development, which had been established previously to accelerate our commercial competence, has now become one of the enablers underpinning the growth strategy. This came about because we made significant progress in the face of the previously proposed objectives for this axis, such as regional leadership in the marketing of metals and global positioning, in addition to the development of a global footprint and the pursuit of change that reflected the company's new momentum.

The other enablers are People and Organization, Sustainability, Project Management, Risk Management, Technology and Automation, Supplies and Logistics and Capital Structure.

In August 2018, we ran a Strategy Workshop to present a review of the new Mandate and the challenges it proposed to the organization's entire leadership. Among the challenges addressed were those associated with the trends of the so-called "New Age of Mining": a demand from society and a focus by companies on mining and smelting operations that are safer, more efficient, more sustainable and more intelligent.

The review of the strategy pointed precisely to the need to be prepared to respond quickly and efficiently to possible changes in the scenario, whether in relation to political, economic, environmental, safety or social issues. Some of the points raised during the dialogue are: new mining regulations; organized civil society movements; social licenses for operations, which demand direct and transparent negotiations with communities; the political environment; royalties and taxes; and workforce availability and mining activity profiles.



# Strategic guidelines

## GROWTH

To assure sustainable growth in zinc and copper in the Americas, ensuring value creation with optimal capital allocation through five avenues of growth:

- Extension of the useful mine life
- Brownfield projects
- Greenfield projects
- New area exploration
- New business development

## OPERATIONAL EXCELLENCE

Continuous improvement of competitiveness (maximizing the value of existing operations) through operational stability, higher capacity utilization, continuous cost improvements, productivity and rationalization of the employed capital:

- Operational Stability: Initiatives focused on increasing productivity through volume increases and cost reductions, counting on the support of the enablers (technology, automation & innovation, logistics, people, etc.)
- Installed capacity utilization: maintenance of management practices, automation, reduction of emergency shutdowns and preventive maintenance improvements.
- Cost management improvements:
  - Reduction of specific consumption and variable costs through operational stability
  - Reduction of unit fixed costs through better management of contracts and increase of produced volume
- Productivity and capital rationalization: focus on boosting productivity in both the operations as well as the corporate processes, capital discipline and leadership to reduce/mitigate operational risks

### Enablers

#### People and organization

- Cultivate talents and promote inspiring leadership
- Ensure key critical resources within the organization and their ongoing evaluation and improvement
- Contribute to raising productivity and business competitiveness
- Promote effective governance and organization
- Promote a positive and constructive relationship with important stakeholders

#### Sustainability

- Continuously improve the safety and health culture
- Reduce environmental impacts (emissions, waste, water and energy consumption, etc.) of operations
- Create shared value with society, contributing to the co-creation of a legacy that is relevant to the localities in which we operate

#### Project management

- Ensure development and execution by supporting areas to ensure project returns and minimize the diversion risk
- Monitor and enhance the long-term investment plan

#### Commercial

- Continually positioning Nexa as a strategic partner in domestic markets and enhancing its global business strategy (developing new markets and products aligned with global trends)
- Manage the concentrate sales portfolio, exploring the benefits of smelter-mine integration, continuously improving sales intelligence

#### Risk management

- Identify and manage the main risks (both operational and strategic), reducing and mitigating impacts mainly through preventive systems
- Monitor volatility and discuss actions appropriately

#### Technology, automation and innovation

- Improve operational efficiency and stability through technology and automation solutions
- Seek technologies for greater eco-efficiency
- Allow the use of low-grade and more flexible ores/alternative use of raw materials (promote circular economy)
- Develop an innovation platform focused on technology and automation and for innovative processes. Stimulate an increasingly more intelligent way of thinking and operating.

#### Logistics and supplies

- Generate competitive advantages for operations, processes and projects
- Be a facilitator for a better and more sustainable client-supplier solution
- Be a specialist in the best evaluation between outsourcing and insourcing
- Innovate in processes, tools and information (from and to Nexa)

## Growth Axis

We have a clear growth strategy, focused on zinc and copper mineral exploitation in the Americas, to ensure the creation of long-term value. We direct our investments both to boost annual production capacity and to extend the life of the mines we currently operate and develop new projects. We also look at new zinc and copper business opportunities to facilitate the execution of our projects, either organically or inorganically.

The budget for mineral exploitation basically remained stable in 2018, investing US\$ 83 million in these projects. In addition, during the year we evolved in terms of project management and governance structures, continuing the previous year's review of committees, procedures and management models.

### Greenfield Projects

Our projects are developed in an intelligent manner; that is, lower costs, more agility, minimum deviations from the plan and maximized returns. The following projects are in different stages of FEL (Front-End Loading) feasibility evaluation: Magistral, Shalipayco and Pukaqaqa (Peru), and, in addition to Aripuanã, which is in the construction phase, Bonsucesso and Caçapava do Sul (Brazil). All projects under development have gone forward according to plan, strengthening our portfolio.

### Greenfield projects under development

**Aripuanã** - It is our most advanced project. Project initiation was approved in October by the Board of Directors and in December it received an installation license from the environmental agency of the state of Mato Grosso, Brazil (details on page 26).

**Magistral** - Located in the Ancash region of Peru, this open-pit copper project has a mineral processing unit. In 2018, the soundings for metallurgical samples, bench tests and pre-feasibility studies (FEL2) were started, which are 55% complete. It is estimated that Magistral will produce an annual average of 40 thousand tonnes of copper contained in concentrate, 3 thousand tonnes of molybdenum and 600 thousand ounces of silver (17 tonnes) over the 16 years of its useful life.

**Shalipayco** - The project is located in the Junín region in the central Andes of Peru, an area with underground zinc, lead and silver mines. During the year, a conceptual study was completed and the project in 2019 is entering the pre-feasibility study phase (FEL2). As a result of the study and to maximize the project's internal rate of return and net present value, the plan included additional drilling to reclassify its mineral resources and prepare the engineering concept for a processing plant. As a result, another 10 months were added to the main project timeline.

**Pukaqaqa** - It is located in the Huancavelica region, about 400 kilometers south of Lima (Peru), and includes the development of an open pit copper, molybdenum, silver and gold mine. The pre-feasibility study (FEL2) progressed 22% in 2018 and we are maintaining the goal of identifying possible operational synergies between this project and similar assets in the region.

**Caçapava do Sul** - A polymetallic project involving copper, lead and zinc located in the state of Rio Grande do Sul, about 245 kilometers from the Port of Rio Grande. The resources can be exploited through both open pit mining and underground processes concomitantly. The research program in 2018 was slower due to the redirection of budget funds to priority projects. In 2019, some 13 thousand meters will be sounded in a survey.



## Aripuanã construction begins

Aripuanã, a polymetallic mine located in the state of Mato Grosso, is considered one of the world's ten largest zinc projects. This integrated underground mine's expected production is 2.3 million tonnes of crude ore per year (especially zinc, lead and copper) – with output of 120 thousand tonnes of zinc equivalent. The expected useful life is at least 13 years, considering just the known reserves, with the possibility of extension for another six years.

The expected average annual production of the Aripuanã zinc concentrate is 28% of the volume we purchased externally in 2017, which will contribute to higher integration between mines and smelters.

Aripuanã is fundamental to the evolution of our strategy of continuing to grow our zinc and copper mining and smelting operations in the Americas. Besides contributing to the development of the mineral industry in Mato Grosso, it strengthens our position as one of the world's five largest zinc producers, and the leading producer of the ore in Latin America.

We seek to incorporate the most modern technology and operational excellence practices into the Aripuanã Project, as well as a sustainability vision in all its processes. Some examples are the goal of 100% water reutilization, the construction of a dry tailings deposit and the focus on co-creating a legacy for the community.

### Aripuanã in numbers

Expected equivalent zinc production of 120 thousand tonnes/year, including the average annual production of 66.7 thousand tonnes of zinc (18% of Nexa's annual zinc production in 2017), 23 thousand tonnes of lead, 3.7 thousand tonnes of copper, 1.87 million troy ounces of silver and 13 thousand troy ounces of gold

The processing capacity of the plant is

**6.3** tonnes of ore/day

Planned job generation:

**1,600** employees  
(construction phase),  
750 own employees and  
240 outsourced  
(operational phase)

Lifetime of the mine:

**13 years**  
proved and probable reserves + **6 years** of inferred reserves

Total reserves (probable and proved):

**26.2** million tonnes, of which **3.7%** zinc, **1.4%** lead, **0.2%** copper, **0.3 g/t** gold and **34 g/t** silver

Estimated capital investment for the project:

**US\$ 392** million  
(35% in 2019, 49% in 2020 and 16% in 2021)

Drilling of more than **215 kilometers** in the project area and vicinity for the identification of mineralized deposits



### TECHNOLOGY AND OPERATIONAL EXCELLENCE

- **Dry tailings disposal** - Focusing on the safety and sustainability of neighboring communities, the undertaking was projected from the start so as not use conventional tailings containment structures. A new process was developed involving filtering, drying, handling and disposal of dry tailings in piles protected by layers of geomembranes, reducing risks and environmental impacts.
- **Use of constructed wetlands** - passive treatment of rainwater runoff on ore piles (ROM - Run of mine), sterile waste piles, tailings piles, industrial and administrative areas and mine drainage systems. With this system, we will return the treated water to the receiving bodies in a controlled manner while also treating effluent water from the processing plant. Hence, 100% of the treated water will be recirculated back to the process and there will be no disposal into the environment.
- **High degree of automation** - better safety levels, operational stability, cost savings and increased productivity.

### PROPERTY

62.3%	Nexa Recursos Minerais S.A.
7.7%	Nexa Resources Peru S.A.A.
30%	Mineração Rio Aripuanã Ltda. (a Karmin Exploration Inc. subsidiary)

### TIMETABLE

- **2017** - presentation of the environmental impact study and review of the global minimum cost study
- **April/18** - Obtaining the Preliminary Environmental License
- **Oct/18** - FEL3 completion
- **Dec/18** - Obtaining the Installation License (IL) granted by the Mato Grosso State Environmental Department
- **1st quarter/19** - forecast for signing the main packages such as comminution, flotation and mine equipment, as well as main services (such as EPCM, the company for civil construction and electromechanical assembly and mine development); and start project construction
- **2021** - estimate for startup of operations

### LOGISTICS

The three types of ore concentrate will be brought out in part by truck to Rondonópolis, where they will be transferred to railroad cars and sent to the Port of Santos, for subsequent shipment abroad. The supply of zinc smelters from Juiz de Fora and Três Marias will be by road transportation.

### SOCIAL LEGACY

The Aripuanã Project's Integrated Socio-economic Plan (PIS) was prepared from a socio-economic diagnosis that sought to enhance understanding of the territorial, social, economic and socio-organizational context of the locality where the unit will be built. The plan is aligned with the topics contained in the Sustainable Development Goals (SDGs), as is the concept of sector unification, designed to help achieve shared goals and minimize impacts, promoting positive developmental actions in the region.

In line with the company's social strategy and the challenges identified and prioritized in the PIS, the plan defined five topic groups to facilitate the construction of more creative solutions to fit each reality:

- 1 Health and sanitation actions for the population
- 2 Local manpower and housing
- 3 Migrants, vulnerable publics and public management
- 4 Entrepreneurship and local suppliers
- 5 Indigenous peoples

In addition to the five groups, the topics of Social Participation and Monitoring of Socioeconomic Indicators also took into account cross-cutting themes with all the others, and likewise were discussed. The PIS proposes to operate within each topical group following Nexa's four strategic social performance axes: Local Economic Development; Socio-environmental; Public Management and Social Participation; Childhood and Youth. These guidelines guided the definition of the social programs and projects being developed in Aripuanã.

Some projects were initiated in 2018, such as the program to strengthen the network to protect child and teen rights, as well as the training of community agents to prevent violations of the rights of young people and women. Other programs already under way reinforce the quality of public and technical education in Aripuanã, supporting both the possibility of local hiring and the improvement of education in the region. In 2019, we will continue the projects that were started in previous years and expand our social activities pursuant to the PIS.

In addition, we have established that all our suppliers for social projects must commit to conduct their activities in accordance with our social responsibility requirements. These include commitments to human rights, support for local development, promotion of safety and a healthy workplace, compliance with the Social Golden Rules and the 15 Community Relationship Protocol rules.

# Aripuanã Plant

## 8. Local Development

- VIA - Support for the Children and Adolescents Law
- Project's Integrated Socio-economic Plan (PIS)
- Job generation

## 4. Processing

Stages:

- Crushing and grinding:** Its purpose is to adjust the granulometry of the material
- Flotation:** Separation of different types of concentrates and tailings
- Thickening:** All materials are thickened and then filtered, separately

## 5. Mineral extraction (zinc, lead and copper)

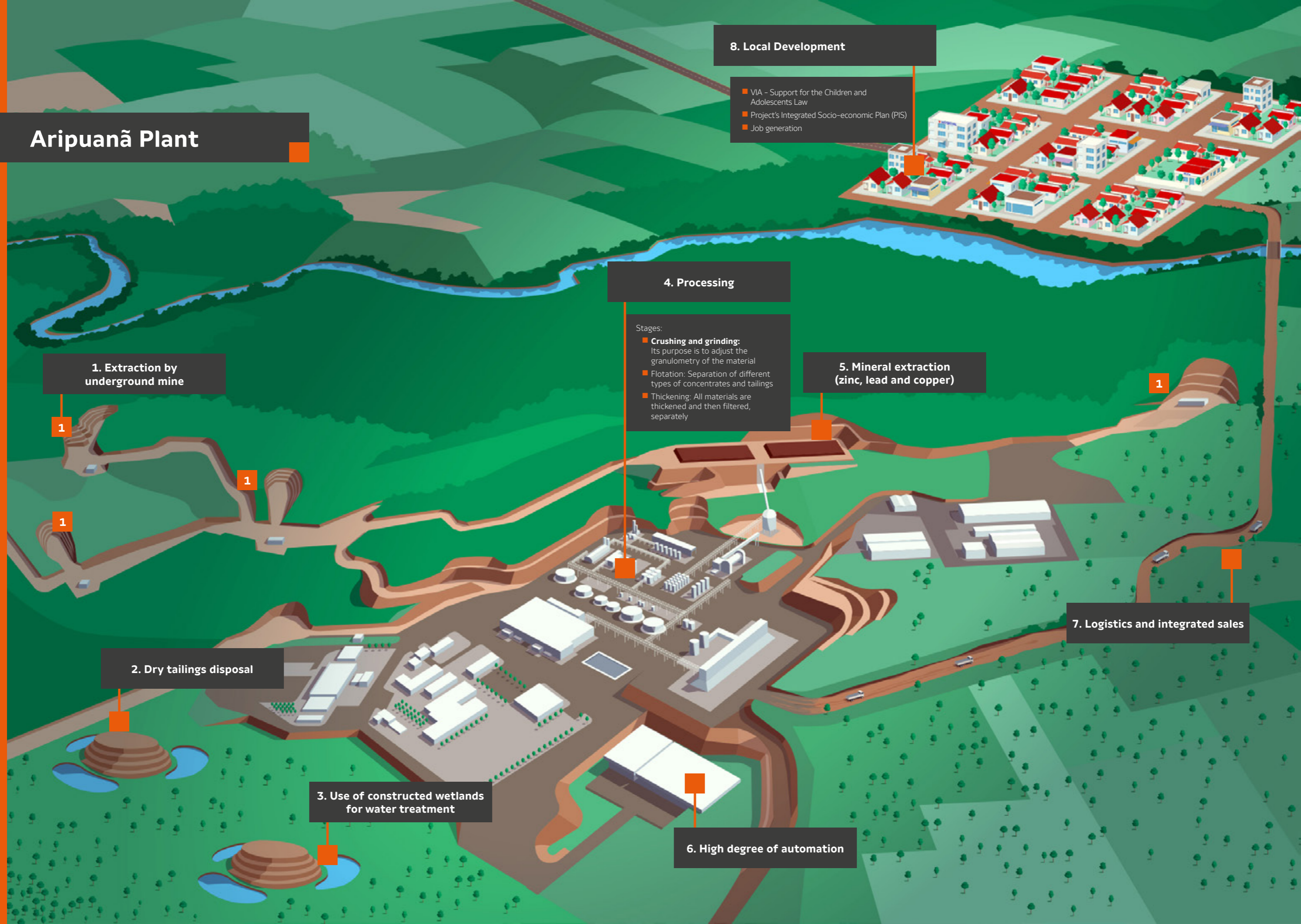
## 1. Extraction by underground mine

## 2. Dry tailings disposal

## 3. Use of constructed wetlands for water treatment

## 6. High degree of automation

## 7. Logistics and integrated sales





## Brownfield Projects

We permanently strive to develop a pipeline of brownfield projects aligned with the full potential of our assets, seeking to extend the capacity and lifetimes of our mines and taking advantage of favorable market conditions. Our goal is to ensure a minimum of 12 years of reserve-based life by defining new exploitation targets.

In 2018, all our operations received funding, planned and phased according to the maturity level of each unit. Our most significant projects in the period were:

### Vazante

We have a ten-year project, begun in 2013 and with an estimated total investment of US\$ 184.3 million, which seeks to extend the useful life of the mine. Initially, the goal was to achieve a five-year gain, from 2022 to 2027. Based on resources and reserves, however, we have surpassed this goal and we have reached 2034, that is, another 12 years. With the deepening of the mine, the expectation is to maintain its production at 140 thousand tonnes of zinc per year. As part of this project, the pumping station and the excavation of the well were delivered in 2018, in addition to construction of the floodgate. Production at the deepest levels represented 73% of the contained zinc production of Vazante during the year.

In order to enable the expected surge in the unit's production, which should reach maximum capacity in 2020, we increased the hours worked in the unit by approximately 30%, including the addition of a fourth work shift.

### Cerro Lindo

We drilled a total of 57 kilometers, starting activities in the region of Orcocobre, north of the Topara River. We have three drill rigs already in operation and we plan to drill more than 20 kilometers on a 570-hectare area in the region by the end of 2019. In 2018, mine development increased by 33%, which makes it possible to continue boosting its output.

### Pasco Complex

We move forward with the integration between the underground operations at the Atacocha and El Porvenir mines in 2018, forming the Pasco mining complex. The objectives were to maximize investments, achieve cost savings and reduce the environmental footprint through the synergies shared by the two mines due to their proximity and operational similarities. The project it is being developed in four stages: administrative integration of the mines (2014); merging of the tailings disposal systems (2015), construction of a new power transmission line that supplies both mines (2016) and strategic evaluation of the integration of the underground operations and facilities (2018).

After the integration process, the mines will use just a single lifting system. This will bring benefits to Atacocha such

as lower operating costs in transporting ore from lower levels, in addition to avoiding larger capital investments.

Also in 2018, 11 kilometers of drilling were completed along the integration area between El Porvenir and Atacocha, with a focus on identifying new ore bodies, and 16 kilometers of drilling for conversion and updating of mineral resources.

Through the investment to develop the two underground mines, Pasco returned to growth levels higher than those recorded in 2017. Atacocha raised the volume of materials from the underground mines by approximately 300%, due to the high ore content, which led to a 7% increase in Cerro Pasco's overall production.

### Morro Agudo/ Bonsucesso Project

The project, which belongs to the Morro Agudo complex, aims at extending the useful life of this complex (Ambrosia Trend) by at least 11 years. In 2018, we initiated a pre-feasibility study (FEL2) regarding converting more mineral resources (indicated and measured) with the goal of increasing the project's mineral reserves. In addition, in November 2018, we filed an application for Preliminary and Installation Licenses for underground mining activities with the appropriate authorities.

We expect to begin construction in 2020, after the approval of the necessary environmental licenses, with the start-up of the mine scheduled for 2021.

## Regional projects

We develop projects from the initial exploration phase through to the definition of funding, designed to maintain a live and optimized portfolio of organic and inorganic options, improving and expanding the project pipeline. Within these assumptions, we currently have ten zinc, three zinc and copper and six copper projects under study – located in Peru, Brazil and Namibia.

Among the projects still being prospected, we are finishing up supplemental work to extend the mineral resources in Hilarión (Ancash region, 230 kilometers from Lima, Peru), for which we are using directional survey technology for the first time. According to the studies conducted to date, this is expected to become Nexa's third largest zinc mine.

In November 2018, we resumed the drill program at the Florida Canyon project, which consists of 16 contiguous mining concessions covering approximately 12,600 hectares in the Amazon region of Peru. Our plan for 2019 calls for conducting another 14,700 meters of soundings.

In 2018, we also recorded a number of positive results regarding the definition of copper and gold mineralization in the Goiás Magmatic Arc Project. Furthermore, we progressed mapping areas in the Tapajós region, which is the new frontier for mineral exploration in Brazil, giving us an advantageous position over most of our competitors. In Namibia, we expanded exploration of areas that present high zinc and copper potential.

## Resources and reserves

We make an annual declaration of our proven and probable mineral resources and reserves, pursuant to statement of Resources and Reserves follows the Definition Standards CIM 2014 (Definition Standards for Mineral Resources and Mineral Reserves) and incorporated by reference in National Instrument 43-101 (NI 43-101) covering all mines and projects. The operating units Cerro Lindo, El Porvenir and Vazante also have mineral reserves declared pursuant to the SEC (Securities and Exchange Commission) Industrial Guide 07 (IG07) of the United States. These are available in the annual report Nexa 20-F, which can be accessed at <https://ir.nexaresources.com/regulatoryfilings>. As at NI 43-101 of the CIM (Canadian Institute of Metallurgy and Petroleum), at December 31, 2018, the total metal contained in our reserves were 4,449 thousand tonnes of zinc, 440.2 thousand tonnes of copper, 788.7 thousand tonnes of lead, 117,211 ounces of silver and 294.9 thousand ounces of gold, representing an increase of 4% of reserve total.

### Resources and reserves<sup>3</sup>

Class <sup>4</sup>	Total (million t)	Zinc (%)	Copper (%)	Silver (g/t)	Lead (%)	Gold (g/t)	Zinc (thousand t)	Copper (thousand t)	Silver (thousand oz)	Lead (thousand t)	Gold (thousand oz)
<b>Reserves</b>											
Proved	70.40	3.58	0.40	30.0	0.60	0.06	2,522.2	282.2	67,941	424.1	136.0
Probable	50.03	3.85	0.32	30.6	0.73	0.10	1,926.8	158.0	49,270	364.6	158.6
<b>Total</b>	<b>120.43</b>	<b>3.69</b>	<b>0.37</b>	<b>30.3</b>	<b>0.65</b>	<b>0.08</b>	<b>4,449.0</b>	<b>440.2</b>	<b>117,211</b>	<b>788.7</b>	<b>294.6</b>
<b>Resources</b>											
Measured	240.02	0.81	0.40	7.4	0.18	0.01	1,937.2	961.4	57,470	434.0	40.5
Indicated	402.33	0.72	0.36	6.0	0.16	0.01	2,886.3	1,433.0	77,988	640.4	77.0
<b>Total</b>	<b>642.35</b>	<b>0.75</b>	<b>0.37</b>	<b>6.6</b>	<b>0.17</b>	<b>0.01</b>	<b>4,823.5</b>	<b>2,394.4</b>	<b>135,458</b>	<b>1,074.4</b>	<b>117.5</b>
Inferred	242.06	2.53	0.24	19.8	0.54	0.09	6,129.1	571.5	154,178	1,314.0	703.6

Observation: The estimate of reserves and mineral resources involves assumptions about future commodity prices and technical mining issues. The presented Statement of Resources and Reserves follows the Definition Standards CIM 2014 (Definition Standards for Mineral Resources and Mineral Reserves).

<sup>3</sup> The amounts shown in this table have not been adjusted to reflect our proprietary interests. The information presented in this table includes 100% of the estimates of reserves and mineral resources of our consolidated subsidiaries and our joint ventures, calculated on the basis of NI 43-101 of the CIM definitions standards CIM 2014, incorporated in NI 43-101, some of which are not wholly owned, as set forth in this share column available in the 6-K mining report that can be accessed at <https://ir.nexaresources.com/regulatoryfilings>.

<sup>4</sup> Mineral resources are reported exclusive from mineral reserves and have the effective dates described in the 6-K mining report.



## Operational Excellence Axis

We seek to constantly improve our competitiveness vis à vis other producers and maintain the security of our assets in order to cope with possible downward price cycles. We do this by maximizing the value of existing operations through a series of actions that are aimed at:

- Boosting the utilization capacity
- Operational stability
- Continuous cost improvements
- Capital rationalization

Likewise, we invest in technology, innovation and automation to improve our productivity and competitiveness, broaden our safety culture and support key sustainability goals, such as increased water recycling and reduced CO2 emissions and waste generation. SDG 9.4

Through the ongoing actions taken, we were able to achieve our operational excellence targets from 2025 to 2023.

### Mining

One of the examples of investments in Mining operational excellence is the construction of a new ramp linking the surface to the Pasco Complex's (Atacocha and El Porvenir) mines, which reduces the distance and the cost of transportation of manpower and ores. An underground electric loader is also being tested to operate in deep and remote areas, enabling more efficient and productive work at the site. Additionally, in 2018 we adopted a more productive

ore recovery method (sublevel stoping). The set of initiatives will raise the mine's productivity as of 2019.

In Vazante, the emphasis has been on the application of technology recently adopted by the mining industry, known as ore sorting (*more information in Innovation and Technology*). In the unit there was also 70% progress in the dry stacking tailings project, which consists of the installation of a new filtering, drying, handling process and disposal of dry tailings. The solution will replace dam-based conventional waste disposal methods.

In Cerro Lindo, the implementation of the first phase of digital access control was finalized. The second phase will begin in 2019, with greater control and details regarding the circulation of people in the area. In the year, the swap out of trucks from 35 to 50 tons was consolidated, representing transportation availability above the mine's current production capacity. In the second half of 2018, the development of the mine increased by 30%, with better results, the opening of new access areas and higher productivity contributing to the stabilization of local production.

We also are highlighting the improvement of the geo-metallurgy process, as a result of the concern with the predictability and operational stability of the mines. The project involves the taking of samples, complete mineralogical characterization of mines, definition of geometallurgical fields, flotation tests and recovery models that provide a detailed knowledge of the ore, year-by-year, guaranteeing time to anticipate, identify and solve problems present in our operational areas.

Other important projects carried out in 2018:

- Construction of the new waste disposal deposit (Botadero Pahuaypita) to permit continued operations at Cerro Lindo, which is expected to start operating in the first quarter of 2019. The desalination plant's seawater pipeline also was replaced, at an investment of US\$ 11.8 million, to provide the mine with a reliable supply of water from the coast.
- Improvements were made in the management of the Pasco Complex's assets, increasing reliability, availability and yield. Level A critical assets were identified within the ten critical assets of the complex, which were prioritized in 2018.
- Expansion of Cava San Gerardo in Atacocha, confirmed after updating the model of geological resources and reserves. The new pit has reserves on the order of 6 million tonnes of ROM and an estimated useful life of 6 years. We are in the second phase of the project, finishing the geomechanical studies and licensing process, with the beginning of the excavations scheduled for the second half of 2019.
- Completion of a total of 5.5 kilometers of drilling in Morro Agudo, mainly for identification and detailing of new ore bodies. In addition, 5.2 kilometers of drilling has been completed focusing on the conversion and updating of mineral resources.
- Implementation of the remote detonation process in Morro Agudo, leading to a production increase of around 10%, while also improving the safety of the workers, who are no longer directly exposed to the detonations.

Implementation of the remote detonation process in Morro Agudo, leading to a production increase of around **10%**

### Smelting

Throughout 2018, the following operational efficiency projects were highlights:

**Jarosite Project in Cajamarquilla** - Industrial-scale implementation of the conversion process of the Goethite (an iron oxide mineral) production to the Jarosite (iron sulfate), boosting the zinc extraction yield from 94% to 97% and increasing nominal capacity from 330 thousand to 340 thousand tonnes/year. Investments in the project, which is expected to be completed in the third quarter of 2019, are estimated at US\$ 45 million.

**Energy Matrix in Cajamarquilla** - Structuring of Cajamarquilla's energy matrix project, in the implementation phase. This project aims to replace with natural gas all liquid fuels (diesel oil, heavy oil from auxiliary boilers, heating the unit and the roaster during shutdowns), significantly reducing greenhouse gas emissions and fuel costs.

**Biomass Boiler in Três Marias** - With a more efficient operation than had been projected, the replacement of boilers operated with petroleum-derived oil to a biomass boiler, begun in 2017, resulted in a reduction of 30% in greenhouse gas emissions and 35% in steam production costs.

**Autoclave Dehalogenation in Juiz de Fora** - The removal of impurities (Waelz oxide, fluorine and chlorine halides) from steel industry waste showed a higher than expected yield, proving the efficacy of the process.

**Sale of Waelz Aggregates in Juiz de Fora** - Structured and signed contract for the sale of slag produced in the Waelz Oven (approximately 20 thousand t/month), for the production of Sinter and Iron Ore. In the approval stage for the Licensing Operation, with startup expected in the second half of 2019.



## Enablers

### Commercial GRI 102-6

As one of the enablers of Nexa's strategy, the Commercial area is focused on being increasingly market-oriented and developing a global presence. Faced with a scenario of an international price downturn and political and economic instability in Latin America, this positioning proved to be correct.

In line with our goal of continuously strengthening our homemarket shares (Brazil and Latin American countries), we have expanded our participation in global markets through our commercial offices in Luxembourg and Houston. We have bolstered our presence in Europe, raising sales by 20% in the region, and also in Africa, with a 14% increase over the past year.

We also focused our efforts on better understanding the Asian market, which accounts for two-thirds of the world's zinc consumption. Our sales grew by 8% in the region and we conducted our first transactions with Vietnam and Russia, surpassing volume expectations.

We are working toward the global consolidation of the Nexa brand, participating in the segment's main national and international events as exhibitors and/or presenting market and technical lectures about our products and applications. We were present for the first time as exhibitors at one of the most important galvanization events in the segment and the main one for the zinc market, Intergalva 2018, held in Berlin. We also participated in an event of equivalent importance in Latin America: Latingalva Peru 2018.

### Market differentiation

In recent years, our business strategy has focused on direct interaction with end customers, strengthening the presence of the Nexa brand, deepening our knowledge of the global zinc market and, above all, adding value to our sales. We seek to differentiate ourselves from competitors by offering a portfolio of products that goes beyond 25-kilo slabs (the standard for the commodity priced at the LME) and adding services that develop and retain the market.

To this end, throughout 2018, we focused on the standardization of the jumbos produced in all our units, guaranteeing the quality of the product and, with the greater flexibility between plants, reducing service deadlines. We have also developed the T-Jumbo to meet the demand of a large customer in South Africa, also opening up the market for attracting new customers in Europe.

Aligned with the strategy of meeting the specific needs of customers, we have expanded our production of customized alloys. As an example, we produce a zinc-aluminum-magnesium alloy, already widely used in the European market, now also used in Brazil for the production of galvanized wire. In addition, we approved a project for pelletized zinc oxide in Três Marias, a format that confers greater fluidity to the product, optimizing our clients' production.

To ensure improved proximity and exchanges with the market, we organize workshops and technical and market lectures to disseminate good zinc process practices and innovative applications, highlighting the enormous potential that exists for developing new demands. In addition, every two years we conduct customer satisfaction surveys. The latter, applied in 2017, achieved higher satisfaction results than in 2015. Nevertheless, in 2018 we put into practice a plan containing 29 actions to address the issues that emerged in the previous survey, reinforcing our commitment to continuous improvement of our services.

### Logistics

We seek to offer customers distinctive and customized services, quickly responding to mitigate impacts in moments when there are service disruptions. One such example was during the truck drivers' strike in Brazil in May 2018. We were able to speedily review the delivery alternatives in order to eliminate or minimize flow interruptions that affected the logistics to much of the industry.

We increasingly are investing in multimodal operations, seeking to improve the delivery reliability rate and service flexibility. In order to guarantee greater logistical control, we are evaluating insourcing the fleet for some operations, including at Aripuanã, a project that is in the execution phase in 2019.

In 2018, designed to integrate, simplify and streamline our processes, in addition to guaranteeing better safety and cost reductions, we set into motion a plan to complete the implementation of new Transport Management System (TMS) tools for all logistics operations in 2019, from raw materials through to the delivery of the products to customers. In addition, we started the process of certification as an Authorized Economic Operator (AEO) for Brazil, a certificate Cajamarquilla unit has had since 2015. In 2019, we will begin studies to extend the AEO to the other Peruvian units.

And demonstrating our commitment to safety, we recorded a reduction of 50% in accidents in the logistics area, resulting in a 59% lower internal lost time accident frequency rate. . SDG 3.6

Reduction of  
**50%**  
in accidents in the  
logistics area



## Sustainability

All our activities follow strict sustainability guidelines as expressed in our Sustainability Master Plan, prepared in 2018 as a result of the review and validation of the material topics that make up our strategic plan. We want to be a sustainability benchmark, co-creating a significant legacy to society based on a constructive relationship with our stakeholders.

During 2018, we strengthened the guidelines and initiatives that will govern the development of good sustainability practices throughout the company in the coming years, based on the material topics to be addressed, with goals and deadlines: Water, Waste, Emissions and Energy, Local Development, People (Diversity), Safety and Health, Human Rights (suppliers) and Decommissioning. The material themes are monitored over the course of the year, with the initiatives and results that have been introduced or met reported annually in this document.

For the seventh consecutive year, our Nexa Resources Peru and Nexa Resources Cajamarquilla units received the “Socially Responsible company” seal of approval in recognition of our organizational policies and practices. The prize is awarded by the Peru 2021 organization and the Mexican Center for Philanthropy (Cemefi). The 2018 assessment was based on three key areas: Organizational Culture, Environmental Development and Risk and Impact Management. The award seeks to strengthen the importance of corporate social responsibility in the culture of organizations.

### Sustainability Principles

- 1 To be recognized by society as a socially and environmentally responsible company.
- 2 To have sustainability as a strategy, guiding governance, management, education, decisions and investments – creating value.
- 3 To consistently deliver good economic, social and environmental results, seeking operational efficiency and reliability according to world-class standards.
- 4 To be recognized as a company that attracts, develops and retains talent to create value and build a just and inclusive society.
- 5 Commitment to the well-being, health and safety of our employees, clients and partners.
- 6 Contribute to the development of the communities in which we operate.
- 7 Encourage cooperation and participation of all employees and stakeholders in the construction of partnerships and joint efforts, aiming to generate mutual value.

research and development  
investments totaled

US\$ 9.2 million

### External initiatives GRI 102-12

Our commitment to sustainable development is also expressed in our voluntary adherence to a number of initiatives undertaken with national and international entities. Among them are:

**Global Compact** - Since 2017, we have been a signatory of this United Nations Initiative, which aims to mobilize the business community around the world to adopt ten principles that represent fundamental values of human rights, labor relations, the environment and the fight against corruption.

**Sustainable Development Goals** - Also in 2017, we signed a commitment to the Sustainable Development Goals (SDGs), a global agenda comprising 17 goals and 169 targets to be met by 2030, adopted during the United Nations Summit on Sustainable Development in September 2015. The agenda includes measures to eradicate poverty, food security, agriculture, health, education, gender equality, reduction in inequalities, energy, water and sanitation, sustainable production and consumption patterns, climate change, sustainable cities, protection and sustainable use of oceans and terrestrial ecosystems, including economic growth, infrastructure and industrialization, among others. This report indicates the relationship between the SDGs with our material topics and long-term goals.



## Technology, automation and innovation

We constantly strive to innovate and connect with the world and the trends. We use technology as an enabler of the strategic growth axes and operational excellence, making our operations safer, minimizing waste and optimizing production through intelligence. The commitment in this field was recognized by *Valor Inovação Brasil*, which highlighted us as one of the three most innovative companies in the Mining, Smelting and Steel Industry category.

Our research and development investments totaled US\$ 9.2 million in 2018, surpassing the US\$ 8.5 million invested in the previous year. All innovation projects are developed using funding from the Finep Financiadora de Estudos e Projetos fund, whereas some are executed in partnership with other institutions, such as the *Empresa Brasileira de Pesquisa e Inovação Industrial* (Embrapii), where we had six contracts completed and 14 that were still active at the end of the year.

Innovative technologies are particularly important to extend the recovery of metals, including ore sorting, which consists of the use of equipment with sensors that make it possible to separate large sterile volumes in dry processes. The goal is to raise the useful lifetime and ensure the perpetuity and sustainability of our mines, based on the viability of marginal zinc content resources (see details in the ore sorting on page 40).

A project to recover barite as a zinc mining waste by-product is under development in Peru. Pilot-scale laboratory tests have resulted in the production of barite with high purity (above 95%) and higher density than obtained from the natural mineral. Barite is mainly used in oil, oil and gas drilling, for paint and coatings, medicines and by rubber and plastics

producers. The next step is the development of a project to build a pilot plant capable of obtaining 100 tonnes of barite per day.

Also in 2018, we performed tests with fuel additive of the company Tecfica in mobile equipments of the fleet of El Porvenir, which resulted in a 7% reduction of diesel consumption. In 2019 it will be replicated to the units of Nexa Peru with the aim of reducing diesel consumption and, consequently, reduction of GHG emissions.

### Recovery

We have also have been developing technologies for recovery of zinc from tailings in Vazante and Três Marias. By reprocessing waste containing important metals, we were able to increase zinc ingress and recirculation in the units, improving both the financial margin as well as the useful lifetimes of the current mines. In Vazante, for example, the technology will make it possible to increase the useful life of the mine by four years. This technology should also be applied in Peru by 2019.

### Ore sorting

Among the projects we consider the most promising in 2018 are those based on ore sorting technology. Widely used in other industries, such as food and diamonds, technology was recently introduced into the field of mining.

The ore sorting process is based on dry ore/sterile separation with significantly coarser grades (8 mm to 200 mm) when compared to conventional mineral concentration (0.1 mm to 1 mm - separation magnetic, flotation, etc.), which are usually performed with fine and wet granulometry, thus avoiding the intensive use of water for mass transport.

The ore sorter operating mechanism involves the use of sensors that identify different properties of the minerals of interest and of gangue. As ore passes through the belt, the sorter's sensors detect and transmit information to high pressure air vents located at the end of the equipment just after the end of the belt. These air vents are extremely accurate and blow out the ore/sterile that has been identified and selected by the sensor. The system contributes to more economical and efficient solutions in the recovery of materials.

In addition to ore sorting and zinc recovery projects, we have a Cut Off reduction project in Vazante, which will allow a reduction of up to one percentage point of the current 4% of zinc through new mineral processing technologies and reduction of processing costs (by means of ore sorting and new flotation reagents). The reduction of Cut Off makes it possible to recover metal, previously unprocessable, to increase the life of the mine.

Projects from previous years have advanced, such as the biomass boiler in Três Marias, which reduced greenhouse gas emissions by 30% and the de-hydrogenation of Waelz oxide by autoclaving and the transformation of Waelz furnace slag into an aggregate for the cement industry in Juiz de Fora (*see more information about these projects in Operational Excellence*).

We performed bench scale and pilot trials and the studies evolved rapidly, which allowed the installation of an ore sorting plant in Vazante, for tests with ore from Vazante, Morro Agudo and Ambrósia Norte.

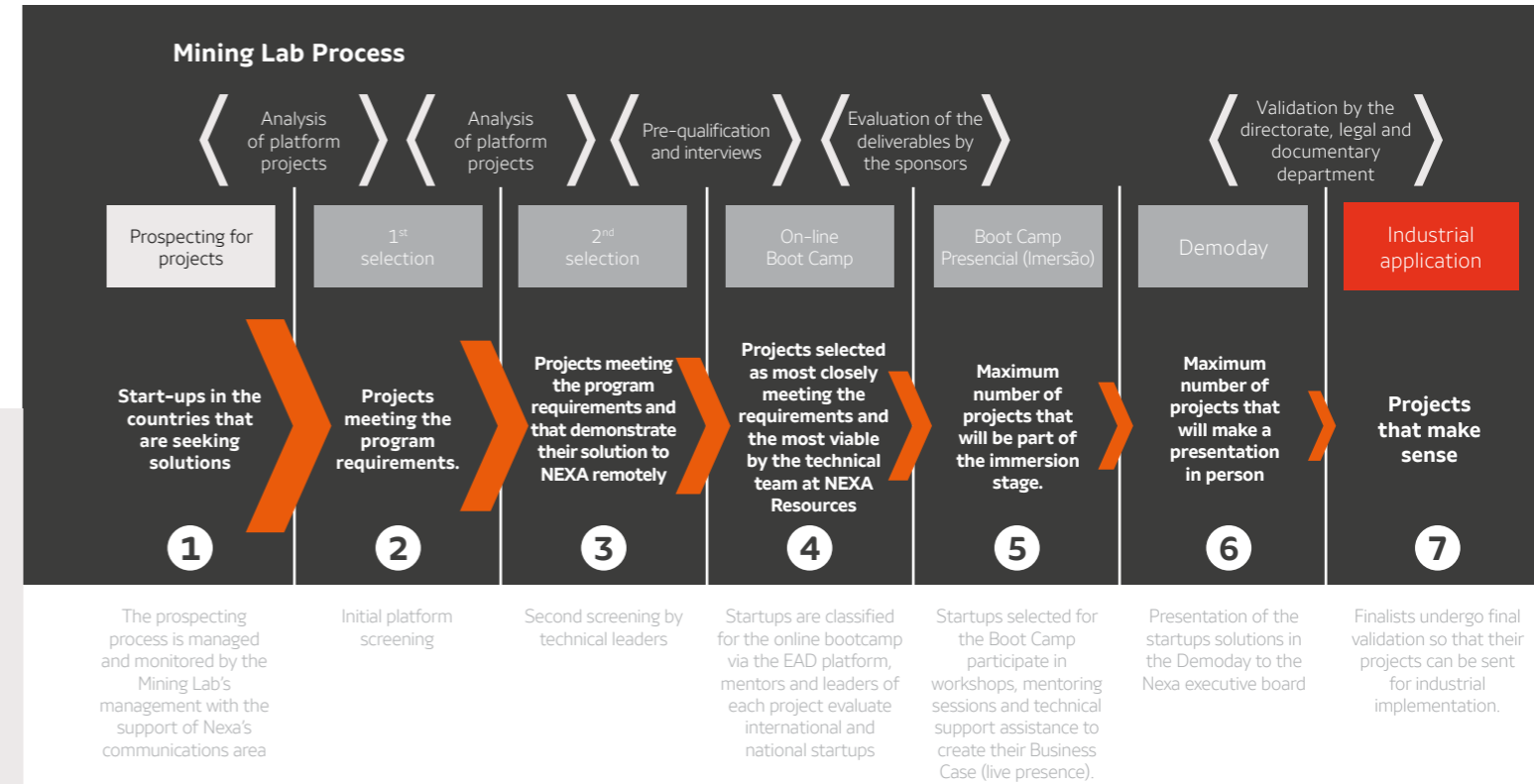
The technology is also being tried in Peru. In order to take advantage of the medium- and low- metallic grade minerals from the exploitation areas, the preliminary tests at Atacocha and El Porvenir demonstrate an average removal of 50% of sterile ore with a possible 1.5 average concentration ratio. The operations are scheduled to start in September 2019.



### Mining Lab

In 2018, we organized the second edition of the Mining Lab, with 291 registered projects and 20 selected startups. A week before the chosen startups presented their projects in a live setting, the candidates were monitored by technical and managerial mentors. The entrepreneurs formatted the value proposition of each project to present to the judges, who evaluated criteria such as viability, strategic alignment, technology, solution and team.

The judges, made up of Nexa's directors and general managers from several areas, chose nine startups, which will receive financial investments to develop their projects, weekly mentoring for a year, financial, legal and marketing management qualification, as well as access to facilities and the technical information from the Nexa units.



### Pioneering

Introduced in 2016, Mining Lab is a pioneering industry program aimed at linking the world of mining and smelting to B2B startups and to change the mindset of the mining sector, making it increasingly intelligent. Besides opening doors for the development of new opportunities applied to the business, it guarantees other competitive advantages, as we gain speed in research development along with reducing innovation investment costs.

The first edition of the initiative was only for Brazilian startups presenting renewable energy and nanotechnology solutions. The second cycle was open to representatives from Brazil, Canada, Peru, Chile and the United States, and offered funding amounting to US\$ 2.4 million in technology initiatives in the fields of automation, Internet of Things (IoT)/IT, and mineral concentration. SDG 7.A

Besides cost reductions, the projects also provide gains in environmental and social issues such as lower atmospheric emissions through increased energy efficiencies and renewable energy projects, and promoting the generation of income in the regions with subsequent benefits for communities in the vicinity of our operations.

Although it is coordinated by the Innovation and Technology department, the startup initiative will be applied in a number of other company areas and in as social projects. Starting in 2019, Mining Lab will be a continuous program with challenges that will be introduced into the platform throughout the year.

## Selected projects in Mining Lab 2 SDG 7.A

Area	Selected Startup	Proposed solution
Selected Startup	Rockmass (Canadá)	Mobile technology that automatically collects, identifies and processes geotechnical measurements. Through a tablet, any operator can access the technology at a safe distance from the mining fronts.
	4HelixLabs (Peru)	Robotic system for autonomous surveying and underground mining inspection that increases efficiency and safety under extreme conditions.
Information Technology and Internet of Things	Geoinnovación (Peru)	Use of artificial intelligence to identify the best conditions in manipulable parameters and guidance to operators in real time.
	ShiftAI (Brazil)	Use of artificial intelligence and big data to improve the predictability of metal price quotes on the London Stock Exchange.
Circular economy	Aquova (Canada)	New electrochemical treatment system that improves the efficiency and effectiveness of sulfate and magnesium treatment.
	Biopolynet (Canada)	New product that makes it possible to capture different types of solids in tailings thickening systems.
	Knowledge (Peru)	Process for the use of waste containing zinc and other heavy metals.
Mineral Concentration	E3min (Peru)	Optimization of the crushing process, innovative for using vibration techniques with gain stages, increase in up to 30% of production and recovery of metals and reductions of about 10% in consumption and energy.
Logistics	Authenticiti (United States)	Integration and standardization of processes and data, with an information security guarantee.

## Projects under development SDG 7.A

Of the five projects selected in the first year of the Mining Lab, three are in the developmental phase of an industrial pilot and soon should be implemented. They contemplate solutions in renewable energies, which should represent significant energy cost reductions. Through actions in the Três Marias system, we are seeking to produce zinc with one of the lowest GHG emissions rate in the world. Projects featuring challenges in nanotechnology selected in 2017 did not present applicable results on an industrial scale.

**Biodiesel** – Bchem Solutions technology turns leftover vegetable oil, collected in restaurants in Minas Gerais, into a biodiesel product with high combustion power to be used as fuel for mining equipment, presenting low production of waste upon burning. This averts this cooking oil from being disposed of in the environment, polluting rivers and the soil while also replacing the fossil fuel traditionally used in the mining industry. In 2018, the Bchem pilot plant was put into operation and the biodiesel produced (8 thousand liters) in the period was already used to run the engines of the Vazante unit's truck and van fleet.

**Gas from organic waste** – ZEG Environmental's flash dissociation system transforms any kind of organic waste into gas, and this into steam, which can be used in industrial processes, reducing the consumption of fossil fuels (coke and oil), which are more expensive and polluting. The equipment to be installed in Juiz de Fora is expected to be put into production in 2020, using eucalyptus and urban waste as inputs.

**Biomass Fuel** – A project from Bioware Desenvolvimento de Tecnologia de Energia that transforms organic materials (biomass) into fuel oil for industrial use, which can be used in furnaces that produce zinc oxide. The project is in the pilot phase and uses eucalyptus as its raw material. In addition to reducing the emission of greenhouse gases, the project will generate income in the region through the purchase of eucalyptus logs. The challenge for 2019 is to standardize the bio-oil produced and monitor furnace performance.

## Automation

In 2018, we implemented the Automation and Information Master Plan (PDAI) for the digital transformation of both current production and new units. Projects within each area of the PDAI — Greenfields, Mina (Digital Mining®), Processing and Smelting — have progressed as planned. In 2018, the PDAI was implemented in Atacocha and El Porvenir, and in projects with operations scheduled to begin in 2019. The following table presents the results:

## Automation and waste master plan SDG 7.A, 8.2

Area	Project	Results in 2018
Greenfields	Aripuanã	Operations will begin with an adequate level of automation, having captured gains in Net Present Value (NPV) of more than US\$ 10 million for the project. Includes systems already tested in the other units that add gains in safety, production and stability.
Digital Mining	Remote detonation	Implemented in Morro Agudo, a project in conjunction with micro-tracking monitoring offers an NPV of US\$ 3.5 million.
	Ventilation on demand (VoD)	Implemented in Vazante phase 1 (surface), with reduction of 18% of energy consumption of the main ventilators. Pilot for full VoD indicates productivity gains of 1% and energy reduction of up to 50%.
	Dispatch system	Being installed in the Vazante unit. System reduces queues and unproductive hours, boosting production by 5 to 10%. Scheduled deployment also in Cerro Lindo, test version, in 2019. NPV of US\$ 9 million.
	System for prevention and collision between people and machines	Scheduled for deployment in 2019 and included in the Aripuanã project to avoid collisions between equipment and people.
Processing	Containment structure alarm system	Implemented in Vazante and Morro Agudo and expected to expand to the smelter units in 2019.
	Automation and control of the comminution and flotation at El Porvenir and Cerro Lindo	Project start-up: advanced process control application, which uses image analysis and controls in real-time operations automatically to achieve quality, maximize production and reduce input costs.
	Morro Agudo reagent automation	Initiated intelligent system implementation for control and dosing of the flotation unit's reagents, reducing input consumption by 2%, mainly used in the processing system.
Smelting	Advanced process control	A pilot was carried out in Juiz de Fora through the Outotec System, with an estimated gain of 2% in the process feed. Three months of tests will be conducted in Três Marias to validate the concept and the software.
	Control Network Management	A test was carried out in Juiz de Fora with a process control network management platform, presenting a potential gain through the reduction of 260 tonnes of zinc powder. The platform will be implemented in Três Marias, Vazante and Cerro Lindo in 2019.
	Hydro Cajamarquilla Increased Stability	Solution flow stabilization project in hydrometallurgy and coordination of control networks initiated, operating within the constant flow philosophy and obeying the operational restrictions for tank levels. Thus, the master control system will optimize the consumption of zinc powder.
	Increase Stability Cajamarquilla Ustulador Line 1	Initiated instrumentation project and intelligent software to control and optimize the feed and other important process variables, gaining 1% in productivity.
	Flotação Ag Optimization	Project start-up: advanced process control application, which uses image analysis and controls in real-time operations automatically to achieve quality, maximize production and reduce input costs.



### Information Technology

As part of the move to give Information Technology a more strategic and cross-cutting role in the organization, implementation of the Nexa Digital Transformation project continued through an integrated, controlled operational plan to support the decision-making processes in a number of different areas, ensuring complete data security. Furthermore, we are preparing to advance both the industrial environment with the PDAI - Industry 4.0 automation and information Master Plan, and the corporate environment, with the Digital Workplace. To this end, we focused on three areas over the year:

**Data and Intelligence Management** - In 2018, we developed the Enterprise Data Management (EDM) project to implement a global and unique database that will give more agility and allow access to information, ease of reporting and the possibility of using analytics tools for artificial intelligence. All areas will be involved in the EDM Project, scheduled to finalize in 2021.

**Information Security** - We implemented a Cybersecurity Program with several cutting edge initiatives to mitigate threats and vulnerabilities of systems and effectively meet the various audits inherent in a public company and thus increase our information security level of maturity.

**Technological Architecture** - We concluded the evaluation of the IT infrastructure and its applications to identify the best solutions in the market and to provide fully evolved systems, with cost reductions, faster delivery of solutions and mitigation of errors and risks arising from isolated decisions.

**User Experience** - Created in 2017, the User Experience program seeks to bring incremental innovations to the corporate environment from solutions already available in the market. In 2018, we investigated together with the business units over 60 ideas and finally selected the four most advanced ones in terms of guaranteed results for the operations:

#### User experience solutions

Unit	Selected startup	Proposed solution
Vazante	MVISIA	Use of robots gives greater assertiveness for monitoring loads and sending them to the correct ore pile.
Vazante	3D Criar	Reduced purchasing and inventory costs using 3D printing for spare parts.
Três Marias	MRVIT	Training solution using immersive Virtual Reality technology (glasses and 360° display device).
Corporate	Brasoftware	Implementation of the Chatbot solution to support employees, replying to doubts and questions related to vacations and benefits.

## 2018's MAIN PROJECTS

### PDAI - Industry 4.0

- MES (Manufacturing Execution System) Program for Três Marias
- Automation of production and digitizing laboratory management in Vazante
- Production performance analysis
- Communication system expansion
- Definition of a strategic roadmap for the implementation of high-availability networks in underground mines

### Digital Workplace

- HR - optimization of internal relationship websites
- Commercial - implementation of the Salesforce digital platform
- IT - mapping processes and capabilities for digital transformation
- Intelligence and the market - building a single data base

### Data management and intelligence

- Creation of data management department and governance
- Data intelligence management program event

### Information Security

- Evolution of Cybersecurity governance aligned with the Nexa's new objectives
- Implementation of the information security roadmap for achieving maturity

### Technological architecture

- Implementation of the IT architecture strategy roadmap
- Application and server rationalization program
- Migration of the technological assets to the cloud
- Creation of the Network Architecture Roadmap

The other enablers of the strategy - People and Organization, Supplies and Risk Management - are detailed in the Corporate Governance and Performance chapters



# Corporate governance

**We adopt the best corporate governance practices to ensure transparency, fairness, responsibility and accountability in our businesses. We extract what is essential from the present, with a responsible view of the future, to generate value for us and for society. We go beyond efficiency and technical rigor, achieving the trust of people and the markets.**

Our main policies are established by the Board of Directors and supported by three advisory committees: Finance; Remuneration, Nominations and Governance; and Audit, the latter made up only of independent board members.

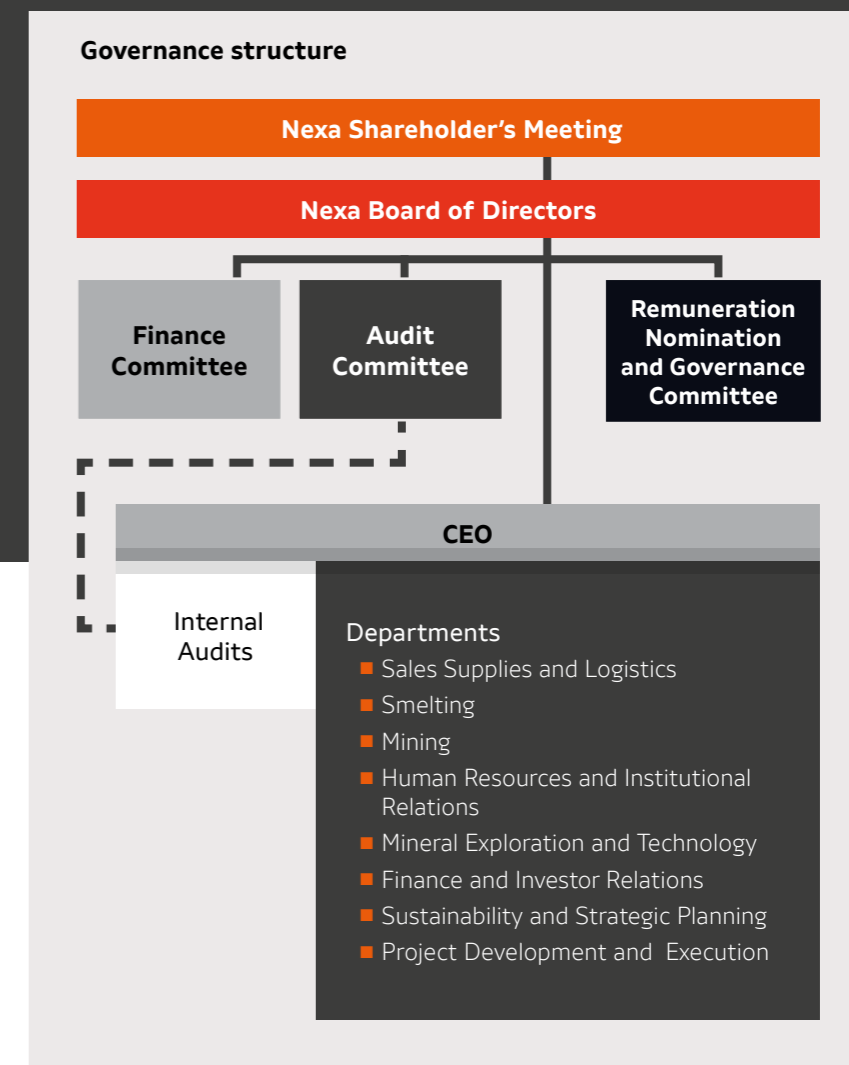
We have published a Corporate Governance Manual, based on our purpose and values, designed to guide decision-making and protect the interests of the shareholders, the company and the market. The model is intended to facilitate the flow of information between our executives and other key decision-makers on our team and ensures that the appropriate principles are applied consistently across the organization. [GRI 103-1, 103-2, 103-3](#)





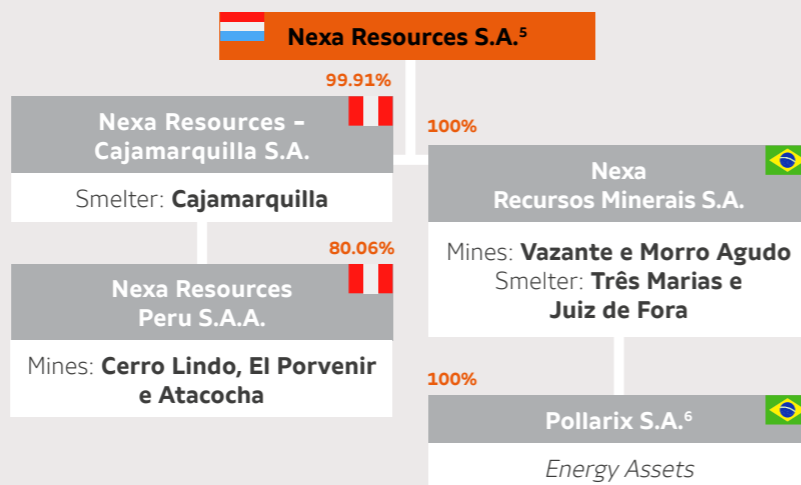
## Governance structure GRI 102-18

Our governance structure is composed of the Shareholders' Meeting, the Board of Directors, the Advisory Committees and the Board of Executive Officers.



In October 2018, we completed one year as a publicly traded company with shares on the New York/NYSE (United States) and Toronto/TSX (Canada) stock exchanges. Nexa came into being as a strong and structured company, since governance bodies were in place before the organization's initial public offering in 2017, proffering autonomy and agility to decision-making and business strategy definitions. Our governance model is constantly evolving, since we believe that good corporate governance leads us to generate more value for the shareholders and for society.

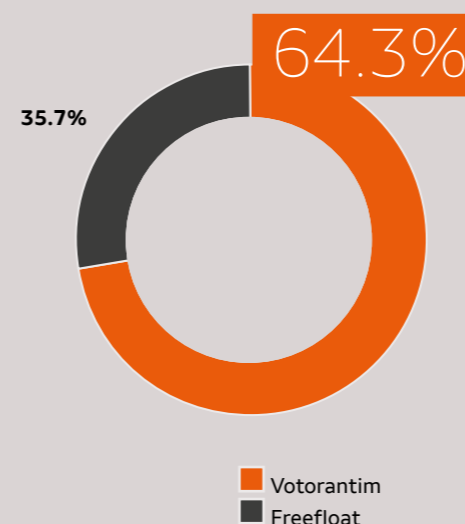
## Organizational structure



<sup>5</sup> Nexa Resources has a direct ownership interest of 0.17% in Nexa Resources Peru S.A. and an indirect stake of 80.06% through the Cajamarquilla unit; 15.79% of the publicly traded shareholding and the remaining 3.97% of the shares are in Treasury. Excludes the investment class shares.

<sup>6</sup> Nexa owns 100% of the common shares and 33.3% of the total capital of Pollarix.

## Capital structure GRI 102-5



## Shareholders Meeting

It is our main decision-making body, empowered to amend the Bylaws, elect or dismiss members of the Board of Directors, approve accounts and financial statements, and other matters that are vital to our businesses.



**Board of directors** GRI 102-22

(From the left:)

**Edward Ruiz**  
Independent Member (Audit Committee and Finance Committee)

**João Henrique Batista de Souza Schmidt**  
Member (Finance Committee)

**Diego Cristóbal Hernandez Cabrera**  
Member (Finance Committee)

**Jean Simon**  
Member

**Jane Sadowsky**  
Independent Member (Audit Committee)

**Luis Ermirio de Moraes**  
Chairman of the Board (Remuneration, Nominations and Governance Committee)

**Daniella Dimitrov**  
Independent Member (Audit Committee)

**Eduardo Borges de Andrade Filho**  
Independent Member (Compensation, Nominations and Governance Committee)

**Ivo Ucovich**  
Member

**Board of Directors (BoD)**

It strives for fulfillment of the business objectives and monitors our performance, seeking business longevity. The BoD, among other activities, is responsible for establishing a general guide for the company's business, defining mission, strategic objectives and guidelines; conduct annual adoption and approval of strategic planning; approve transactions related to Capex investments, loans or derivative contracts, mergers, spin-offs, mergers, divestitures and joint ventures, in accordance with the provisions set forth in the Bylaws; directing and ensuring the company's governance and sustainability.

Our Bylaws require that the Board of Directors be comprised of at least five and at most 11 full members, at least three of them independent, in order to comply with the rules established by the stock exchanges in which we are listed. The members' term of office is one year, with the possibility of re-election. The Board of Directors (BoD) is composed of nine members, including two women and seven men, of five nationalities - Brazilian, Canadian, American, Croatian and Chilean. No member, including the Chairman of the Board, exercises an executive function in the company and all are compensated. GRI 102-23

More information on the Board of Directors' attributes and access to each member's résumé is available at <https://ri.nexaresources.com/BoardofDirectors>

**Advisory Committees** GRI 102-18

In its quest for continuous excellence, the Board of Directors has established committees to advise it on monitoring the company's performance. Composed of board members, the committees are permanent and cover Audit, Finance, Remuneration, Nominations and Governance matters.

Each committee has its own set of internal rules, which establishes roles and mandates, rules and procedures for its operation. There are at least four meetings per year, and periodically one of the members reports on the activities of the committee back to the BoD.

**Audit Committee** - Comprised of three independent members of the BoD, its objectives are to supervise the integrity of financial statements and internal control systems, monitor the risk management process, and establish ethics and conduct standards and procedures.

**Finance Committee** - Comprised of three members of the BoD, one independent. It is responsible for understanding market scenarios and trends, defining strategies and financial policies, evaluating and monitoring annual investment plans, proposing guidelines for cash management and the company's liquidity position.

**Remuneration, Nominations and Governance Committee** - Composed of two members of the BoA, one being independent. This committee is responsible for evaluating compensation models, recommending candidates for CEO and the Board of Directors, assessing the performance of the Board of Directors, the CEO and each of the Advisory Committees, and developing corporate governance guidelines and principles.

**Board of Executive Officers**

Our Board of Executive Officers is made up of leaders who are able to act globally in key areas of business and in relationships with all stakeholders. It aims to ensure the development and execution of the strategic and budgetary plan, based on guidelines received from the Board of Directors.

Comprised of the president and eight directors, it is responsible, among other things, for monitoring strategic planning, discussing financial and non-financial issues and devising tactical action plans for the teams.

**Board of executive officers**



# Ethical behavior

GRI 102-16, 103-2, 103-3

We are committed to running our business to the highest ethics and integrity standards and, based on this commitment, in 2018 we optimized our Compliance Program (Programa de Compliance), which specifically spells out the conduct we expect from all of our own and outsourced employees in dealing with a wide variety of different situations. The Board of Directors is one of the main agents in promoting the program and we are determined to ensure its compliance so that we can manage our business to the highest standards, with a penalty for actions that do not conform to our program. The area of Risk Management, Internal Controls and Compliance is responsible for managing and disseminating this program. Linked to the Financial Department, the area is supported by Internal Audit.

One of the main pillars of the Compliance Program is the Nexa Code of Conduct, essential in guiding activities and supporting decisions made at all levels of our company. Based on the century-old values of the Votorantim Group, this document was revised in 2018 and guides our internal behavior and the way we interact with different stakeholder publics. In the year, all BoD members received training in the human rights guidelines. Beginning in the first quarter of 2019, this training will be applied to all our employees.

GRI 412-2

The Code of Conduct is a public document, shared with all stakeholders, including employees, suppliers, customers, communities, NGOs, government entities, shareholders and other individuals and organizations with whom we interact, to ensure that we achieve excellence in all our practices.

Our beliefs and values are detailed on the internet (<https://www.nexaresources.com/beliefs-and-values>). GRI 102-16

## New policies SDG 10.3

In 2018, the Compliance area underwent restructuring, in line with its configuration and global coverage, standardizing the guidelines for all units. We reviewed and optimized our Compliance Program to ensure fulfillment of the laws of the countries in which we operate. We published four new policies (Compliance, Anti-Corruption, Antitrust/Competition, and Prevention of Money Laundering and Terrorism Financing) available in three languages on the company's website (<https://ri.nexaresources.com/documents>), as well as nine internal procedures that detail day-to-day management of these topics. SDG 16.5

Analyzed and approved by the Board of Directors, these documents address aspects such as human rights, political contributions, conflicts of interest, worker's rights and duties, among other topics. Because the Anti-Corruption policy has changed, a new e-learning course is being prepared to be applied to all Nexa representatives in 2019. GRI 205-2

The Code of Conduct has also been updated in the light of the new policies. In addition to online consultation of the documents, doubts can be clarified directly with the Compliance team. The ensure dissemination of the documents to all of the company's areas and suppliers, an e-mail was sent out and physical materials delivered for consultation. The signing of a Receipt Protocol confirmed that the document was received.

In all countries, we organized a Compliance Day in December, involving board members, managers and general managers. By 2019, these activities will be extended to the entire organization. No cases of corruption or violation of antitrust laws involving employees or business partners were confirmed in the period. GRI 205-2, 205-3, 206-1

Compliance-related issues are reported to the Audit Committee, which is responsible for periodically bringing them to the attention of the Board of Directors.

## Ethics Line GRI 102-17 SDG 5.1

To become cognizant of, analyze and resolve any issue related to Compliance or to report possible violations of the Code of Conduct or any policy, procedure, law or regulation, we have made an Ethics Hotline available to the in-house and outside publics. Through this channel it is possible to fully, anonymously, report any suspicion of financial crime, fraud, corruption, discrimination, harassment or other types of ethical violations. Available in Portuguese, English and Spanish, the service can be accessed through the electronic address: (<https://secure.ethicspoint.com/en/ethics-line>) or by phone (Brazil: 0800-892-0741 (Portuguese); Peru: 0800-50-000 (Spanish) and 0800-50-288; United States: 1-855-888-9926; Austria: 0800-200-288; Canada 1-855-888-9926 and 1-855-350-9393; and Luxembourg: 800-201-11 (English and French)).

The channel is administered by an independent and qualified outside company. This organization receives all complaints, makes a preliminary classification and releases systemic access to members of the Nexa Conduct Committee who are responsible for handling complaints, conducting investigations and recommending corrective measures, when necessary.

## Conduct Committee GRI 102-17

The Conduct Committee is an executive body composed of Nexa's CEO and those responsible for the Legal, Human Resources, Compliance and Internal Audit areas. It may request the participation of other areas, if necessary. In any case involving members of the Executive Board, the Conduct Committee shall refer the matter to the Audit Committee and the Board of Directors to always assure the independence of the process. These bodies are responsible for investigating and managing any penalties.

All reports are evaluated and monitored until they are duly resolved. In 2018, 139 reports were received through the channel, being resolved and/or closed in an average period of 28 days, compared to 41 days over the previous year.

Complaints and denunciations of another nature, such as customer services, supplier management or community-related issues are addressed to Customer Service (SAC) and, in the case of labor issues, to the Human Resources (HR) area.

Ethics line reports	2017	2018
Analyzed and considered to have standing	40	43
Analyzed and considered unfounded	77	76
Received in the year under analysis	11	13
Closed due to lack of information for analysis	12	7
<b>TOTAL RECEIVED IN YEAR</b>	<b>140</b>	<b>139</b>

Discrimination reports received by the ethics line <span style="float: right;">GRI 406-1</span>	2017	2018 <sup>7</sup>
Received in the year under analysis	8	6
Analyzed and considered to have standing	27	27
Analyzed and considered to be unfounded	40	56
<b>TOTAL ANALYZED OR UNDER ANALYSIS</b>	<b>75</b>	<b>89</b>

<sup>7</sup> For the 27 cases considered to have standing, 10 were related to harassment and/or abuse of power and 17 to persecution, disrespect and discrimination. In all cases, corrective measures were adopted, such as dismissals, verbal warnings, suspensions and/or transfers.

We have made gains in improving the processes of standardization of due diligence for the evaluation of suppliers, which is carried out at the beginning of the relationship and thereafter throughout the contractual periods with third parties. The documentation requested from suppliers is aimed both at ensuring adherence to the policies and the Nexa Code of Conduct and the requirements of countries with which we have commercial relations.

# Risk management

GRI 102-15, 103-1, 103-2, 103-3

We treat risk and opportunity management as a significant point in our business strategy and the topic is ingrained in our corporate guidelines. Since 2016, we have followed the Enterprise Risk Management Policy (ERM), which addresses the main risks in all corporate areas and operating units and is applied to subsidiaries and controlled companies.

The mapped risks include four major topics: Compliance; Business Risks (operational and strategic, including socio-environmental aspects); Internal Controls and Financial Risks. The risk matrix is reviewed annually to ensure it is always aligned with our strategic plans.

For risks considered critical and high, we draw up action plans with deadlines established for completion. Our risk monitoring actions involve, in addition to the area directly responsible for the topic, the Risks, Internal Controls and Compliance team, the Executive Board members responsible for the area and the Board of Directors. For risks below this classification, monitoring is conducted at opportune moments by the areas involved. The details of the risks we manage can be found in the 20-F form, submitted to the New York Stock Exchange and accessed at <https://ir.nexaresources.com/regulatory-filings>.

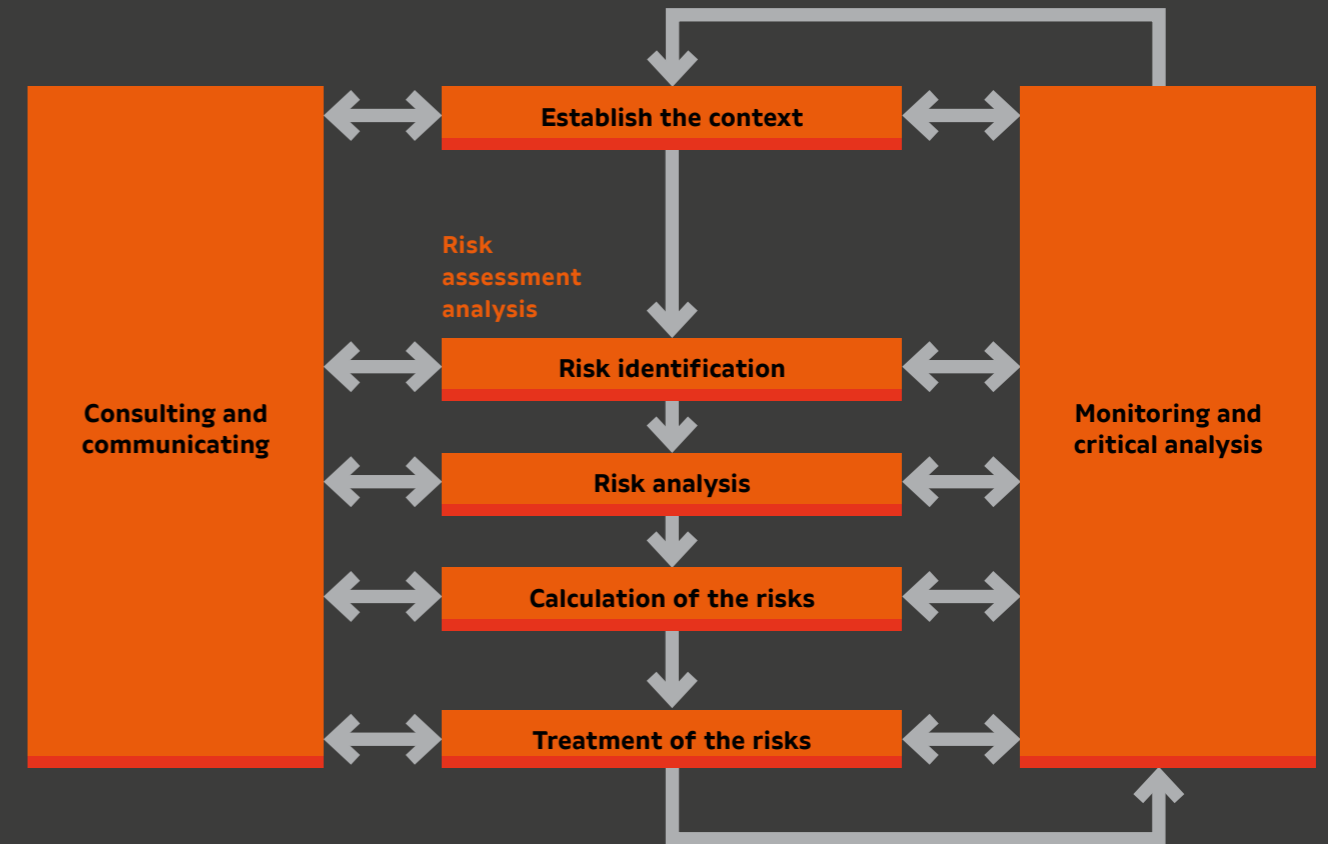
## Quarterly report

We introduced the Risk Management Report in 2017, which each quarter presents the main factors mapped in the operating units and corporate areas and the respective actions that are being taken to mitigate them. This resource aims to provide a broader view of all the initiatives and teams involved in managing business-related risks.

As part of the annual process, all our units and corporate areas participated in the operational risk assessment cycle. In addition to the reassessment and discussion of all risks, the managers presented the most critical risk surveys and the respective mitigation actions being adopted, based on the criteria established in ISO 31000, which defines benchmarks for different phases of management (contextualization, identification, analysis, monitoring and review, treatment and evaluation).

At the end of 2018, we concluded the implementation of the B Wise tool for systematization and efficiency gains in the risk assessment and monitoring process. Subsequently, in 2019 we will conduct training and migration rounds on the full business risk management activity for this platform.

## Business risk management model



# Stakeholder engagement

We continually improve our relationships with all stakeholders as a way of maintaining the sustainable growth of our business and a permanent, open and transparent dialogue with each stakeholder. We consider the stakeholders that represent higher impacts on our operations and operational strategy to be the most important, as well as having a greater influence on our business. These groups include shareholders and investors, communities, employees and clients. However, we view banks, suppliers, sector associations, government authorities, regulatory agencies,

third sector organizations and the press with equal respect and consideration.

As a way of maintaining engagement with these groups and promoting ongoing dialogue, we participate in sector forums and meetings, hold events with our business partners and have meetings with leaders of communities neighboring our operations. This is all designed to collect suggestions and complaints, clarify doubts and provide communities with information about our ongoing projects.



# Our impacts

	Mineral exploitation	Greenfield	Mining	Processing	Smelter	Sales	Decommissioning <sup>8</sup>
<b>Social</b>							
Employment and income	+	+	+	+	+	+	-
Local Development (Positive Agenda)		+	+	+	+		+
Increase in cost of living		-	-	-	-		
Local infrastructure overload <sup>9</sup>		-	-	-	-	-	
<b>Environmental</b>							
Impacts on biodiversity <sup>10</sup>	-	-	-	-			
Recovery of Degraded Areas		+	+	+			+
Noise		-	-	-	-		
Waste		-	-	-	-		
Greenhouse Gases	-	-	-	-	-	-	-
Other gases (NOx, SOx, etc.)		-	-	-	-	-	
Particulate matter		-	-	-	-	-	
Effluents			-	-	-		
Disposal of mining and smelting waste			-	-	-		
Water <sup>11</sup>			-	-	-		
<b>Economics</b>							
Tax on products and services	+	+	+	+	+	+	
Tax on ore withdrawn CFEM			+	+			
Cash generation			+	+	+	+	
Value creation <sup>12</sup>		+	+	+	+	+	

+ Positive impacts    - Negative impacts

<sup>8</sup> Decommissioning considers the moment of closure of the activities of the units.

<sup>9</sup> Includes the circulation of trucks on local roads, public housing infrastructure, health, mobility and education.

<sup>10</sup> Impact on fauna and flora, including plant suppression.

<sup>11</sup> Impact on the river course, lowering the water body and also water use.

<sup>12</sup> Added value for the cities in which Nexa is located.



n

# Performance

## Economic-Financial Operational results

Our production reached the 2018 forecast for all metals. Zinc contained in concentrate production totaled 373 thousand tonnes, stable compared to the 375 thousand tonnes produced in the previous year. The production of zinc equivalent corresponded to 556 thousand tonnes. The decrease of 3% in comparison with the 571 thousand tonnes of zinc equivalent produced in the previous year was due to the lower production of copper, mainly driven by lower grades.

### Production of metal contained in concentrate (thousand tonnes)

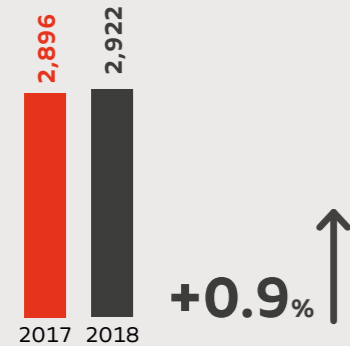
	Zinc	Copper	Lead
Vazante	140.8	-	1.2
Morro Agudo	26.4	-	6.1
Cerro Lindo	130.3	38.3	12.8
Atacocha	17.3	0.1	15.6
El Porvenir	57.9	0.6	16.6
<b>Total</b>	<b>372.8</b>	<b>39</b>	<b>52.3</b>

Our smelters delivered excellent performances, with production remaining stable during the year. Reaching the top of the sales forecast range for 2018. Sales of zinc products processed in our smelters (metallic zinc and zinc oxide) reached 617 thousand tonnes in the year, 4% above sales of 594 thousand tonnes in 2017, mainly due to the greater volume in the units of Cajamarquilla and Três Marias, which rose 6% and 3%, respectively.

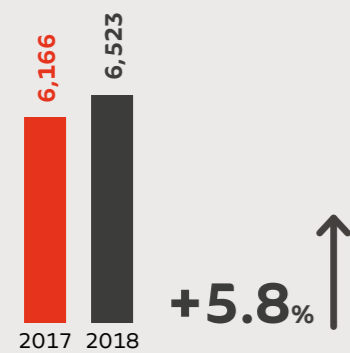
### Sales of smelter products (thousand tonnes)

	Metallic Zinc	Zinc
Juiz de Fora	78.7	-
Três Marias	167.4	38.2
Cajamarquilla	332.6	-
<b>Total</b>	<b>578.7</b>	<b>38.2</b>

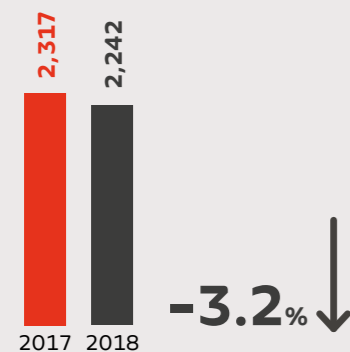
**ZINC (US\$ /t)**  
Average price on the LME



**COPPER (US\$/t)**  
Average price on the LME



**LEAD (US\$ /t)**  
Average price on the LME



**Financial results**

Net revenue from our 2018 operations of US\$ 2,491.2 million was 1.7% higher than the value recorded in 2017 (US\$ 2,449 million) due to slightly higher LME prices combined with higher metals sales.

Our adjusted EBITDA was US\$ 604.8 million, a decrease of 9.4% over 2017, as a result of higher costs incurred due to revisions in safety processes and mine development initiatives, mainly in Cerro Lindo. The adjusted EBITDA margin was 24.3% in 2018, down from 27.3% in the previous year.

Cost of sales amounted to US\$ 1,889 million in the 12 months of the year, an increase of 7.8% compared to 2017. This reflects higher costs of the purchase of concentrate by our smelters in the first half of the year. Selling, general and administrative expenses totaled US\$ 159.6 million for the year, 3.3% more than in 2017.

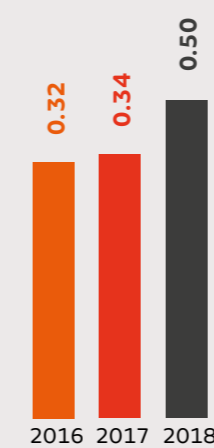
**Financial results (US\$ million)**

	2016	2017	2018	2018 X 2017
Net revenue	1,964.8	2,449.5	2,491.2	1.7%
Cost of goods sold <sup>13</sup>	(1,504.2)	(1,752.8)	(1,888.9)	0.7%
Selling, general and administrative expenses <sup>13</sup>	218.0	154.5	159.6	3.3%
Sales <sup>14</sup>	(25.5)	(17.6)	(18.7)	0.7%
General and Administrative <sup>13</sup>	(118.7)	(136.9)	(140.9)	0.9%
Other operating results <sup>14</sup>	(139.7)	(47.9)	18.2	N/A
Depreciation, amortization and depletion	275.0	270.5	267.2	(1.2)
Adjusted EBITDA	403.9	667.5	604.8	(9.4%)
EBITDA Margin (Adjusted EBITDA/NR)	20.6%	27.3%	24.3%	-297bp

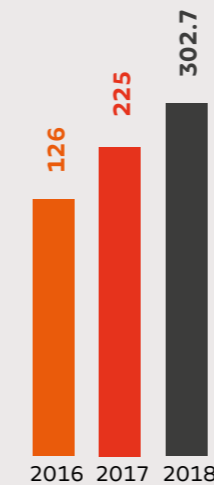
<sup>13</sup> Data published in 2017 has been revised.

<sup>14</sup> Data published in 2016 and 2017 have been revised [GRI 102-48](#)

**Net debt/Adjusted EBITDA**



**Net debt**  
US\$ million



**Liquidity and debt**

At December 31, 2018, our total gross debt was US\$ 1,428.9 million (only principal), consisting mainly of (73%) of bonds issued by Nexa and its subsidiary Nexa Peru, of which US\$ 700 million matures in 2027. Another 14% refers to loans through international banks. Only 1.6% of the debt (equivalent to US\$ 23.3 million) expires in 2019.

The average maturity of our debt is 6.1 years and the average cost is 4.8%, mainly due to the impact of these ten-year bond issued in May 2017, with a coupon of 5.375% p.a. We ended the year with low net debt to Adjusted EBITDA ratio of 0.50x.

**Cash flow**

Net cash provided by operating activities totaled US\$ 347.6 million. The lower cash generated by operations in 2018 was driven mainly due to lower gross profit.

We used US\$ 158.1 million in net cash flow for investment activities in 2018, mainly due to the higher Capex throughout the year. Net cash flow from financing activities during the year was US\$ 177.4 million, including the payment of US\$ 80 million share premium in March.

Our cash position as of December 31, 2018 was US\$ 1.1 billion considering cash & cash equivalents plus financial investments.

US\$  
299.7  
million  
of Capex investment,  
52% more than  
previous year

## Investments

Our investments aligned with the strategic earmarking (Capex) totaled US\$ 299.7 million in 2018. The expansion-related portion mainly consisted of deepening the Vazante mine (US\$ 47 million) and the tailings dry stack implementation in the same unit (US\$ 20 million).

Capex was US\$ 40 million higher than expected as we accelerated some investments at the end of the year (approximately US\$ 8 million related to the Magistral greenfield project and approximately US\$ 7 million related to Vazante). We also accounted for US\$ 14 million of operating expenses related to the integration of the El Porvenir and Atacocha mines that were reclassified to Capex, in addition to terms incurred in higher maintenance Capex in Cerro Lindo, due to mine development initiatives.

In addition to investments in Vazante, we completed the FEL3 phase and started the Aripuanã project in Brazil (US\$ 19 million), and invested US\$ 14 million in the conversion of the Cajamarquilla smelting process to jarosite to boost zinc recovery at the unit.

In 2019, we will increase our Capex compared to 2018, mainly due to the initial investment in the Aripuanã project, our most advanced greenfield project. We received the Aripuanã Installation License on December 20th 2018 and immediately began investments into the construction. We estimate that in 2019 approximately 35% (or US\$ 140 million) will be spent on the estimated overall US\$ 392 million in investments for this project.

### Capex investments (US\$ thousand)

	2016	2017	2018
Expansion	41,421	48,825	90,506
Modernization	19,624	21,363	14,990
Sustaining	54,054	59,439	90,250
HSE	58,504	62,060	89,051
Others	9,387	5,905	14,921
<b>TOTAL</b>	<b>182,886</b>	<b>197,638</b>	<b>299,713</b>

## Stock buyback

During 2018, we repurchased 112,388 common shares at an average price of US\$ 12.00 per share for a total of US\$ 1,350 million. The repurchased shares represent 0.24% of the free float of common shares outstanding before the launch of the program. Under the program approved by the Board of Directors on September 20, 2018, Nexa may repurchase, directly or indirectly (through its subsidiaries), up to US\$ 30 million of its outstanding shares during the 12-month period. The repurchased shares will not be canceled, but will be held in Treasury.

## People

GRI 103-2, 103-3

Our company has been following a consistent path of brand consolidation and building a strong and integrated culture, capable of guiding the organization's people as they grow their achievements and face new challenges. Intelligence, enthusiasm and courage are the characteristics that make up what we call our brand personality. The launch of the Nexa brand strengthened the company's repositioning in the market and society as a company focused on the construction of the next generation of mining and the generation of shared value. We also initiated a process of cultural transformation aligned with this position and our business strategy.

The brand has been projected for the future and positions us as a mining company that features expertise and thinks differently; as a company that provokes new ways of doing things and has the courage to prove it is possible take new paths, transforming and influencing society, bringing the world of mining to the world of people. These three characteristics, based on Votorantim's DNA and translated into behaviors, also form the Nexa Way, which guides the day-to-day actions of our employees, leaders and teams.

This is also our way of managing people within our organization. All initiatives are underpinned by five strategic focal points: inspiring leadership and effective management of talents, assured critical capabilities, contributing to increased company productivity and competitiveness, effective governance and organization, and effective stakeholder relations.

# the nexa way

## Intelligence **To believe it is possible to do things differently**

- To first act safely
- To be a transformation agent
- To seek the best references inside and outside the company
- To be continuously focused on the search for knowledge, development and excellence
- To be a protagonist: to have a good understanding of the company and to seek information, to follow the news through the internal and external channels
- To understand the industry and the trends

## Enthusiasm **To provoke to make it possible to do things differently**

- Do not settle for the same ways of doing things, face different challenges
- Provoke yourself and those around you to escape your comfort zones
- Stimulate and contribute so that the entire mining chain thinks differently
- Be energetic and contagious, helping to bring about the necessary transformations

## Courage **To help provoke change to do things differently**

- Propose new ideas and paths to overcome the company's challenges
- Listen to suggestions and be open to change when necessary.
- Take well-grounded positions with conviction, both within and outside the company
- Ask questions and dive deep to expand understanding and bring about evolution
- Make the best decisions, in a timely manner, with the best information available

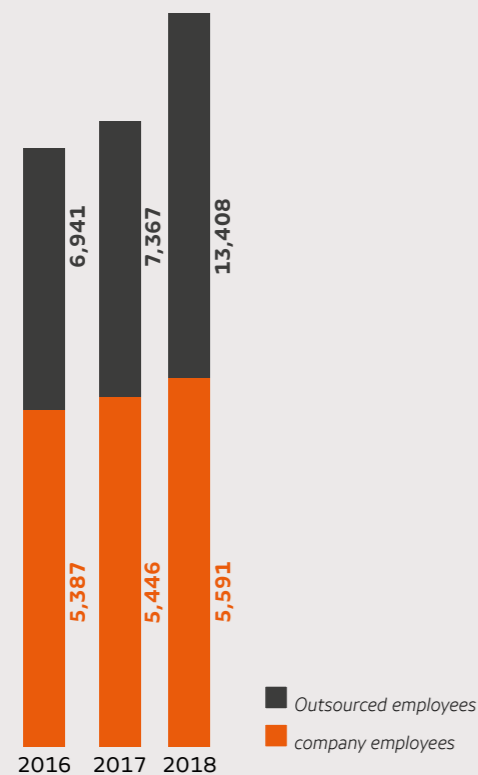




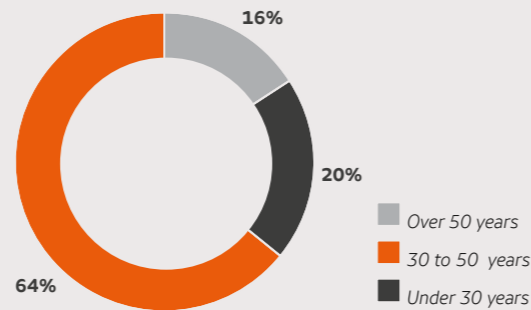
### Employee profile

We value a diverse profile of employees. Due to the nature of our operations, especially in Peru, we have a large contingent of outsourced labor. In 2018, our staff comprised 5,591 direct employees, of which 3,198 were in Brazil, 2,367 in Peru and 26 in other countries, in addition to 13,408 outsourced workers. Of the total number of employees, 64% belonged to the 30-50-year-old age group; 67% performed operational functions, and the proportion of women was 11.7%.

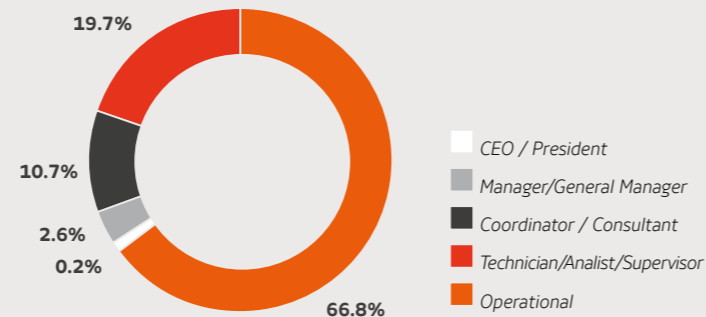
### Total Number of Employees GRI 102-8



### Employees by age GRI 405-1



### Employees by Category/Function GRI 405-1



## Qualification and training

GRI 103-2, 103-3, 404-2 SDG 4.4

We are a company that attracts, trains and retains talent. That is why we encourage employees to develop themselves professionally, by offering training and qualification programs, sharing ideas and experiences and continuing to challenge them in an inspiring work environment that nurtures safety and diversity.

We use the Personnel Development System to ensure that 100% of our employees can discuss, together with their managers, the skills and attributes they need to evolve within the company. It is a personnel management model that encourages open dialogue, transparency and career development possibilities, strengthening our strategies and stimulating professional growth. GRI 404-3

We promote the constant development of leaders, as well as providing our team with technical skills. Among the programs offered we can mention:

**Mentoring:** The program stimulates the exchange of knowledge and the structured orientation among professionals of different hierarchical levels. Hence, we promote open dialogue and the cultivation of talents, in addition to bolstering relations between different areas, expanding networking and multiplying experiences. Over the four years this program has been running, 70 professionals were mentored. Furthermore, 18 new mentors were prepared in 2018 to take up this challenge.

**Cultivating Leaderships (Cultivando Lideranças):** We continued the Cultivating Leadership Program globally, which aims to align our leaders with the company's overall context, strengthening their knowledge and developing the skills needed to better play a part the development of people. Since the beginning of the program, more than 700 leaders have been trained in Brazil, Peru and Luxembourg.

One of the program's modules involved the development of inspiring leadership, which hires, develops and engages talents, ensuring high-performance teams. This pillar was developed in a more relaxed format that aims to exchange knowledge and promote collaboration among employees.





**+Talents (+Talentos):** Created in 2017, the program focuses on hiring people and developing individuals who have greater expertise in specific areas. The idea is to train talented people so that in the future the area can count on more human resources available for its succession pool. The focus point of the program in 2018 was Health, Safety and the Environment (HSE) and the first formation session took place between September 10 and 14. *(Details are in the Safety and Health chapter).*

**The Nexa Way Experience:** This initiative was aimed at enabling employees to experience, in practice, the adoption of the Nexa Way. In 2018, a pilot program was created that opened the entire organization to the opportunity to participate in a challenge focused on combating unnecessary bureaucracy, working in a different format with an autonomous group, self-managing and based on agile methodologies concepts. Of the 28 employees who signed up, seven were selected to continue in the project. The proposal presented was the creation of an in-company accelerator, named Atom, whose activities will be developed over the course of 2019.

For technical qualification, of particular note was the acquisition of a structure (container) for training heavy equipment operators (LHD, scaler, drilling). In 2018, the initiative leased a Jumbo simulator for the Vazante and Morro Agudo units; acquired a simulator for driving A30 trucks in Vazante; made a diagnosis to

evaluate the level of knowledge of automotive maintenance employees, which will guide the training efforts in this area, beginning with technical training in lubrication.

During the year, we offered more than 200 thousand hours of training and qualification to our employees in Brazil and Peru, with an average of 31 hours per employee and investments of more than US\$ 2 million, maintaining almost the same amount that had been invested in 2017 for this purpose.

To develop a strategic focus, "assured critical capabilities," our Master Plan contains 11 critical capabilities that ensure business continuity. In 2018, an assessment was carried out to evaluate the maturity of each one. It was identified that for the five that were prioritized in the last two years - talent management, operational excellence, mineral exploration, capital sourcing and execution of projects - at least 75% had reached maturity. As a next step, we will update the master plan, aiming at the need to develop new capabilities and their continued development in the organization.

**Average Hours of Training Per Employee** GRI 404-1



200 thousand hours of training

More than US\$ 2 million invested



# Material topic People

GRI 103-2, 103-3 | SDG 5.1, 5.5, 5.C, 8.5, 10.2



6. STIMULATE



4 QUALITY EDUCATION

5 GENDER EQUALITY

8 DECENT WORK AND ECONOMIC GROWTH

10 REDUCED INEQUALITIES

## Diversity

Target	2016	2017	2018 <sup>15</sup>	Form of measurement
Reaching 20% of women throughout Nexa Resources by 2025 Base Year: 2014	10.2%	10.5%	11.7%	Total women/ Total employees

<sup>15</sup> As of 2018, we began to consider Nexa Resources S.A. (Luxembourg) and Votorantim US, Inc. (U.S.) in the calculation of the target.

Since 2015, when the percentage of female employees was 9.3%, our focus has been on maintaining an active Diversity Committee, encouraging the increase of this percentage through initiatives in which the entire company participates.

The governance of the Committee, revised in 2018, was even more robust, featuring the Strategic Committee, the Corporate Committee and nine Local Committees, whose purpose is to coordinate the implementation of a number of actions aimed at uniformly and constantly promoting diversity in all our units.

The main function of the committee is to foster initiatives and support the achievement of specific goals for different diversity issues, such as reaching 20% of women in the workforce by 2025. We want to create a diverse environment of harmonious coexistence that is a reflection of society. For instance, we hope that our organization will have a representative number of women, people of different ethnicities and employees with disabilities.

Female inclusion is a very important issue for us, given that the mining sector is mainly led by men. Our mission is to contribute to change this reality. We are promoting women's participation in both leadership and operational

roles, raising the awareness of their talent and ensuring that leaders consistently demonstrate that diversity and gender equality are essential elements in strengthening a company.

We have achieved this by employing women in positions considered "unconventional" for the gender, which promotes a more wide-ranging and inclusive vision in the teams.

We have also recorded advances in the inclusion of people with disabilities, leading an electronic learning group for young people with intellectual disabilities in partnership with the Industrial Learning Service (Senai) and the Association of Parents and Friends of the Disabled (Apae), at the Morro Agudo Unit. The program offers professional training of persons with disabilities, guaranteeing autonomy, protagonism and their inclusion in the labor market. It is based upon a unique methodology and courses are lively, featuring practical exercises and memorization activities. Some 26 students were trained during the year. [SDG 4.5](#)

### Organizational climate survey

As a result of initiatives to strengthen an environment where everyone can develop their potential fully and without barriers, we received an excellent score in the biennial climate survey. With 93% employee participation, our favorability index rose from 72% in the last survey to 77% in the current edition. This places us again within the top first quartile of our industry, even though it was a period of transition, in which we went through a process of integration between the companies and the consolidation of the IPO.

The leadership and development item had the highest favorability rate, which shows that we are moving in the right direction to develop and retain our staff talents.

The good relations with employees also was recognized externally. Our company was chosen in two of the nine categories in the Good Labor Practices competition organized by the Ministry of Labor and Employment Promotion in Peru. It ranked second in the "Promotion of equal opportunities for men and women" category, with its Diversity Committee case study and for the "Promotion of organized work with local suppliers of Peru," through its Communal Companies Management project.

### Recognition program (Programa de reconhecimento)

Designed to increasingly improve the value of the engagement and participation of our employees and third parties, we now recognize the best initiatives developed on four fronts: Health and Safety, Environment, Operational Excellence and Social Responsibility. In 2018, there were over 200 initiatives registered in the Program, with 12 chosen to participate in the final stage, three in each category.

The four most innovative initiatives were recognized.

- In the category of **Safety and Health**, the winner was the "Perception of Risk - Strengthening the Commitment to Life" project from Três Marias, which proposes actions to establish a strong and genuine culture focused on accident prevention, caring for people and commitment to life.
- In **Social Responsibility**, the highlight was "Alternative Cultivation" from Cajamarquilla, a pilot project to produce vegetables rich in nutritional content in recycled PET bottles, using a hydroponics technique, with the aim of enriching the local community's nutrition and fighting anemia.
- In the **Environment**, Cerro Lindo won with the "Plastic Waste" project, which creates an environmental culture involving employees and communities promoting plastic waste recycling.
- In the **Operational Excellence** category, the winner was the "Quality as Value" project from Juiz de Fora. This comprises actions aimed at ensuring the satisfaction of internal and external market clients and rework reductions.

The top committees in the year were also chosen - Lima Corporate and the Três Marias Unit - based on an evaluation that took into account the mix of actions and the coefficient of hours dedicated to voluntary actions, as well as the planning and recurrence of actions and the level of engagement of the unit. The volunteers who inspired each unit were chosen for their dedication and work and encouragement of the collective spirit. (Other results from the We Are Everyone volunteer program can be found in the Local Development chapter on page 92).



### Global Integration Plan (Integra Program)

Created to ensure that we are a strong mining company and an international benchmark, the program reinforces a global perspective in which local values are respected in the quest for a high performance culture. The plan was structured and put into practice with actions and projects in four pillars: Structure, People, Processes and Systems, designed to absorb the best practices in each country and to strengthen the concept of a unique and global company. Ten action fronts were developed, with priorities being Health and Safety, Talent Management, Organizational Structure, Standardization of Practices and Communication Management.

We maintained an integration group coordinated by the Management and HR areas, supported by the focal points in each department, which act as the multipliers for each area. The project's main target is to build an integrated company based on its unique vision and governance, where everyone feels they are part of the same family unit regardless of which unit to which they are assigned, where they all uphold the same standards whenever possible and develop custom-made processes when necessary.

In 2018, we conducted important actions on each of the work fronts, which contributed to the integration of macro-processes and communication, now reinforced

## INTEGRATION - MAIN ACTIONS IN 2018

### Safety Plan

- Implementation of the Program for the Prevention of Fatalities and the Contract Cells
- Improvements in food, water, dormitory and sanitary services
- Training of outsourced workers through risk perception modules

### Dissemination of the strategy

- Strengthening the communication of Nexa's Strategy for all audiences
- Inclusion of the strategy theme in the institutional video

### Formalization of practices

- Standardizing of Procurement and Logistics, Engineering, Mineral Exploitation, Technology, Financial, Legal, Commercial, Information Technology policies and procedures
- Integration of the access profiles and equalization of the approvals website
- Mining and Smelter Topic teams

through application of a single visual language across the company. As a result, we completed 90% of the actions contemplated in the Integration Plan.

One of the highlights was the implementation of the Program for the Prevention of Fatalities and Contract Cells (Programa de Prevenção de Fatalidades e das Células de Contrato), improving workplace safety aspects, an irreversible subject regarding our operations. We have also, with regard to personnel management, been able to equalize recruitment and selection practices at all levels, to have a global coverage of the talent development programs, in addition to the global standardization of the internal communication model. The installation of virtual rooms and the improvement of internet performance in the units facilitated information exchanges. And to maximize the swapping of experiences and adoption of best practices, we continued to run exchange programs, with a total of 60 employees participating over two years.

### Wage and benefits

- Review of remuneration and benefits strategy
- Equalization of benefits practices in Nexa's various countries according to the local market

### Information and communication

- Implementation of virtual rooms facilitating communication between units
- Improving internet performance in the Peru and Luxembourg units

### Communication Management

- Reformulation and creation of communication channels
- Implementation of the brand in the units
- Strengthening Culture and Histories
- Dialogue with the CEO Events
- *Integra* Newsletter

### Organizational structure

- Integration of the corporate organizational structures
- Diagnosis of the GS structure (Salary Group) of the corporate areas
- Strong IT Project: SAP Structure Diagnosis and Adjustment Proposal

### Values and Beliefs

- Strengthening Nexa's beliefs and culture
- Global Votorantim Development System (VDS)
- Cross Culture Program
- Employee participation in the Cultivating Leaderships Program

### Talent Management

- Redefining the system for the Recruitment and Selection Process and mobility programs
- Integration of career path processes

### Governance

- Review and integration of the Committees - Remuneration, Audit, Finance - and policy making

### Personnel management challenges

Among the challenges faced in the year was the implementation of a fourth work shift in Vazante, designed to boost mine productivity. To meet this demand, it was necessary to hire 56 employees and train them in a short period of time so that they were able to assume their job duties. That done, we were able to raise the production time in the mine from 15.2 to 19.2 hours per day.

Once the Aripuanã implementation license is obtained, the personnel management area also is tasked with guaranteeing the readiness of the workforce for the start of the operation, scheduled for 2021. To do so, we prepared a strategic plan to define how many new employees can be hired locally, how many need to be brought in from other regions, what training will be offered and what will be the

timetable. We also are working toward offering better infrastructure, such as living conditions, education and hospital care, among others.

In addition, in Peru, there were two strikes: one lasting five days in March in Cajamarquilla; and another for seven days in November, in Cerro Lindo. Both were considered unfounded by the local labor authority and had no impact on production. In El Porvenir, there were smaller work stoppage actions, of four days in January and two days in September. Both were also considered groundless and did not impact production.

# Material topic Safety and health

GRI 103-2, 103-3 | SDG 16.1



1. RESPECT



## Safety

Target <sup>16</sup>	2016	2017	2018	Form of measurement
Record an accident frequency rate with or without lost time equal to or less than the first quartile companies (best 25%) benchmark of the mining and metallurgy sector, by 2025. Base Year: 2014	2.25	2.46	2.23	Number of accidents with and without lost time x 1,000,000/man hours worked

<sup>16</sup> The target "Safe Behavior Index (SBI) greater than 90% for all units and subsidiaries Base Year: 2014" was withdrawn and excluded. GRI 102-48

Safety is our greatest asset. That is why we spare no effort to guarantee the safety of our employees, whether our own or outsourced. We aspire to strengthen a safety culture each and every day, one that does not tolerate non-compliance, is not silent in correcting risk behaviors, is in step with the planning of activities, ensures the implementation of risk controls, encourages the reporting of unsafe conditions and assures that they are corrected, and also deliberates in advance about the dangers and risks that the activities represent. SDG 8.8

The safety targets in 2018 were designed to eliminate fatalities, reduce the severity and number of accidents and raise the safety culture standards at all of our units, especially Peru's operations.

We have a strong leadership team engaged in all aspects of safety, with weekly scheduled encounters to deal with issues related to the subject and meetings on Mondays with the CEO. The meetings of the Board of Directors also set aside time slots for discussions of safety-related matters, with a quarterly evaluation of the indicators and planning options developed for the following quarter.

The leaders assist in maintaining employees' perceptions of the hazards of their work environment through the Daily Safety Dialogues (DSD) and managerial inspections (processes reviewed in 2018) in operational areas and through other management safety tools.

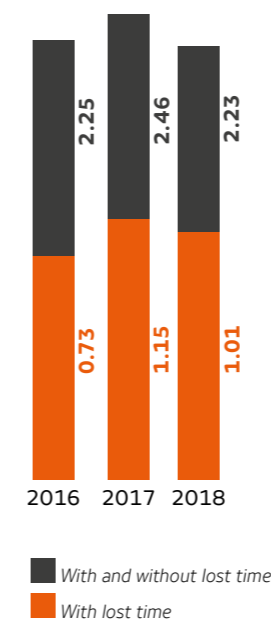
The risks of the activities are surveyed and control measures are implemented, which may be engineering (such as the need to install physical barriers), procedural (written standards, work rules that guarantee safety) or related to personal or collective protection equipment. For outsourced workers, the survey is conducted in conjunction with the outsourced companies' managers and safety teams. GRI 403-2

## Performance Indicators

As a result of the actions undertaken, no fatalities were registered, we stabilized both our accident frequency rates (with and without lost time) and enhanced our performance vis-à-vis the atypical year of 2017.

Our Accident Frequency Rate (AFR) was 2.23, covering accidents with and without lost time involving our own and outsourced employees, compared to 2.46 in 2017. The Accident Severity Rate (ASR) was 77, a significant improvement over the mark of 1,384 recorded in the previous year.

## Accident Frequency Rate GRI 403-9



In 2018, we adopted the Nexa Internal Rate indicator, which combines the results of the Accident Frequency Rate (AFR) and the Severity Rate (ASR). This indicator offers a complete snapshot of our safety performance. The indicator makes it possible to recognize the units and businesses that are aligned with our safety objectives as we work to improve results in terms of the frequency and severity of accidents.

This safety indicator also is one of the items that make up the variable compensation calculation for operational managers and professionals, the CEO and all executive directors, general managers and corporate area managers. In addition, in case of fatalities, sanctions are applied to the executives in the form of reduction of points to reach the annual goal.

## Safety initiatives GRI 403-5 SDG 16.1

To extend everyone's commitment to a safer operation, the Occupational Health and Safety and Communications and Institutional Relations areas launched a special program: "Do it for yourself; do it for your colleagues; do it for those who are waiting for you at home." The project is aimed at both our own and outsourced employees. It seeks to stimulate a sense of pro-activism by each employee as a change agent for doing what is right, pursuant to the necessary controls and recommended procedures (do it for you); to generate a culture for collective accident prevention and mutual protection of colleagues (do it for your colleagues); and to make employees aware of the importance of those with whom you live (do it for the ones who are waiting for you at home).

One of the actions was a photo contest, to amusingly reinforce the importance of family, a motivational activity for putting safe behavior into practice in our organization.



*"When I arrive at work, I leave behind worries, sorrows and problems. Because the support of my family depends on good care and protection in the work area."* (Juan Vilcamiza - Cerro Lindo, participant in the photo competition)

**"For us safety is a habit: at work, on the road and at home. When safety becomes a value, even the games are safe!"**  
(Felipe Arce - São Paulo Office, photo contest participant)



*"This photo represents how happy it makes me that my grandparents are still alive, who are just like my parents. Every time I see them and know they await at home for the moment I arrive, it makes me think that working safely is the top thing because I want to keep watching out for it for many years."*  
(Karina Ramirez - Lima Office, photo contest participant)



Over the past few years, we have continued to implement and enforce the Golden Rules, which consist of 12 safety maxims that must never be broken, such as seatbelt use, restrictions on cell phone use and prohibition of working under the influence of alcohol and drugs. These standards are key components of our safety processes.

### Golden rules SDG 3.5, 3.9, 8.8

We have adopted 12 golden rules to ensure the safety of our own and outsourced employees, which are based on critical risk standards and other company safety management tools. Failure to comply with any rule may lead to a warning, suspension or even dismissal. The identification of non-compliance with a rule goes through a structured process, with evidence gathering, evaluation and penalty, if applicable.

1. Work at heights requires a fall prevention system and anchoring point
2. Blocking and isolation of power supply for maintenance and cleaning of machines
3. Confined space work performed only by trained and authorized professionals
4. Obligation to use a safety belt for the operation of light vehicles and mobile equipment. Prohibition of cell phone use while driving and respect of speed limits
5. Prohibiting the use of alcohol and drugs on the premises or when working
6. Necessary formal inspection that proves the absence of loose rocks for entry into mining and development work fronts
7. Suspended loads must be inspected, in compliance and released in accordance with the indicated procedures, and the operating area must be isolated or alarm sounded
8. Machine protection can be removed only when equipment is blocked and in a zero energized state
9. Dangerous chemical substances may be handled only with the use of PPEs
10. Every accident must be reported irrespective of its severity
11. Work authorization is required for activities involving critical safety hazards
12. A prior formal risk assessment must be conducted prior to performing any activity



### Peru Safety Plan

Throughout 2018, we advanced and improved the Peru Safety Plan, which is 80% implemented. It consists of eight pillars, 30 projects, 244 initiatives and directly involved 86 persons. The pillars are as follows: Leadership training and awareness; Strengthening of the occupational health and safety team structure; Implementation of the Outsourcing Management Program (*Programa Gestão de Terceiros*); Improvement of wellness and work regime conditions in the units; Standardization of processes and procedures and improvements in Peru's mining units contingency plans. Team training and awareness; Synergy with Digital Mining's actions measures, focusing on Safety; Industrial Automation Master Plan (PDAI), to support risk mitigation. For 2019, actions are planned related to infrastructure and technology.

**80%**  
of the plan implemented

### Safe Behavior Program (Programa Comportamento Seguro)

Employees help each other through a network for observation and feedback meetings regarding group behavior. All of them also receive training focused on safety awareness in the workplace environment.

### Strengthening Alliances (Fortalecendo Alianças)

The program is designed to establish a clear commitment to what is expected of each individual regarding safety, creating a cycle of evaluation from the established agreements. It calls for the eradication of permissiveness, a change of posture, greater team knowledge, closer proximity between leaders and the led, enhanced monitoring of field activities.

Through individual approaches, the behaviors observed and addressed by leaders are registered, formalizing information for the future evaluation cycle and consequences management. The Daily Safety Dialogues are used to develop leadership and share knowledge.

### Preventing fatalities (*Prevenção de Fatalidades*)

Launched in June 2018, the program aims to:

- Establish a continuous process of identification, control and management of hazards and risks with high probability of causing fatalities in operations
- Develop and maintain the commitment of all leaders for the implementation of the fatality prevention program
- Engage all workers in the fatality prevention process
- Ensure unrestricted compliance with the golden rules and critical controls

Each unit has set up a committee to oversee the program, chaired by the general manager. It is responsible for providing strategic direction and promoting visible engagement at all managing levels, assigning fatality prevention responsibilities, discussing the indicators in its meetings with leaders and providing resources needed to resolve situations identified in the program.

The general manager is assisted by the program's guardian, who is responsible for overall coordination and keeping records up to date and available for the team; leadership involvement in nominating representatives and promoting training in the area; and support from the HSE team for classification and systematization of the identified fatality risks. By the end of the year, the booklets produced on the theme had been distributed to both employees and outsourced workers.

### HSE More Talent (*Mais Talento SSMA*)

The program was created to select and develop people with the potential to make the succession process stronger in the company's main areas. Implementing the More Talent program, which mainly involves our health, safety and environment professionals, demonstrates its importance to us.

It is Corporate HSE's responsibility to define the technical training agenda as well as certify its implementation over the course of the program. The unit's HSE area is responsible for assuring its professional management and for monitoring its execution, engaging and ensuring that the strategy is actually put into practice. The local HR is in charge of the selection, admission and monitoring of the professionals, and also is the focal point for doubts, career conversations and overall alignment. The design and structuring of the program is by HR Corporate A&D (Attraction and Development).

Each member has an individual project to develop, defined by the HSE team and related to improvements in the area or in the unit. Each professional involved will be monitored on a regular basis by a local or corporate mentor to support him or her in the development process. Furthermore, there is a project for a broader topic related to area's strategy and business to be fulfilled collectively.

### Outsourced employees' safety GRI 403-7

We make every effort so ensure that outsourced companies implement the same safety culture as practiced by our own employees. Hence, we introduce actions in this regard for the selection and hiring of the strategic partners through to the training of operating professionals and the leadership group for these companies, their activities risk and consequences management programs and the recognition process for companies and professionals that best meet our standards.

In the Peruvian units, 75% of the workforce is comprised of outsourced workers. One of the strengths of safety management in Peru is the strong sense of hierarchy and respect for the managers, which has contributed to the success of leadership training conducted in mining units. In 2018, two training sessions were conducted toward this end, which already have delivered good results: one focused on the leader's role and the other on risk management in the operation.

We also implement more stringent consequences management actions, which consist of regular inspections and constant observations from the field managers. Upon identifying inappropriate and unsafe behavior, we impose fines and may even suspend outsourced companies that do not meet the safety standards.

There are more than 20 safety initiatives underway as part of the Outsourcing Management Program, such as control of access to our facilities and the plant integration process, with training that aims to standardize individual and collective procedures.

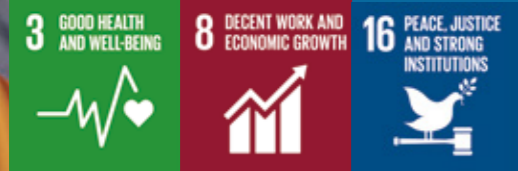
To align consequences management expectations, we organized a meeting in Lima with the owners and managers of outsourced companies for a frank dialogue about how to make operations safer. It was an important time both to learn about these companies' problems and to understand their realities, and to share our concerns about safety.

**Material topic**  
**Safety and health**

GRI 103-2, 103-3 SDG 3.4, 3.5, 3.9, 8.8, 16.7



**1. RESPECT**



**Occupational health**

Target	2018	Form of measurement
Implement health promotion actions in 50% of the local communities where Nexa is located, by 2025. Base year 2018	10%	Percentage of annual implementation of the activities in the units.

In addition to providing adequate working conditions for its employees and others, we believe that an organization must provide an environment where people can perform their professional activities with quality and balance in all aspects of their life. The main objective of wellness and quality of life actions is to encourage healthy habits, improve the organizational climate, promote the attraction and retention of our teams and influence creativity, while also guaranteeing operational continuity and productivity. To achieve this, we seek to be recognized as a quality workplace benchmark company.

With this in mind, we consolidated the Better Living Program (Programa Viver Melhor), established in 2017 and based on the World Health Organization's Quality of Life (WHOQOL) plan. Six pillars support the program: Physical, Psychological, Environment, Interpersonal Relations,

Independence and Spirituality. In 2018, all units implemented actions to stimulate healthy eating, the practice of physical activities and improvement of the working environment, with high employee acceptance levels. The actions were designed according to the reality and needs of the organization and divided into two types of initiatives: institutional and local. Institutional actions are those employed in all units, while local actions are related to the specific demands and needs of each unit. **GRI 403-6 SDG 3.4**

As examples of actions, we have the The One Who Loses Wins (Quem Perde Ganha), Vazante, and Reto a la Balanza (Directly to the Scale), in Cajamarquilla, which were set up to encourage adoption of a healthy lifestyle. At the Pasco and Cerro Lindo Complex, we kicked off the Habitability Plan, focusing on the comfort, wellness and quality of life of our own and outsourced employees.

In Pasco, the actions included the construction of the central kitchen at El Porvenir, refurbishment of the refectory, hiring of a nutritionist responsible for orienting employees regarding healthy eating habits, remodeling and adaptation of housing and hygiene service structures (bathrooms, toilets and locker rooms). For Cerro Lindo, the actions included renovation and expansion of housing, adequate hygiene services, installation of workout gyms and leisure areas in all accommodation areas and revamping of common areas. Also notable was the cleanup campaign at Cajamarquilla, which sought to prevent metabolic syndrome and promote healthy habits of employees; the program was a finalist in the 2018 Recognition Program.

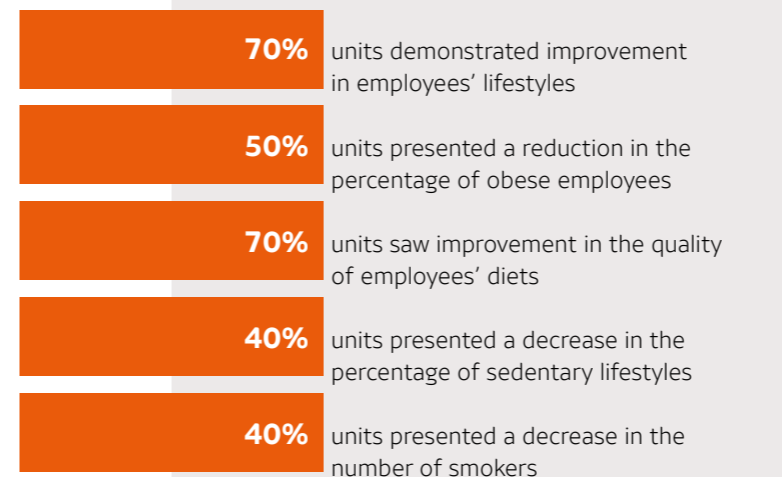
We continue to strengthen the shared Occupational Health and Hygiene model to ensure correct management of the potential risks of occupational diseases. With this, we seek to boost the effectiveness of our actions, with a focus on risk mitigation, shared knowledge and responsibilities about preventive methods and practices for all employees. In 2018, we also conducted an in-house assessment of occupational health and hygiene processes in all units, aiming to achieve legal and technical compliance and alignment with the Corporate Occupational Health and Hygiene policy. The result was a plan with local and corporate actions for the improvement process. **GRI 403-3**



The program's governance is through the Corporate Quality of Life Committee, composed of Health and Safety, DHO, Corporate Communication and unit representatives, selected by each local committee. The corporate committee defines the guidelines and actions that must be implemented in all units. The local quality of life committees are responsible for implementing the corporate and local actions according to the demands of the plants and contribute to the preparation of a plan that has been adapted to the different realities. **GRI 403-4 SDG 16.7**

In 2019, our objective is to establish indicators to evaluate the effectiveness of the actions, as well as implementation of actions in the physical pillar in the communities.

**Living better results**

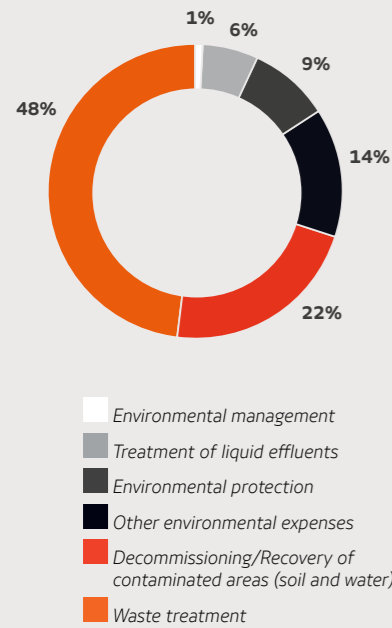


**Housing Plan** **SDG 8.8**

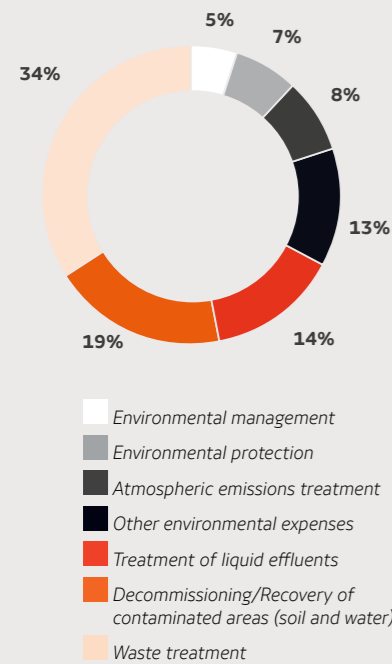
The main highlight in the period was the implementation of the Housing Plan, involving an investment of US\$ 1.76 million and an estimated budget of US\$ 9.6 million for 2019. After visiting all the mining units in Peru, the corporate HSO team conducted a diagnosis of housing conditions, food services (kitchens, restaurants and cafeterias) and hygiene (toilets, lockers and laundries) for the workers in the units. The outcome was a plan containing short-, medium- and long-term implementation actions to improve the quality of life, well-being and comfort of our own and outsourced employees. Once the most basic and urgent problems were solved, other adjustments were scheduled, including the expansion and construction of new housing, which began in 2018 and is expected to be completed by 2020. The Brazilian units, which are more advanced in this matter, will be the target in the future of a survey regarding habitability conditions.



**Environmental investment (Capex)** GRI 103-2



**Environmental Spending (Capex e Opex)** GRI 103-2



# Environment

## Management model

We value responsible action, preventing impacts to the environment and the conscientious use of natural resources. We want to be eco-efficient: that is, to produce more and produce it better, using fewer resources and generating less waste. We seek the best environmental performance possible, whether in our administrative centers, mines or smelters. Our environmental goals are:

- 75% of recirculation and lower specific use of water;
- Reduce the specific emission of greenhouse gases by 5%;
- Decrease the disposal of tailings in dams and reduce, by 50%, the specific generation of mining and smelting waste;
- Ensure that 100% of the units have prepared a future-use alternative study and an updated decommissioning plan, in line with the sector's benchmarks.

We use a combined management system based on an Integrated Policy that establishes the guidelines that govern the conduct of the businesses, with a focus on quality management of environmental, health and workplace safety and social responsibility matters. In addition, we strictly respect all environmental laws and regulations pertaining to our business in each country where we operate. [SDG 13.2](#)

All of our operating units are ISO 14001 certified and, thus, follow globally recognized systems and compliance standards that support the effort to meet our targets. Annually, each unit undergoes an assessment of compliance with legislation and environmental commitments, conducted by outside specialists. In a two-year cycle, the Unit's Environmental Management System is audited internally and a self-assessment is conducted each year to identify improvement opportunities. [GRI 102-11](#)

## Environmental investments

We invested in diverse programs that address climate change actions to reduce carbon emissions, lower energy consumption and optimize water use. We sought opportunities to be more eco-efficient, betting on innovative projects (see more about Innovation on page 39), which led to improvements in equipment and processes and delivered significant environmental gains.

In 2018, investments in the environment totaled US\$ 95.1 million, 54.5% higher than in 2017. Of this total, 34% was for waste disposal, 14% went toward effluent treatments and 7% was earmarked for environmental prevention.

## Material topic Waste

GRI 103-1, 103-2, 103-3 | SDG 9.4, 12.4, 12.5



Target	2016	2017 <sup>17</sup>	2018	Form of measurement
Reduce 50% of the specific quantity of mining-smelting waste generated (calculated by the tonne of generated waste/tonne of product) and/or sent to landfills Base Year: 2014	8.78	10.07	10.59	Total wastes generated and disposed of (dams, tailings deposits, mine interiors, batteries, etc.) per tonne of product.
Reduce total specific waste generation (tonne waste/tonne of product) Base Year: 2014	8.80	10.34	10.61	Total waste generated (mining-smelting + industrial) per tonne of product

<sup>17</sup> 2017 data recalculated as a result of adjustments in calculation form [GRI 102-48](#)

Aware of our responsibility for solid waste generation impacts, we go beyond the regulatory requirements, investing in research and development of new technologies that allow us to reduce the amount of waste generated or turn them into secondary products for use in other industries.

One of the focal points of the research in the year was the project to recover barite as a residue from the zinc mining process in Cerro Lindo. Tests carried out in 2018 resulted in the production of high purity and density barite; we are now planning to build a processing plant in 2019 (*more information in the Innovation and Technology chapter*).

We positioned our Juiz de Fora plant as a materials recycler. Currently, 24% of the production derives from secondary (recycled) materials, composed of PAE (19.8%), brass oxide (0.3%), imported Waelz oxide (0.3%), batteries (0.02%) and low-grade silicate (0.44%). Our strategic mandate foresees raising this percentage to 33% by 2023 and 40% by 2025.

The Morro Agudo mine's project for agricultural limestone production was continued, with a 22% increase in the output of Zincal200, created from what was previously the residue generated in the beneficiation process for zinc deposit dams. For production of Zincal200, we made modifications in the process, making it possible to produce a zinc-rich agricultural corrective. Thus, in addition to correcting the acidity, our limestone also increases soil productivity thanks to the presence of zinc in the composition. This by-product now represents revenue of US\$ 7.4 million (or 12% of unit's output). But its biggest benefit is the fact that it eliminates the need to build new containment structures, which means both environmental and economic gains. **GRI 102-2**

In Vazante, we entered into a partnership with the Edital Senai Inovação to transform residual cadmium and lead from the operation into secondary products through leaching, calcination and flotation routes, or through a combination of transformation tracks. The tests are expected to be completed in the first half of 2019.

And in the Mining Lab 2 program, we also selected a startup with the focus on evaluating the potential of smelter tailings conversion into vitroc ceramic products. This project is in the initial (bench) phase and will be continued throughout 2019.

In 2018, our operations generated a total of 19.2 million tonnes of mining and smelting waste, of which 67.7% was hazardous and 32.3% was non-hazardous – an increase of 14.1% over the results of 2017. **GRI MM3**

**Waste volume (thousand tonnes)** **GRI 306-2, MM3**

	2016	2017 <sup>18</sup>	2018	
Hazardous	Mineral-smelting waste (Sterile)	1,746.99	1,704.91	2,357.12
	Mineral- smelting waste (Tailings)	9,871.85	9,661.73	10,670.60
	Industrial wastes	2.90	3.28	3.01
Non-Hazardous	Mineral- smelting waste (Sterile)	5,458.25	4,539.25	5,209.27
	Mineral-metallurgical waste (Tailings)	1,038.24	958.88	1,012.58
	Industrial wastes	13.96	16.08	15.57

<sup>18</sup> Revised 2017 data due to adjustments in calculation form. **GRI 102-48**

**Battery recycling**

**SDG 9.4**

About 700 million batteries are consumed annually in Brazil, which corresponds to 2,100 tonnes of zinc metal. The incorrect disposal of this material is harmful to the environment and to people's health and any initiative for recovery of materials contained in the batteries and the correct destination of the tailings is welcome.

We have received at our unit in Juiz de Fora the batteries collected by Green Electron – Manager for Reverse Logistics of Electrical and Electronic Equipment, founded in 2016 by the Brazilian Association of the National Electronics and Electrical Industry (Abinee).

Our consumption is still restricted, with treatment of only 1% of the zinc contained in piles (or 76 tonnes). However, we have been studying ways to extend the use of batteries in our production. By 2019, our goal is to double our funding to recycle about 200 tonnes of batteries. The slag from the furnace where the pile is processed is destined for the cement industry, closing the recycling cycle.

**Management of dams and tailings deposits**

The management of dams and tailings deposits is one of the main risks associated with the mining activity. In order to control and monitor our 46 dams and tailings deposits (22 in Brazil and 24 in Peru), we apply guidelines from the International Commission on Large Dams.

Currently, we use three methods of waste disposal in our operations: dams, dry stacking and return to the mine, filling the spaces from which the mineral was withdrawn (backfill). For all methods of control and monitoring we follow the laws in force in each country where we operate.

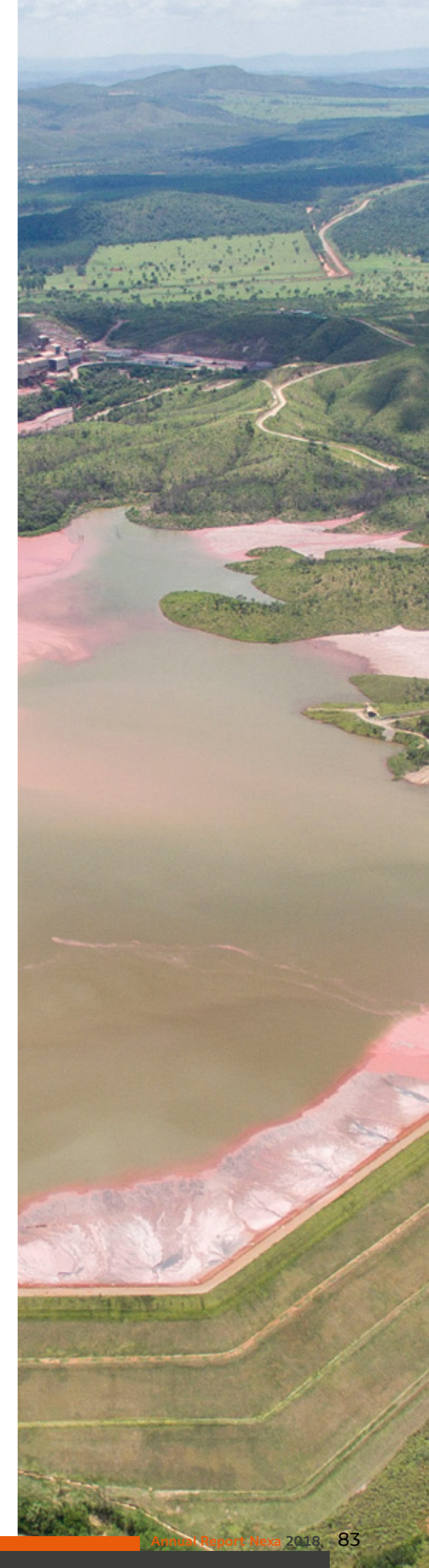
Some operations may combine one or more disposal methods. In the Atacocha, El Porvenir and Cerro Lindo units in Peru, we adopted the backfill system, whereby 38% of the wastes return to the Pasco Complex mines (Atacocha and El Porvenir) and 48.7% to the Cerro Lindo mine, in which part of the residue is filtered, separating water and solids. The water is recirculated and the filtered waste is sent to the piles to be compacted. This same model is being considered in new projects in Brazil (Aripuanã and Caçapava do Sul).

We started the filtered tailings disposal project at the Vazante mine, which was granted an installation license in 2017. With an investment of US\$ 122 million, by 2020, the unit will use the dry stacking method, which reduces environmental impacts and risks to the operation.

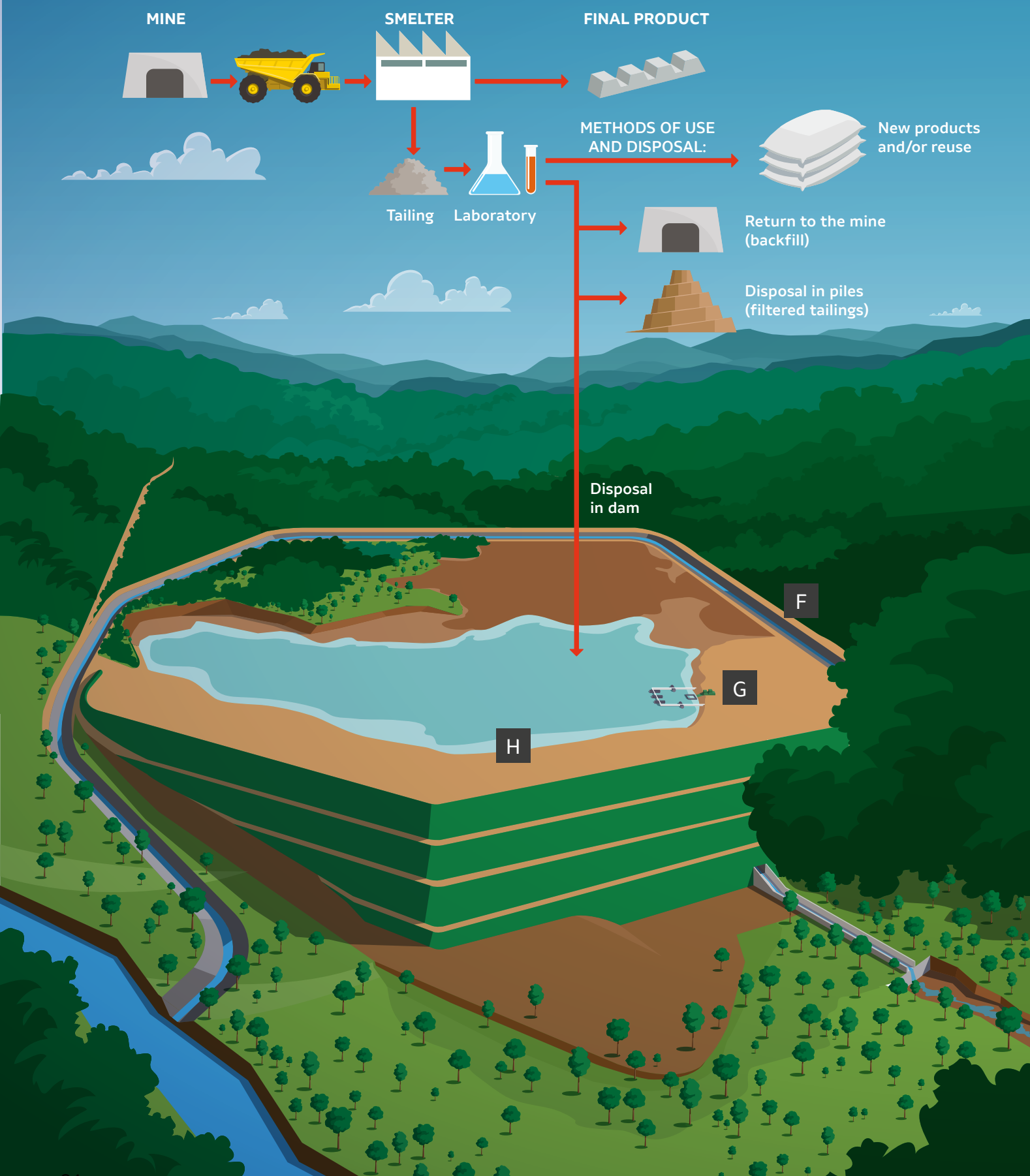
Dam management is one of the topics included in our business risk management processes and regularly discussed at executive meetings, where reports are presented on the stability of these structures. We have processes and procedures that form the Integrated Dam Management System (SIGBar) and an Integrated Deposits Management System (SIGDep). These two systems are composed of 12 modules that establish rules and measures for regular monitoring actions, from which we control all the structures. SIGBar sets out guidelines for document management, monitoring, evaluation, risk analysis, compliance with standards and legislation, training of personnel, operation of structures and other provisions.

This work is permanently monitored by an independent company, which receives data from biweekly inspections and monthly consolidates data from all monitoring operations to issue stability reports. In 2018, the structures that were inactive were inserted into SIGBar so that we could carry out the monitoring in an effective and safe way.

In 2019, we plan to install the siren system in all units in Brazil and Peru. The amount of sirens required in each locality depends on the topography of the site and the self-rescue zone characterized in each facility's Emergency Response Plan (ERP). After the installation of the sirens, simulations will be carried out with the local communities.

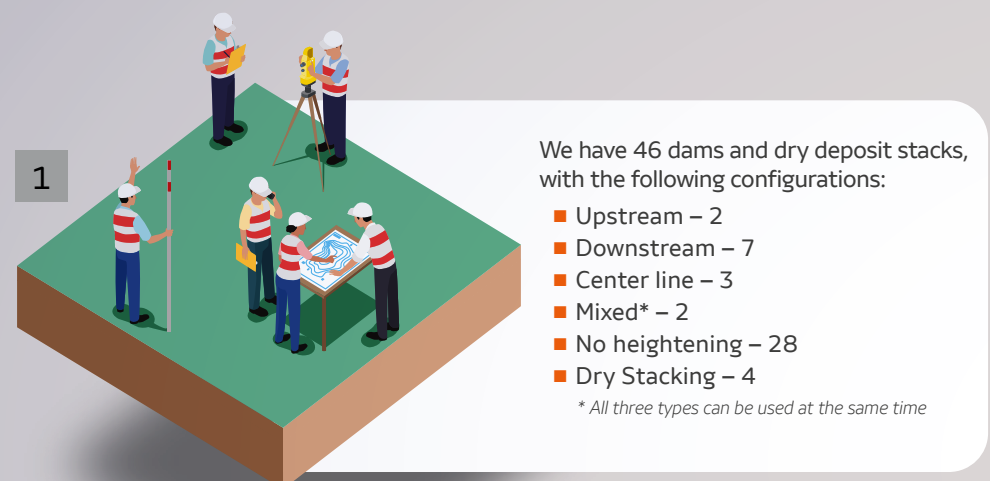


OUR PRIORITY IS TO TURN TAILINGS INTO PRODUCTS. AND SO WE CONSTANTLY STUDY THE WASTE AND VERIFY ITS CHARACTERISTICS AND POTENTIAL USAGE.



### 1 PROJECT

Important moment when all the assumptions and the necessary controls are defined and the rupture scenarios are evaluated. The project goes through the conceptual, basic and detailed/executive engineering phases. In the conceptual phase, a cross check is performed by an independent company that evaluates the way we are designing the dam from a different point of view. Then, we model a hypothetical rupture and identify the Self Rescue Zone (SRZ - the area where, in an emergency, the local population must know in advance where the safe refuge points are located to head to them autonomously, since it is understood that there will be no time for a Civil Defense response).

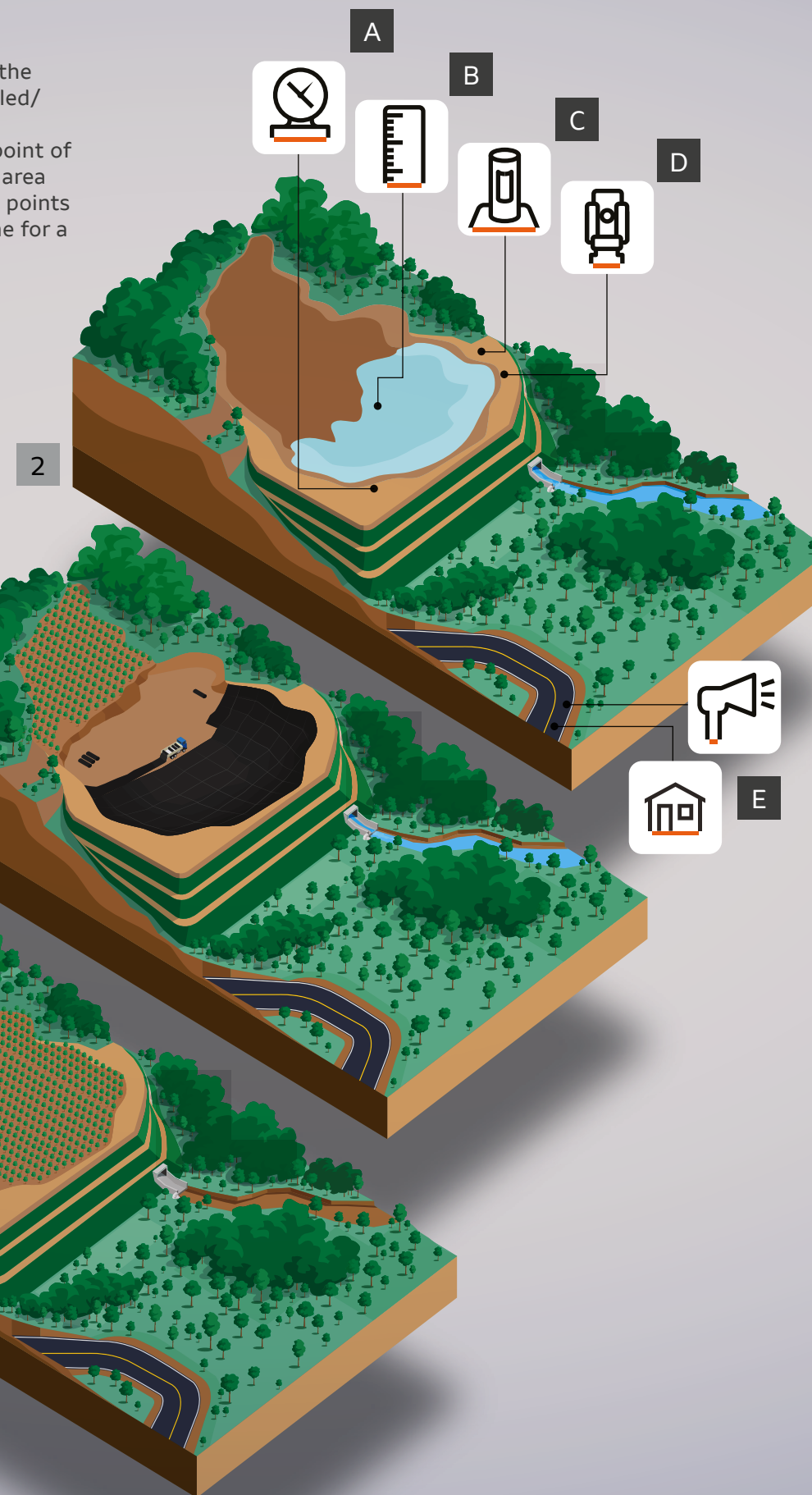


### CONSTRUCTION

A dam's construction can be planned in a single stage (initial barrier), or in phases (heightening), occurring in three ways:

- I Upstream:** the heightening is carried out on top of the tailings and the axis of the dam is moved upstream of the initial axis
- II Downstream:** heightening moves to the downstream initial axis
- III Center line:** the heightening is built above the initial barrier, maintaining the axis aligned with the initial axis.

To determine the best way to conduct the heightening process, we use the recommendations of international guidelines such as the International Large Dam Commission (ICOLD), the Canadian Dam Association (CDA) and legal requirements. We believe that quality control and construction supervision should be priorities throughout the construction work, to ensure that it is completed according to the project design requirements.



### 2 OPERATION, MAINTENANCE AND MONITORING

The safety of the structure also depends on the operating phase. Each structure has an operating manual prepared by the design company, containing information on the layout of the material inside the dam, controls and data on main and auxiliary structure maintenance. We maintain a regular inspection and monitoring schedule:

- Field inspections every 15 days;
- Data collection from the monitoring instruments, at least monthly;
- Transmission of the data to an external expert who interprets our data and issues a monthly report;
- Dams visits by a specialist and issuance of stability report of the structure, twice a year;
- Reports on the dams' histories are issued annually.

### Monitoring and controls

Instruments for monitoring, controlling factors and the level of water in the reservoir and to ensure the stability of the solid residue body

- A Inclinometer** – Measures through the inclination angles and movement of the dam
- B Graduated scale** – Instrument with a scale of values to measure the water level disposed in the dams.
- C Piezometer** – Measures the pressure and the presence of water at a certain depth, either the dam itself or at its foundation.
- D Surface markings** – They serve to monitor the vertical and horizontal displacements of the dam, from a point reference adopted from precise topographical measurements.
- E Emergency siren** – Alert the community in case of emergency
- F Ring channel** – External drainage so that adjacent water does not enter the dam's area.
- G Spillway system** – Concrete or channel structure excavated in soil, coated or not, where excess water from the reservoir is discharged into the natural drainage areas.
- H Beach of the dam** – Topographic landmark, Seismograph, Visual inspection (Cracks, vegetation, etc.)

### 3 DECOMMISSIONING

All our units have prepared future use studies of the directly impacted areas, based on risk criteria. Dam closures are determined based on these studies. The structure is deactivated when it reaches the limit of its useful life and undergoes the decommissioning process. Even after this step, we continue the monitoring process according to the specific control needs.

# Material topic Water

GRI 103-2, 103-3 | SDG 6.a, 9.4



7. ASSUME



8. DEVELOP



9. PROMOTE



Target	2016	2017	2018	Form of measurement
Increase water recirculation to 75% Base Year: 2014	67%	66%	66%	% of recirculation based on total water used by the company
Reduce the specific use of new water (m <sup>3</sup> new water/tonne of products) Base Year: 2014	31.59	31.00	28.00	Sum of all new water collected and used by the company, including surface runoff, rain, mine lowering, etc. per tonne of product

Water is an issue of fundamental importance in the global context and also for our operations and, therefore, is one of the material topics that make up our Sustainability Master Plan. For the management of the topic, we have guidelines for the sustainable use of the resource and goals for continuous improvement. Our intention is to achieve, by 2025, a percentage of 75% of recirculation and to reduce the specific use of new water in all operations.

In Cerro Lindo, for example, all the water used comes from recirculation or from the sea - the recirculation index is approximately 90%. Despite being at 2,200 meters altitude, the unit is able to use ocean water because it has a desalination plant, which lets it extract the salt by a process of reverse osmosis and to pump it for a distance of 60 kilometers until the operation. This initiative, pioneered in Peru in the mining sector, represents an important solution to this arid region. We also work with the population to advise on how to store rainwater. **GRI 303-1 | SDG 6.4**

In Vazante, the water treatment of thickeners is currently under study, to be disposed together with the tailings in the Aroeira dam. The proposed technology is to treat the supernatant, so as to recirculate water back into the process.

In 2018, under the Mining Lab program, startups were also selected to optimize the line of studies focused on recirculation. Examples are the process with the potential to treat calcium and magnesium sulfates by means of electrocoagulation and enable the recirculation of water/effluent in the smelter's units; and the development of new biofloculants capable of optimizing current effluent treatment systems in the smelter and mining unit.

## Water management **GRI 303-2**

In addition to the challenge for current operations, the new projects also come into being with a different approach to water resources management, focusing on recirculation, where all projects are obliged to start operations with at least a 75% rate, as is the case of Aripuanã.

Within the framework of the guidelines for water management, of particular note were the development of tools to monitor the water balance of the units, the analysis of water use accounting on a regular and preventive basis and the identification of the local water risk to define control, mitigation or contingency.

As a follow-up, initiatives were also developed to elevate recirculation and reduce water abstraction, and a Measurement Master Plan was prepared to optimize water outflow measurements for all units.

Based on the goals to be achieved by 2025, the indicators of percentage of recirculation and specific use of new water (m<sup>3</sup>/t) are being followed systematically in a corporate database, integrated for the entire company in 2018.

In 2018, we maintained the percentage of water recirculation at 66%, which considers the total volume of water recirculated in relation to all the water used in the process, reducing the specific use of new water to 28 m<sup>3</sup>/t. Moreover, our water metering master plan initiatives progressed.

We also diagnosed the basic sanitation conditions, focusing on access to drinking water and collection/treatment of domestic sewage, in the municipalities where we have operations in Brazil and Peru. The objective of the diagnosis was to map strategies for an action plan designed to meet the SDG 6 targets (Drinking water and sanitation).



### Forums

In order to increase sustainable water use, corporate and operational teams participated in the 8th World Water Forum, the world's largest water event that was, held for the first time in Brazil (in Brasilia).

We participated as lecturers at the IV Latin American Forum of Engineering and Sustainability, promoted by the Federal University of Tocantins (UFT), an event involving more than one thousand students from Brazil and Latin America. We addressed the importance of the standardization of indicators and risk assessment for the management of water resources in mining and smelting enterprises. We believe our participation was relevant for the integration of technical-scientific knowledge and to bring a practical vision of what an environment engineer does to the students.

### Water Capture by Vazante SDG 11.6, 15.1

We are undergoing a period of attention in the Vazante region, not only due to the reduction of rainfall volume in the Santa Catarina River basin, at the lowest level in the last decades, but also because of the dolination phenomenon, which are depressions with characteristic occurrence in karstic soils (rich in limestone). Therefore, we routinely monitor the flow of the Santa Catarina River, conduct piezometric monitoring and we prepared a dolomitic risk management plan. We also support the study being carried out by the Technological Research Institute (TRI) to evaluate the impact of river drainage in the region, work designated by the Public Prosecutor's Office due to a Term of Commitment we signed.

Because the Santa Catarina River represents one of the main water courses in the region, the Vazante Unit also initiated a major project designed to recover the headwater region of the river, which covers an area of 50 thousand hectares and contains 134 springs.

The works were started in May 2018, with a diagnosis of the hydrographic basin through preliminary surveys of its borders, access roads, registry of springs and local properties, state of conservation of the springs and a photographic inventory.

The project's initial duration is five years, involving the construction of approximately 114 kilometers of fences to protect the springs and the installation of 26 flow monitoring points. In stage 1 (2018/2019), we prioritized the recovery of four streams forming the Guariroba Stream, one of the main Santa Catarina River tributaries, with the construction of approximately 6.2 kilometers of fences and the installation of a flow monitoring point.

### River Day GRI 303-1

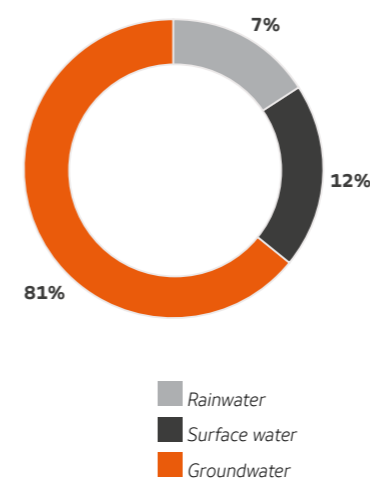
Due to the low levels of water reservoirs in Brazil, the National Water Agency (ANA) proposed an emergency action to suspend one day's catchment in the São Francisco River, named River Day, which occurred from January to November 2018. We presented the agency with an alternative idea: to replace the weekly shutdowns with a 14% reduction in water capture during the month, with additional social and environmental actions. Immediate reduction was 10%, with an additional reduction of 4% over 60 days. Thus, the Três Marias unit reached an average reduction of 24.36% of water captured from the river, from 530 m<sup>3</sup>/h to 401 m<sup>3</sup>/h.

A number of internal and external actions were taken to reach this level of reduction, among them:

- Increased water recirculation during the zinc filtration step;
- Maintenance to eliminate leaks in the production areas;
- Installation of flow-reducing nozzles in hoses used for cleaning purposes;
- Change in periodicity (from fortnightly to monthly) for cleaning the administrative offices with hoses;
- Water blitz, to map the points of waste;
- Guided tours for schools and the local community, with the distribution of a booklet containing water-saving tips;
- Awareness raising on websites, radio shows and newspapers about the topic.



### Use of water by source GRI 303-3



### Disposal SDG 6.3

An efficient water recirculation program contributes to ensuring not only less fresh water intake but also lower effluent volumes, thus reducing both the risk of an adverse impact on the environment as well as the cost of effluent treatment. Such wastewater should only be discarded after a suitable treatment that guarantees all the required quality parameters. During the year, we allocated 14.8% of the environmental expenses for the treatment of effluents.

# Material topic Emissions and energy

GRI 103-1, 103-2, 103-3 | SDG 11.6, 13.2



7. ASSUME



8. DEVELOP



9. PROMOTE



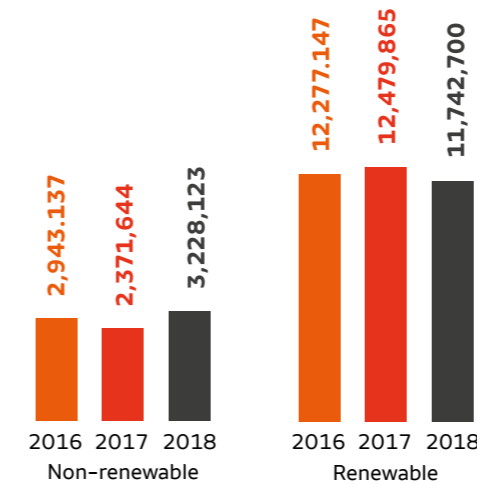
To reduce GHG emissions in operations and logistics, we signed contracts with startups selected through the Mining Lab program to develop solutions to reduce diesel consumption in equipment and its replacement with biodiesel (more details in Innovation and Technology, page 39).

## Energy consumption

The consumption of thermal energy in our operations for the year totaled 14,970,823 GJ, an increase of 0.1% compared to 2017, of which 11,742,700 were from renewable sources. This proportion particularly reflects the Brazilian and Peruvian electric power matrixes, since both of their bases use a higher share of water sources.

In the year, electricity generation represented 19% of the total consumed. Cogeneration is used for steam boilers and generation in power plants and small hydropower projects, managed by Votorantim Energia (which serves Votorantim S.A.'s subsidiaries and also outside clients). [GRI 302-1](#)

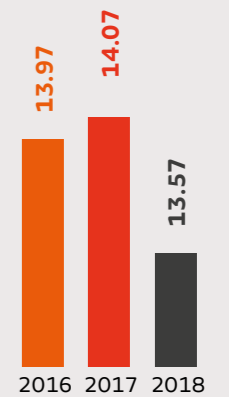
## Energy consumption inside and outside the organization [GRI 302-1, 302-2](#)



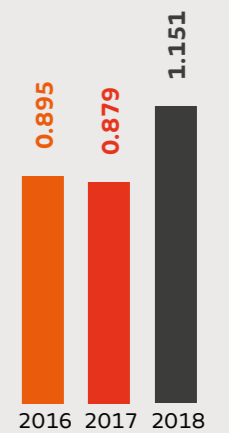
## Atmospheric emissions

For the year, the greenhouse gases (GHG) from our operations totaled 1,269,670 tCO<sub>2</sub>e, 37% more than the previous year due to an increase of ore production and transportation. Emissions from electricity consumption (Scope 2) accounted for 46% of the total and indirect emissions (Scope 3) totaled 30,661 tCO<sub>2</sub>e. The emission intensity raised to 1.15 tCO<sub>2</sub>e per tonne of zinc produced. [GRI 305-1, 305-2, 305-3, 305-4](#)

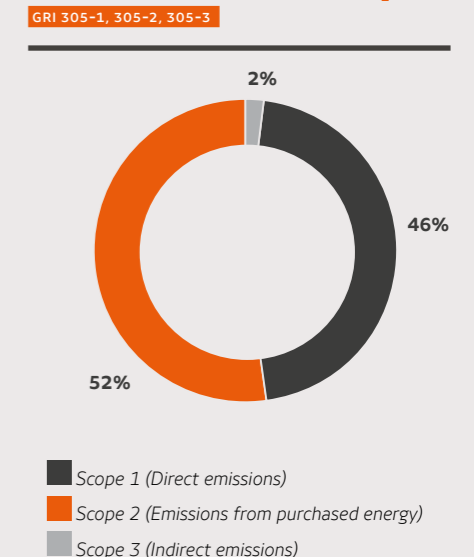
## Energy intensity GJ/ton [GRI 302-3](#)



## Intensity of GHG emissions (tCO<sub>2</sub>e/t) [GRI 305-4](#)



## Greenhouse gas emissions (tCO<sub>2</sub>e) [GRI 305-1, 305-2, 305-3](#)



Target	2016	2017	2018	Form of measurement
Reduce the emission of greenhouse gases (GHG) per ton of product by 5%. Base Year: 2014	0.895	0.879	1.151	Tonnes of carbon equivalent (tCO <sub>2</sub> e)/ tonne of product

Aware that intense climate variations can adversely affect our operations, delay timetables and raise operating costs, among other business risks, we remain committed to the topic and set goals to strengthen a low-carbon economy and build an increasingly sustainable society.

We aim to reduce greenhouse gas (GHG) emissions by 5% per tonne of product by 2025. Toward this goal, since 2017 we have put into operation a biomass boiler at the Três Marias unit, replacing boilers fueled by petroleum-derived fuel oil, which allowed us to save US\$ 5.2 million per year, reducing greenhouse gases emissions by 30% and lowering the cost of steam production by 35%. The structure uses eucalyptus wood chips and/or bagasse produced in the region as fuel. The next step is to introduce the biomass into the unit's operation for steam production. This model, proved efficient in Três Marias and next should be deployed at the Juiz de Fora unit. [SDG 7.2, 9.4, 12.2](#)

Another important initiative is underway at the Cajamarquilla unit in Peru: the substitution of diesel oil with natural gas, made possible through the implementation of a gas pipeline in the region. Installation began in 2018 and operations will begin in 2019, reducing the plant's emissions and fuel costs.

**Material topic**  
**Local development**

GRI 103-2, 103-3



**1. RESPECT**



**4. ELIMINATE**



**5. ERRADICATE**



Target	2015 e 2016	2017	2018	Form of measurement
Achieve 90% efficiency in Local Development Plans (LDP)	Characterization for Três Marias, Vazante, Morro Agudo and Fortaleza de Minas, Juiz de Fora, Aripuanã, Caçapava and Cajamarquilla	Local Development Plan (LDP) for 100% of the units in Brazil: Ambrosia, Fortaleza de Minas, Juiz de Fora, Morro Agudo, Três Marias and Vazante	Socio-economic Integrated Plan for Aripuanã (ISP); adaptation of the investment portfolio (social projects) of the Brazilian units to the LDPs; socioeconomic characterizations built for Cerro Lindo and Magistral, and the social agenda pilot in Peru (Cajamarquilla); construction of the strategic axes for Nexa's social projects	Percentage of compliance with each unit's Development Plan

For us, being trustworthy and socially intelligent means being able to co-create a positive and structured legacy for the communities impacted by our operations. We achieve this goal through a good relationship with society, promoting positive transformations for local development in a harmonious environment, based on respect and empathy.

Promoting local development means implementing local actions or the localized micro-regions surrounding our businesses that allow for social inclusion, strengthening and diversification of the local economy, improvement and innovation in public policies, environmental protection and rational use of natural resources, social mobilization, infrastructure and public facilities.

With this in mind, we developed a social strategy that began with social characterization, was built through the dialogue established in the social agenda and resulted in Local Development Plans (LDPs) for each region. This process of understanding the needs of each locality and interacting with social actors has been conducted since 2015. This has made it possible to pay attention to listen to the demands of the communities, swap knowledge, list material topics and to establish priorities for action.

Subsequent to this process, the synergies and connections between the LDPs enabled us to establish Nexa's four strategic axes that guide our social projects portfolio starting in 2018: Local Economic Development, Public Management and Social Participation, Socio-Environmental, Childhood and Youth Aspects. For 2019, our projects portfolio was adjusted to meet this new strategy, both in Brazil and Peru.

**Social Investment** GRI 413-1 SDG 4.4, 8.6, 10.2

In 2018, our social investment with own, incentive and outside funding totaled US\$ 10.4 million. The decline from the US\$ 14.6 million allocated in 2017 was mainly due to the difficulty of approving projects through the Peruvian government's "Works for Taxes" counterparty program for social initiatives. Of the nearly US\$ 7 million budgeted for incentive projects, only US\$ 1.1 million was invested in the year. GRI 203-1

We sponsored in 2018 a total of 193 projects in 17 locations in Brazil and Peru, benefiting more than 29 thousand people. The projects are structured according to the four strategic axes.

**Local Economic Development Axis**

We want to contribute to the sustainable economic development of the territories, through the enhancement of their local resources, the qualification of people and environmental protection.

**Fisheries and Tourism Plan** SDG 8.9, 12.B, 14.7

The Social Agenda in 2018 for Três Marias identified the demand for tourism planning in the community of Beira Rio, which already has a tourist flow directed to the practice of sport fishing and other nautical and leisure activities. Tourism is one of the economic development alternatives for the region, especially that linked to the fishing segment, but still lacks planning and structuring. The project aims to value and develop tourism in the region, with emphasis on tourism and sport fishing, positively impacting the local economy and environmental preservation.

In order to help promote the destination as a relevant option for visitors, we have partnered with Turismo 360 and mapped the entire tourism and fishing chain in the area, building the Tourism and Fisheries Sector Plan and its implementation strategy. The preparation of the plan was conducted using a participatory approach, based on four workshops attended by more than 50 local representatives. The actions were detailed and validated together with the participants.

As a result of the survey, 148 fishermen in the Beira Rio neighborhood were identified: 82% men and 18% women. Of these, 64 have other sources of income, acting in tourism or as fishing guides. Cultural, environmental and food attractions of the neighborhood and surroundings areas also were identified, which can be helped by the plan.

**Asfaz Hands that Germinate Project**

This project was created within the strategy to stimulate the economic autonomy of Três Marias, expanding job opportunities for its inhabitants and promoting efforts to improve pesticide-free vegetable production and sale of the products to the community in general. The project benefits the Community Farm Association (Asfaz), made up of 40 families that have joined due to social vulnerability issues, seeking new opportunities for reinsertion into the market and the community. This work involves actions both to boost the productivity of greenhouses (10 built in 2017 and four new ones in 2018),



as well as to train farmers in dealing with administrative and commercial questions. One example was the adoption of agronomic markings, which led to a more than 20% improvement in production and loss management results. Also important were customer service training, management training and consulting sessions for the joint preparation of the association's Commercial Plan.

#### Entrepreneurship and new business

Our intention is to promote more self-employment opportunities for young people, women and individuals in greater vulnerability through entrepreneurial actions. With the intervention in 2018, we expect to see an average 27% improvement in the profitability of the companies supported by the project. We followed 165 existing businesses (El Porvenir, Cajamarquilla, Shalipayco and Magistral) and promoted the opening of four new businesses. In the period covered in the report, 695 persons were trained (of which 600 were women) and 37 business plans were prepared.

#### Public Management and Social Participation Axis

In this strategic area, our objective is to stimulate social participation, strengthening citizenship and a pro-active civil society while also encouraging improved public sector management. The final goal is more effective public policy development. We highlight below some of the projects during the period:

##### Program to support public management - integrated solid waste management work front

SDG 11.6

We supported the city of Vazante regarding the creation of an Integrated Solid Waste Management Plan (PGIRS), adopting participatory methodology. The project helped us guarantee mechanisms for participation and social control through the creation of a Steering Committee (with a Nexa representative), a Support Group (political involvement group) and community meetings (seven in total), public consultation and a public hearing attended by 244 people. During the event, held at the end of 2018, the process for preparation of the plan and the actions necessary to address the problems identified in the diagnosis

were presented. Among the definitions was the expansion of solid waste collection in the region, currently standing at 2.65 tons/day. In the first two years (2019-2020), the goal is to increase collections by 1.2 tons/day, which will be possible by raising the population's awareness of the issue and the inclusion and training of the collectors. The project also is linked to the Socio-environmental axis.

##### Program to support public management - health modernization front

We support the city of Santana da Boa Vista (RS) through a project designed to help the municipality achieve financial equilibrium, with the objective being to monitor the spending targets established in 2017. The development of financial management with emphasis on collections and improvement of investment capacity together with a project aimed at the efficiency of the municipal health system were the main demand identified in the municipality. This was established through management software and training in the cost control and revenue collection increase methodology, along with a health efficiency measure.

#### Social Agenda - community participation group

The Social Agenda was established in 2015, based on a social description of the regions in which we operate and full dialogue with all players. As early as 2018, we stimulated social mobilization through workshops conducted from the LDP content. Four meetings were held in each of Nexa's work areas in Brazil (Juiz de Fora, Vazante, Morro Agudo and Três Marias). These meetings led to discussions of solutions and chains of action in the project formats. The results were summarized in pre-project social registries, to be carried out in 2019. This process was of paramount importance for construction of social projects for the areas in question.

#### Socio-Environmental Axis

We aim to contribute to improving the availability and quality of water, solid waste management and environmental health conditions.

#### Production and sustainable use of water SDG 6.A

This project seeks to contribute to the improvement of water availability for the family farmers of Morro Agudo through the conservation and protection of springs and riparian forests, orderly capture and rational use of water in agricultural production. After an environmental diagnosis conducted in 2018, the actions for preservation and conservation of water sources and riparian forests will begin. At this stage, areas that are in compliance with environmental legislation will be protected by smooth wire fences, while the others are converted into Degraded Area Recovery Projects (PRAD).

#### Good Rural Practices Project

The Morro Agudo Good Rural Practices Project in Paracatu (MG) was designed to promote agricultural and environmental technical assistance for farmers in the rural region of Morro Agudo. It is a project for awareness-raising and mobilization to improve the productive processes in the field and environmentally correct deforestation practices in a Permanent Preservation Area (PPA), for waste disposal, sewage treatment and environmental education focused on the preservation of water source springs. In all, 30 farmers are assisted by the project.

#### Safe Water

The objective is to contribute to increased access to drinking water and sanitation for communities in the vicinity of our operations in Peru. In 2018, 2,215 households received drinking water, 365 homes were connected to adequate sanitation systems, four water systems were improved, and 12 JASS (Management and Sanitation Services Administration) operations were formalized and placed into operation. In addition, three water system registries were prepared.

#### Infancy and Youth Axis

Our mission is to contribute to the social development of children and young people, to make them protagonists and social participants, in addition to being trained and qualified for study and work. Hence, we seek to strengthen the social protection network and social participation process.

#### VIA - Support for the Children and Adolescents Law

SDG 5.2, 16.2

The customized project seeks to combat the violation of the rights of children and adolescents, with the improvement of the Social Protection Network (SPN) and heightened public awareness. VIA in Aripuanã is run in an expanded format, designed to intensify actions to prevent and address violations of child and teenage rights, especially sexual abuse and exploitation. It also strives to raise the consciousness of employees and the community about violence against women.

In 2018, we began construction of a Strategy for the Prevention and Care of Cases of Sexual Violence against Children and Adolescents (VSCA), with the participation of professionals from the Social Protection Network for Children and Adolescents in Aripuanã (MT).

Information and community awareness initiatives were also carried out through educational actions for parents, teens, children and the community at large, addressing the Rights of Children and Adolescents (ACD) and prevention as contained in the VSCA.





### Youth 3.0 (Juventude 3.0)

The Youth 3.0 project aims to reduce the vulnerability of teens and young people (aged 15-24) in Igrejinha, a Juiz de Fora neighborhood, by expanding opportunities for coexistence and participation of these young people in the community. It stimulates self-knowledge, the preparation of a life project, the creation of spaces for youth participation in the community and the promotion of social initiatives and contributions. Toward this end, it seeks to empower new perspectives for the future and improve young people's self-esteem so that they engage in improvement projects in their communities. In 2018, four modules were implemented — Identity and Purpose, Leadership, Communication and Culture, and School Mobilization.

6 thousand children benefiting from the program of educational quality in Peru

### Improvement of educational quality in Peru

This program aims to contribute to more and better educational achievements for children living in the area of the company's direct influence. It combines different strategies, such as teacher training, subsidies for hiring teachers and maintenance of libraries, among others. Among the results in 2018 were:

- Improved academic performance in mathematics and verbal reasoning;
- 5 teachers hired through funding from the company and 77 teachers trained in pedagogical strategies;
- 6,281 children benefiting from the program, 67% of whom received a basic kit of materials for the start of the school year;
- 3 school libraries set up.

### Opportunities for higher education

This activity aims to facilitate the access of outstanding youths to higher education opportunities. In 2018, 45 young people (30 in El Porvenir and 15 in Shalipayco) attended higher education courses through full or partial scholarships financed by the company; 68 new scholarships were awarded (16 in El Porvenir, 30 in Cerro Lindo, 20 in Cajamarquilla and 2 in Magistral) and the opportunity was offered to 465 students, especially in Shalipayco, to attend pre-university centers to improve their chances to continue their studies at the university or college technical level.

## Volunteer Program (Programa de voluntariado)

Transversal to the strategic axes, the We Are Everyone program, created in 2017, has already advanced significantly to a more mature level, with hundreds of actions carried out in all the organization's units and corporate centers. In 2018, 7,806 hours were dedicated to actions, involving 2,287 voluntary actions and more than 10 thousand beneficiaries. The number of hours was 35% higher than the total reached in 2017. By 2019, the goal is to reach 15 thousand volunteer hours and advance from 20% to 40% in the level of volunteer maturity in all units, positively impacting Local Development.

At the end of the year, in our Leadership Meeting, volunteering was highlighted as a company strategy. Recognition was given to two units with the highest level of maturity in volunteering; two innovative initiatives; and each unit's most inspiring volunteers.

The two innovative initiatives were:

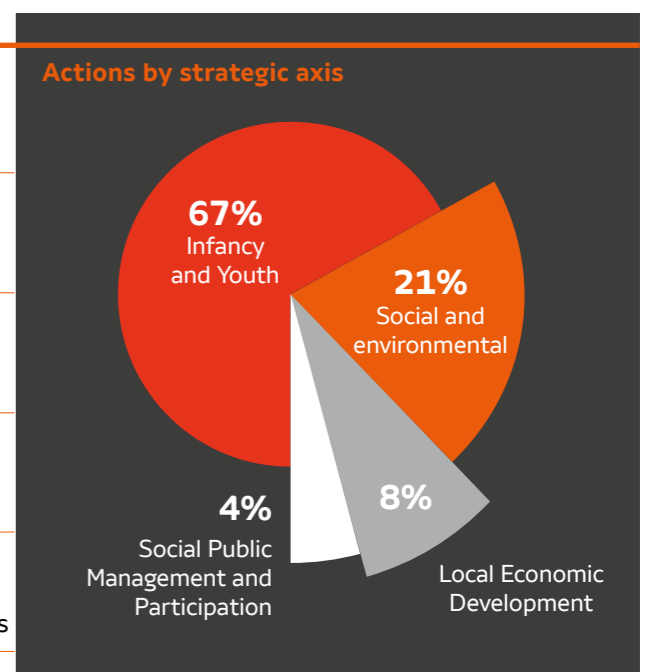
- INTER@JA**, from Juiz de Fora, directed to young people who have great difficulty in entering universities, technical courses and higher quality jobs. This struggle leads to a lack of perspectives and even to dropping out of school, since the individuals do not identify possibilities for their inclusion in the competitive formal labor market.
- Alternative Cultivation**, at Cajamarquilla, which developed alternate vegetable crops rich in nutritional content using recycled PET bottles. The objective is to supplement the diet of families that have little access to a varied menu with high nutritional value foodstuffs, thus positively impacting the development of children and teens in the nearby communities.

For 2019, our main challenges are to intensify a more recurring involvement of employees and integrate outsourced workers in the activities, further encouraging a structured volunteering culture in the units; replace one-off initiatives for more continuous and higher impact actions; and expanding partnerships with organizations to support project feasibility actions. In addition to being a legacy for the communities, the volunteer program contributes to the improvement of the organizational climate, closer relations between employees and the construction of networks.

More than 7 thousand hours dedicated to the program

### Volunteer main actions conducted

61%	4 EDUCAÇÃO DE QUALIDADE	Occupational orientation Good-humored educational workshops
10%	3 SAÚDE DE QUALIDADE	Educational campaigns Training Offices
6%	10 RESOLUÇÃO DE QUALIDADE	Socialization activities Funding campaigns
4%	11 CRIANÇAS E JOVENS EM SITUAÇÃO DE RISCO	Infrastructure improvements
11%	15 ENERGIA DE QUALIDADE	Group Reforms Planting Initiatives Social and environmental workshops



**Material topic**  
**Decommissioning**

GRI 103-2, 103-3 SDG 11.4



**1. RESPECT**



Our mining and industrial facilities are planned for a complete cycle of beginning, middle and end of the operation, ensuring not only the building and operation of our mining and smelting units in Brazil and Peru, but also an adequate shutdown of their activities, designed to co-create a legacy for the surrounding community.

Our commitment to this legacy places the issue front and center and, as a strategic part of the business, is controlled by internal policies and involves everybody from the operational units to the executive board members. Regardless of current legislation, all our operations have future use and decommissioning plans based on the most current technical references and best market practices. They are more complete and committed plans than the current legal requirements.

The award we received from Benchmarking magazine illustrates the responsibility we have assumed regarding a vision of the future about the economic and social development in the locations where we operate. The case history was presented during the 13th Mine Closure International Conference in September in Leipzig (Germany) and reports how we anticipate the shutdown planning process. The work was also presented at the IV Latin American Engineering and Sustainability Forum, organized by the Federal University of Tocantins (UFT). The event involved over a thousand students from Brazil and Latin America and contributed to the dissemination of good practices for a training environment focused on future professionals.

While most companies begin planning for decommissioning after the startup of operations, we do so as of the beginning of the project planning stage (FEL1). For Aripuanã, for example, which is in the building phase, we already have concluded a study for future use of the area and a conceptual plan for the decommissioning process.

Target	2016	2017	2018	Form of measurement
Ensure that 100% of the units have prepared a future-use alternative study and an updated decommissioning plan, in line with the sector's benchmark standards. Base year: 2016	22.2%	83.3%	83.3%	Percentage of total units with an alternative future uses study and updated decommissioning plan.

The last review of our units' decommissioning plans was conducted over the course of 2017 (units in Brazil and Cajamarquilla) and in 2018 the process in the other units in Peru were about 60% completed, with the involvement of communities and the preparation of development agendas for each locality. We consider it important to monitor and involve the general public and community institutions in an open and transparent way so that there is effective awareness of the impacts of the ending of our activities. These situations involve the release of a large number of jobs and reduces the direct and indirect municipal tax revenues.

In Fortaleza de Minas, whose operations were suspended and effectively sold in 2018, we maintained our commitment to the community and other stakeholders to continue the social projects in progress until the end of 2018.

### Sense of urgency

Although the social initiatives that we conducted throughout the operational phase are designed to stimulate the community's pro-activism and autonomy, the formalization of the decommissioning actions imbues the population and the government with a sense of urgency regarding the issue, considering that one of the great challenges for the continuity of social projects is that the community takes on all of the acquired processes, tools and knowledge.

The decommissioning plans are technical documents, which contain guidelines for a safe, complete and efficient decommissioning operation in which economic, environmental and social actions are considered. They follow four steps throughout the life cycle of the operation.

In the first stage, a socio-environmental diagnosis is prepared for the unit's and the municipality's areas, inserting the operations into a survey of potential future uses for the area; in the second stage, possible future uses are mapped and the most appropriate from the technical and economic points of view are indicated; in the third stage, the decommissioning actions that must be implemented for the physical, biotic and socio-economic environments are defined in order to achieve the intended future use; and finally, in stage four, the decommissioning actions defined in step three will be evaluated, to be based on the execution of the plans and whose global value will help define the unit's decommissioning financial provision.

At the end of the fourth stage, the decommissioning plan is consolidated and monitored by the unit. This document contains three levels of detail - conceptual, basic and executive - with the beginning of the decommissioning activities five years before the expected closing date of the operation and continuity for the five years subsequent to the effective end of the activities.

During 2018, the decommissioning projects that will begin in 2019 for Vazante and Três Marias were initiated, which, although they have a longer useful life, already have structures to be decommissioned within the scope of a progressive shutdown process, such as caverns and tailings deposits. Although there are advanced studies to increase the life of the mine, we follow the plan filed with the National Mining Agency (NMA).



### Decommissioning of Vazante SDG 15.2

The Vazante unit in Minas Gerais, which has been operating since 1969, already has initiated decommissioning plan actions. The current forecast, based on probable and confirmed reserves, is that the mine will operate through 2027, although this horizon should extend for even a few more years, with investments aimed at further extending its useful life.

In the survey, the potential of developing ecotourism (taking advantage of the natural potential of pits and caves in the region), teaching (the unit's mining structures) and religious tourism (Our Lady of Lapa Festival) were identified. We also envisage environmental measures (physical, chemical and biological means), such as recovery actions for degraded areas and alternatives for local development after the demobilization of our assets.

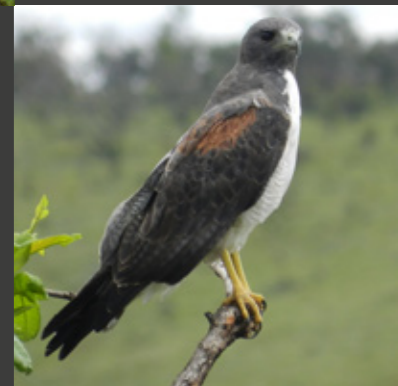
Among the results already obtained in the environmental initiatives are: recovery of 457.34 hectares, out of a total of 868.05 hectares; decommissioning of a pit, five sterile stacks and de-characterization of one of the two tailings containment geotechnical structures. We expect to make investments of R\$ 77.2 million over the next five years to comply with the Decommissioning Plan.



recovery of  
**457.34**  
hectares



investments of  
**R\$ 77.2** million



## Material topic Human Rights

GRI 103-2, 103-3 SDG 5.1, 8.7



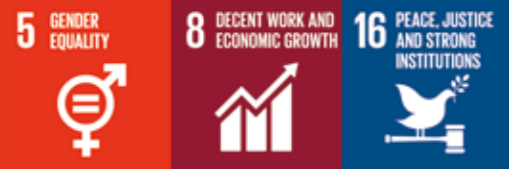
2. ENSURE



7. ASSUME



8. DEVELOP



Target	2016	2017	2018	Form of measurement
100% of the suppliers of critical categories engaged in the socio-environmental risk prevention and mitigation program Base Year 2014	Insertion of the socio-environmental criteria in the process of qualification and adaptation of a checklist for on-site audits of suppliers	Regular supplier performance evaluation	Completion of three supplier evaluation cycles and identification of improvement opportunities	Percentage of rated suppliers

The commitment to internationally recognized Human Rights is a fundamental value for us, which is based on respect for each individual's dignity and worth. Any violation of human, physical, psychological, cultural and social rights that involves violence, abuse or discrimination, especially of children and teenagers, is not permitted under any pretext.

We consider as examples of human rights violations:

- Use of violence, an aggravated situation if it occurs against people in situations of vulnerability;
- Discriminatory attitudes or racism;
- Use and exploitation of child labor;
- Situations analogous to slave labor;
- Abuse or sexual exploitation of children and teenagers.

We encourage everyone, who if they witness any situation of violation of Human Rights, to denounce the practice by dialing the number 100. We recommend that partner companies adopt prevention measures and procedures for handling complaints related to human rights violations. And we ask our partners to also commit to our Social Golden Rules, which call for punishment in cases of non-compliance (rules include behaviors and practices related to the guarantee of Human Rights). All employees are trained through a Human Rights booklet based on our Code of Conduct. **GRI 412-2 SDG 16.B**

### Outsourcing management

The outsourced management system is underpinned by four fundamental pillars (processes, tools, structure and people). The Outsourcing Management Program continued to be run in 2018. This project seeks to standardize practices related to the management of outsourced workers, ensure compliance with legal obligations, improve service quality and relations with contracted companies and optimize costs through the management of our contracts.

There are 25 multidisciplinary fronts in Brazil and 36 in Peru, which work on improving procedures, tools, flows, indicators and greater clarity and definition of roles and responsibilities throughout each stage of the service management process.

Some companies receive technical visits from the Supply and Supplier Management areas. In the event of complaints of non-compliance with requirements related to human rights impacts, an investigation process is initiated to ascertain the facts and take the applicable actions, which may involve fines or contract termination. In 2018, no cases of violation of these conditions were registered.

### Supplier relations

**GRI 103-2, 103-3 SDG 8.8**

Our Supplier Management Program (Programa de Gestão de Fornecedores) considers four topics: cost/ value, quality, contractual compliance (agreements and legal coverage) and homologation (tax compliance and licenses). Regardless of a supplier's size, we seek to engage everyone in the best socio-environmental practices with a view toward ensuring the responsible use of natural resources and respect for workers' rights.

We reviewed the process for registering and contracting suppliers to all our units (smelters, administrative, mining) in 2018, both in Brazil and Peru, resulting in the quarterly standardizing of policies and evaluations. In order to classify, approve and analyze the suppliers, in addition to the basic documentary issues, we now ask for environmental operating licenses, as well as take into account matters involving social responsibility and human rights preservation. Throughout the year, all suppliers received a copy of our new Code of Conduct and signed a commitment pledge.

Our main partners undergo quarterly evaluation that addresses five dimensions: operational, health and safety, environment, legislation, sustainability and compliance.

At the end of each cycle, the partner company receives grades for each dimension and an overall score. Those who do not have the minimum grades for each dimension are referred to a reaction and recovery plan. However, if low scores become frequent, the contract with the company may be discontinued. The results of the cycles fuel our internal processes, such as the prioritization of suppliers with better grades and not just lower prices. This periodic evaluation will also nurture awards programs that will be implemented in the future, because we want to recognize suppliers with the best general results or by categories, such as safety. The evaluation of the due diligence processes, now standardized and carried out periodically, is part of the evaluation.

In 2018, we completed three supplier evaluation cycles, which gave us a broad picture of the method and made it possible to draw up action plans aimed at identifying opportunities to strengthen the process.

In addition, critical suppliers undergo a process that evaluates their financial health (Brazil). Monthly and annually, they are evaluated based on a compliance checklist comprising more than 250 global lists if there is any involvement that could pose a risk to Nexa. For Peru, compliance assessments (Splaft) are carried out for critical suppliers as soon as they are registered.

Even if our operations are not considered to be at risk of human rights violations, our contracts include clauses that prohibit the use of child labor or forced or slave-like labor. Suppliers must also ensure contractually a safe and healthy work environment, freedom to unionize and non-discrimination by gender, race, social class, nationality, religion, physical or mental disability, sexual choice or any other condition of diversity. **GRI 407-1, 408-1, 409-1**

If a complaint is filed regarding non-compliance with requirements related to human rights impacts, an investigation process is initiated to ascertain the facts and take the applicable actions. These may involve fines or contract termination. In 2018, no cases of violation of these conditions were registered.

We held the first annual meeting on safety with suppliers in Peru, to exchange information on the subject, and the workshop "Meeting of Opportunities" in Aripuanã, which addressed the criteria we adopted for registration and selection of suppliers and future demands for goods and services of the enterprise.

## Requirements for the selection of suppliers

The criteria applied in the selection of suppliers depend on the type of service that will be provided and can broadly include the following issues:

### Environmental Aspect

- Compliance with environmental legislation in the countries of operation
- ISO 14001 standard
- Health, workplace safety and environmental programs
- Environmental risk prevention programs
- Operating Permits/Environmental Operation
- Federal Technical Registration of the Brazilian Institute of Environment and Renewable Natural Resources (Ibama)

### Socio-economic aspect

- Compliance with all laws in the countries of operation (labor, tax, anti-corruption, etc.)
- Does not appear on the "Slave Labor Dirty List" published by the Brazilian Ministry of Labor and Employment
- Signing of a document based on the SA 8000 standard, including non-use of forced or child labor, providing a safe and healthy working environment for workers' freedom to associate and non-discrimination of any kind

In 2018, 61% of new suppliers were selected and included in the system based on labor practice criteria, 9% on environmental criteria and 12% on human rights and social impacts. The target through 2025 is to engage 100% of critical suppliers in social-environmental risk prevention and mitigation programs. **GRI 308-1, 414-1**



### Supply Chain **GRI 102-9, 103-2, 103-3**

Our supplier registry covers the most diverse segments: raw material inputs, waste management, environmental management, energy supply, minerals and chemical products, fuels in general, health services, packaging supply, transportation in general, MRO (Maintenance, Repair and Other), facilities and IT, services and maintenance, among others. At the end of the year, 54,430 companies were registered (39,335 in Brazil and 15,095 in Peru) compared to 53,844 at the end of 2017.

In December 2018, we began to migrate our management and suppliers to the Ariba platform, covering the processes of registration, blocking/unblocking, extension and homologation of suppliers.

We always give preference to suppliers in the vicinity of our units, which is a criterion for tie-breaking in the choice of suppliers. We take into account the advantages represented by proximity to the operations, identification with the culture and the impulse given to local development provided by a long-term relationship with companies from the communities. In addition, our units are free to acquire non-critical services locally. We also encourage some suppliers, with larger volumes of purchases, to open units close to the areas of operation. In 2018, 12 in-company stores were installed near or inside the company's units.

Our purchases totaled US\$ 1.3 billion in 2018, of which 75.6% was contracted from companies located in the regions where we operate.

### Expenses with suppliers **GRI 204-1**

	2016	2017	2018
Total value spent on suppliers (US\$ million)	1,537.40	1,554.80	1,288.98
% of spending on local suppliers	65.1%	65.7%	75.6%

# GRI Annex

## Profile indicators

### Total number of employees GRI 102-8

			2016	2017	2018	
<b>Brazil</b>						
Own employees	Monthly	Men	1,541	1,541	1,513	
		Women	312	344	361	
	Hourly	Men	1,196	1,213	1,242	
		Women	51	65	82	
	Trainees	Men	5	0	0	
		Women	5	0	0	
	Trainees and apprentices	Trainees	Men	42	47	42
			Women	44	57	39
Apprentices		Men	24	31	35	
		Women	13	17	21	
Service providers (outsourced)	Permanent	553	1,115	1,164		
	Temporary (projects)	359	396	4,697		
<b>TOTAL</b>			<b>4,145</b>	<b>4,826</b>	<b>9,196</b>	
<b>Abroad</b>						
Own employees	Monthly	Men	2,075	2,098	2,183	
		Women	168	165	210	
	Hourly	Men	0	0	0	
		Women	2	0	0	
	Trainees	Men	25	14	0	
		Women	7	6	0	
	Trainees and apprentices	Trainees	Men	28	26	26
			Women	18	19	17
Apprentices		Men	4	0	0	
		Women	1	0	0	
Service providers (outsourced)	Permanent	6,029	5,856	5,492		
	Temporary (projects)	0	0	2,055		
<b>TOTAL</b>			<b>8,357</b>	<b>8,184</b>	<b>9,983</b>	

			2016	2017	2018	
<b>Total</b>						
Own employees	Monthly	Men	3,616	3,639*	3,696	
		Women	480	509	571	
	Hourly	Men	1,196	1,213	1,242	
		Women	53	65	82	
	Trainees	Men	30	14	0	
		Women	12	6	0	
	Trainees and apprentices	Trainees	Men	70	73	68
			Women	62	76	56
Trainees		Men	28	31	35	
		Women	14	17	21	
Service providers (outsourced)	Permanent	6,582	6,971	6,656		
	Temporary (projects)	359	396	6,752		
<b>TOTAL</b>			<b>12.502</b>	<b>13.010</b>	<b>19.179</b>	

### Comment:

All employees are hired indefinitely; trainees and apprentices have a temporary contract.

## Economic indicators

### Entities included in the financial statement GRI 102-45

Cia. Magistral S.A.C
Nexa Resources Atacocha S.A.A. - "NEXA ATACOCHA"
Nexa Resources Perú S.A.A. - "NEXA PERU"
Inversiones Garza Azul S.A.C
Votorantim GmbH
Pollarix S.A. - "Pollarix" (i)
L.D.O.S.P.E. Geração de Energia e Participações Ltda. - "L.D.O.S.P.E."
L.D.Q.S.P.E. Geração de Energia e Participações Ltda. - "L.D.Q.S.P.E."
L.D.R.S.P.E. Geração de Energia e Participações Ltda. - "L.D.R.S.P.E."
Nexa Resources El Porvenir S.A.C.
Nexa Resources UK Ltd. - "NEXA UK"
Minera Bongará S.A.
Minera Pampa de Cobre S.A.C
Mineração Dardanelos Ltda.
Mineração Santa Maria Ltda.
Rayrock Antofagasta S.A.C
Nexa Resources Cajamarquilla S.A. - "NEXA CJM"
Nexa Recursos Minerais S.A. - "NEXA BR"
Votorantim US. Inc.
Campos Novos Energia S.A. - "Enercan"
Cia. Minera Shalipayco S.A.C

## Direct economic value generated GRI 201-1

Breakdown of Value Added (US\$ thousand)	2016	2017	2018
<b>Direct Economic Value Generated</b>			
<b>1) Revenue</b>	-	-	-
1.1) Sales of Products and Services	2,265,111	2,706,831	2,779,011
1.2) Other Operating Income (Expenses)	408	5,279	8,755
1.3) Allowance for Doubtful Accounts	653	385	544
1.4) Total Revenues	2,266,172	2,712,495	2,788,310
<b>2. Inputs acquired from third parties</b>	-	-	-
2.1) Raw materials and other production inputs	(1,505,750)	(1,511,124)	(1,169,230)
2.2) Materials, energy, outsourcing and others	(32,611)	(43,673)	(513,016)
2.3) Impairment of property, plant and equipment	979	0	(3,283)
<b>3) Gross Added Value</b>	728,790	1,157,698	1,102,781
3.1) Depreciation, amortization and depletion	(275,034)	(270,454)	(267,189)
<b>4) Net value added generated</b>	453,756	887,244	835,592
<b>5) Value added received in transfer</b>	-	-	-
5.1) Equity Pickup	(158)	60	0
5.2) Realization of other impacts when investment is written-down	0	0	0
5.3) Financial revenues	507,731	167,827	423,752
Total Value-Added Received in Transfer	507,573	167,887	423,752
<b>6) Total value-added to be distributed</b>	961,329	1,055,131	1,259,344
<b>7) Distribution of value-added</b>	-	-	-
7.1) Salaries, benefits and social charges	233,755	278,285	262,964
7.1.1) Direct remuneration	126,570	146,766	142,259
7.1.2) Benefits	66,863	76,677	74,292
7.1.3) Social Charges	40,322	54,842	46,413
7.2) Taxes, tariffs and contributions	167,026	285,175	240,182
7.2.1) Federal	134,421	195,413	192,607
7.2.2) State	55,592	70,127	16,711
7.2.3) Municipal	114	138	0
7.2.4) Deferred taxes	(23,101)	19,497	30,864
7.3) Remuneration of third-party capital	450,039	326,406	663,609
7.3.1) Financial expenses	428,650	298,008	626,406
7.3.2) Rents	21,389	28,398	37,203
7.4) Remuneration of own equity	110,509	165,265	90,976
7.4.1) Net profit (loss) for the year	110,509	165,265	90,976
<b>8) Distribution of value-added</b>	961,329	1,055,131	1,257,731

## Expenses with local suppliers GRI 204-1

Amount spent on local suppliers (US\$ million)	2016	2017	2018
Amount spent on Local Suppliers	1,000.93	1,021.35	974.41
Total amount spent on Suppliers	1,537.38	1,554.80	1,288.99
Percentage Spent with Local Suppliers	65.1%	65.7%	75.6%

## Environmental indicators

### Materials used by weight and volume GRI 301-1

Consumption of Main Materials (tonnes)	Classification	2016	2017	2018
ROM (Internal Supply)	Non-renewable	13,206,043	12,976,233	13,027,531
Concentrates (Internal Supply)	Non-renewable	1,209,593	1,143,562	1,163,740
Other Materials (External Supply)	Non-renewable	110,095	354,971	414,910
Other Materials (Internal Supply)	Non-renewable	143,189	161,051	191,658
Total volume of main materials	-	14,668,919	14,635,818	14,797,840

### Percentage of materials used from recycling GRI 301-2

Percentage of recyclable materials (tonnes)	2016	2017	2018
Total recycled materials used	78,633.23	92,298.30	109,623.61
Total materials used <span style="color: #808080;">GRI 301-1</span>	14,668,919	14,635,818	14,797,840
Percentage of recycled materials used	1%	1%	1%

### Water withdrawal by source GRI 303-3

	Volume (m³) 2017	Areas of water scarcity		Areas without water shortage		Dissolved solids	
		Volume (m³) 2018	Volume (m³)	Volume (m³)	Volume (m³) ≤ 1.000 mg/L (SDT)	Volume (m³) > 1.000 mg/L (SDT)	
Surface water (rivers, streams, lakes)	19,468,764	16,432,010	8,610,506	7,821,504	16,432,010	0	
Ground water (soil infiltration)	96,086,257	111,317,661	103,560,147	7,757,514	110,870,572	447,089	
Rainwater directly collected and stored by the organization	6,986,740	9,487,889	7,880,096	1,607,793	9,487,889	0	
Seawater	3,028,630	3,562,439	0	3,562,439	0	3,562,439	
Produced water (water retained in ores and concentrates)	916,992	1,781,731	173,638	1,608,093	1,781,731	0	
<b>TOTAL WATER WITHDRAWAL BY SOURCE</b>	<b>126,487,382</b>	<b>142,581,730</b>	<b>120,224,386</b>	<b>22,357,343</b>	<b>138,572,201</b>	<b>4,009,528</b>	

**Water discharge (thousand m<sup>3</sup>)** GRI 303-4

Destination	2016	2017	2018 <sup>19</sup>				
			Total	Availability of water		Dissolved solids	
				Areas of water scarcity	Areas without water shortage	<= 1,000 mg/L (SDT)	> 1,000 mg/L (SDT)
Reuse by the organization itself	70,757.31	61,961.64	60,575.92	Not available	Not available	Not available	Not available
Surface water (rivers, streams, lakes)	119,021.41	106,064.55	119,250.11	103,093.86	15,730.83	114,109.31	4,715.39
Ground water (soil infiltration)	Not available	3,139.35	8,144.14	8,015.82	128.32	7,819.83	324.31
Oceans	1,521.74	1,993.28	2.1	0.00	2,2.1.43	0.00	2.1
Outsourced treatment (concessionaires and others)	Not available	1,506.68	1,533.74	119.64	1,414.10	1,414.10	119.64
Water retained in products and/or waste	Not available	1,273.03	1,387.35	933.61	453.74	958.38	428.96
Others (evaporation, losses, effluents supplied to third parties, etc.)	2,169.98	11,505.99	9,083.76	5,633.94	3,449.81	6,783.09	2,300.66
<b>Total water discarded</b>	<b>122,713.13</b>	<b>125,482.87</b>	<b>141,531.67</b>	<b>117,796.88</b>	<b>23,309.37</b>	<b>131,084.74</b>	<b>10,021.51</b>

<sup>19</sup> The water indicators were reviewed by the GRI in 2018 and for this reason, Nexa started to monitor its effluents according to the new Standards to meet the new specifications.

**Total waste weight by type and method of disposal** GRI 306-2

Total Weight of Wastes (tonnes)	2016	2017	2018
<b>Non-Hazardous Waste Disposal</b>	<b>13,967.10</b>	<b>16,082.18</b>	<b>15,574.40</b>
Composting	867.22	726.58	1,094.51
Reuse/Recycling	10,807.76	11,485.02	10,732.90
Recovery	0.00	0.00	0.00
Incineration (or use as fuel)	29.19	79.33	390.02
Sanitary Landfill	1,574.56	1,741.21	1,804.83
Coprocessing/Refining	11.00	140.70	645.19
On-Site Storage	555.55	1,311.58	47.12
Underground Waste Injection	0.00	0.00	0.00
Industrial Landfill	121.82	175.93	219.18
Destination for specific purposes	0.00	0.00	0.00
Sale- Partial Recycling	0.00	0.00	0.00
Others	0.00	421.84	640.65
<b>Hazardous Waste Disposal</b>	<b>2,909.59</b>	<b>3,282.04</b>	<b>3,011.74</b>
Composting	0.00	0.00	0.00
Reuse/Recycling	408.18	356.59	375.82
Recovery	13.51	0.37	0.50
Incineration (or use as fuel)	0.27	0.19	13.42
Sanitary Landfill	0.00	0.00	0.00
Coprocessing/Refining	766.81	1,046.78	1,062.35
On-Site Storage	365.50	175.43	45.15
Underground Waste Injection	0.00	0.00	0.00
Industrial Landfill	1,355.32	1,590.97	1,511.39
Destination for specific purposes	0.00	16.36	2.88
Sale- Partial Recycling	0.00	94.72	0.00
Others	0.00	0.64	0.22
<b>Disposal of waste TOTAL</b>	<b>16,876.69</b>	<b>19,364.22</b>	<b>18,586.14</b>
Composting	867.22	726.58	1,094.51
Reuse/Recycling	11,215.94	11,841.61	11,108.72
Recovery	13.51	0.37	0.50
Incineration (or use as fuel)	29.46	79.52	403.44
Sanitary Landfill	1,574.56	1,741.21	1,804.83
Co-processing/Refining	777.81	1,187.48	1,707.53
On-Site Storage	921.06	1,487.01	92.27
Underground Waste Injection	0.00	0.00	0.00
Industrial Landfill	1,477.14	1,766.90	1,730.57
Destination for specific purposes	0.00	16.36	2.88
Sale- Partial Recycling	0.00	94.72	0.00
Others	0.00	422.48	640.87



### Volume of significant gas emissions GRI 305-7

Volume of significant gas emissions (tonnes)	2016	2017	2018
NOx	118	100	83
SOx	15,647	607	370
Particulate matter (PM)	593	622	682
Carbon monoxide (CO)	12	10	10

### Monetary value of significant fines and total non-monetary sanctions resulting from non-compliance with environmental laws and regulations GRI 307-1

Period	2016	2017	2018
Total number of sanctions	3	5	7
Total monetary value of significant fines (US\$)	378,547.60	964,411.75	0
Processes through arbitration mechanisms	0	0	0

#### Comments:

1. This item includes sanctions and amounts received and paid, including both legal actions and administrative proceedings.
2. Indicator not applicable to the central office of São Paulo.

## Social indicators

### New employee hires and employee turnover GRI 401-1

2018					
Brazil					
	Age Group				
	Men	Women	Under 30 years old	Between 30 and 50 years old	Greater than 50 years old
Total employees	2,832	503	977	2,063	295
Employees admitted	404	164	346	214	8
Dismissals	465	181	352	231	63
New hires rate	14%	33%	35%	10%	3%
Abroad					
	Age Group				
	Men	Women	Under 30 years old	Between 30 and 50 years old	Greater than 50 years old
Total employees	2,209	227	318	1,515	603
Employees admitted	300	89	159	23	207
Dismissals	257	53	88	140	82
New hires rate	14%	39%	50%	2%	34%
Fees					
					New Hires 17%
					Dismissals 17%

### Work-related injuries GRI 403-9

Work Health and Safety Indicators	2016	2017	2018
Man-hours Worked (Own, Fixed Outsourced, Furnishings and CAPEX Projects)	32,978,913	33,771,849	37,708,422
Total number of injuries (Level 1)	211	200	173
Total number of injuries without lost time (Levels 2 and 3)	50	44	46
Total number of injuries with lost time (Levels 4, 5 and 6)	24	39	38
Fatalities	2	7	0
Injury Rate (IR)	0.45	0.49	0.47
Frequency rate of accidents with and without lost time	2.25	2.46	2.23
Lost Time Injury Rate	0.73	1.15	1.01

#### Comments:

1. Rate of accidents with and without lost days, calculated based on the sum of the level 2 to 5 accidents involving own, permanent third-parties, temporary outsourced employees and Third-Party Capex Projects, multiplied by 1 million and divided by the total hours worked.
2. Not included are level 1 accidents (outpatient) in the injury rate.

### Average training hours per employee GRI 404-1

Functional Category	Gender	2016	2017	2018
CEO/Director	Women	18	4	10
	Men	21	2	11
Manager	Women	37	32	40
	Men	43	33	94
Coordinator/Consultant	Women	16	19	16
	Men	21	33	30
Technician/Analyst/Supervisor	Women	41	27	37
	Men	65	54	79
Trainee	Women	67	169	0
	Men	133	121	0
Operational	Women	22	30	11
	Men	35	47	31
Intern	Women	18	20	28
	Men	21	20	43
Apprentice	Women	7	14	1
	Men	15	27	10
Overall Average	Women	29	26	22
	Men	40	46	40

## Diversity of governance bodies and employees GRI 405-1

Job Positions	2018	Total employees	Age Group		
			30 years	30 to 50 years old	+ 50+ years old
CEO/Director	Men	8	0	2	6
	Women	1	0	0	1
Manager	Men	122	0	91	31
	Women	25	0	23	2
Coordinator/Consultant	Men	432	52	317	63
	Women	170	29	137	4
Technician/Analyst/Supervisor	Men	868	146	587	135
	Women	232	106	119	7
Trainee	Men	0	0	0	0
	Women	0	0	0	0
Operational	Men	3,508	692	2,176	640
	Women	225	94	122	9
Intern	Men	68	68	0	0
	Women	56	55	1	0
Apprentice	Men	35	32	3	0
	Women	21	21	0	0

Composition of minority groups in the organization	2016	2017	2018
Employees over 50 years of age	827	837	898
Women	621	673	730
<b>Composition of governance body (Board Members and Executive Officers )</b>			
Men	15	15	15
Women	2	3	3
<b>Composition of governance bodies (Board Members and Executive Officers) by age group</b>			
Under 30 years old	0	0	0
Between 30 and 50 years old	5	5	4
More than 50 years	12	13	14

## Salary ratio and remuneration of women and men GRI 405-2

Job Position	2016		2017		2018 <sup>20</sup>	
	Salary	Remuneration	Salary	Remuneration	Salary	Remuneration
CEO/Director	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported
Manager	1.18	1.21	0.96	0.98	1.09	1.03
Coordinator/Consultant	0.87	0.88	1.09	1.10	1.11	1.05
Technician/Analyst/Supervisor	0.81	0.82	0.84	0.85	1.06	1.00
Trainee	0.40	0.40	0.45	0.45	-	-
Operational	0.67	0.66	0.75	0.75	1.36	1.36
Intern	0.78	0.81	0.89	0.89	1.01	0.99
Apprentice	0.84	0.84	0.94	0.94	0.97	0.97

<sup>20</sup> In 2018, no trainees worked for us.

## Monetary value of significant fines relating to products and services GRI 419-1

Period	2016	2017	2018
Total monetary value of significant fines (US\$)	26,428,423.72	33,045,207.57	63,266,667.93
Number of non-monetary sanctions	0	0	0
Processes through arbitration mechanisms	0	0	0

### Comments:

- In this item the fines and penalties received and the amounts paid were included, including both the lawsuits filed and the administrative proceedings.
- The information of the Fortaleza de Minas Unit is not included. Information not available.

## Sector indicators

### Lands that were altered or restored MM1

Amount of land altered or rehabilitated (hectares)	2016	2017 <sup>21</sup>	2018
Total land altered and not yet rehabilitated	3,190	2,094	1,711
Total amount of land altered during the reporting period	32	9	46
Total amount of land rehabilitated during the reporting period, considering the agreed final use	148	47	44
<b>TOTAL LAND ALTERED AND NOT YET REHABILITATED</b>	<b>3,074</b>	<b>2,056</b>	<b>1,713</b>

### Comments:

- Indicator not applicable to the São Paulo central office.

<sup>21</sup> Dado de 2017 recalculado em decorrência de ajustes na forma de cálculo GRI 102-48

### Areas with biodiversity management plans (PGB) MM2

	2016	2017	2018
Total number of units	7	8	8
Total number of units that were identified with the need for a PGB	4	4	4
Number of units that have a current PGB	2	4	2
Percentage of units that have a current PGB	50%	100%	50%





#### Comments:

1. Indicator not applicable to the central office in São Paulo.


### Operations with decommissioning plans MM10

	2016	2017	2018
Total number of operations	13	13	12
Total number of operations that have decommissioning plans	13	13	12
Percentage of operations that have decommissioning plans	100%	100%	100%
Value of the total financial provision for the shutdown of activities (US\$ million)	\$ 208,886	\$126,510	\$185,552

## Summary of Sustainable Development Goals

SDG	Description of SDGs targets	Page
	3.4 By 2030, reduce by one-third pre-mature mortality from non-communicable diseases (NCDs) through prevention and treatment, and promote mental health and well-being	78
	3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	75
	3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents	37
	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	75 and 78
	4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	65 and 93
	4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the most vulnerable, including people with disabilities, indigenous peoples and children in vulnerable situations	69
	5.1 End all forms of discrimination against all women and girls everywhere	52, 68 and 102
	5.2 Eliminate all forms of violence against all women and girls in public and private spheres, including trafficking and sexual and other types of exploitation	95
	5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	68
	5.c Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	68
	6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	89
	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	87
	6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programs, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	86 and 95

SDG	Description of SDGs targets	Page
	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	90
	7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	41, 42 and 43
	8.2 Achieve higher levels of productivity of economies through diversification, technological upgrading and innovation, including through a focus on high value added and labor-intensive sectors	43
	8.5 By 2030 achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	68
	8.6 by 2020 substantially reduce the proportion of youth not in employment, education or training	93
	8.7. Take immediate and effective measures to eradicate forced labor, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child , including recruitment and use of child soldiers, and by 2025 end child labor in all its forms	102
	8.8 Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular migrant women, and persons in precarious employment	72, 75, 78, 79 and 103
	8.9. By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	93
	9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	34, 81, 82, 86 and 90
	10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	68 and 93
	10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard	52
	11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage	98
	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	80, 88, 90 and 94

SDG	Description of SDGs targets	Page
	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	90
	12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	81
	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	81
	12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	3
	12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products	93
	13.2 Integrate climate change measures into national policies, strategies and planning	80 and 90
	14.7. By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism	93
	15.1. By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	88
	15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	101
	16.1 Significantly reduce all forms of violence and related death rates everywhere	72 and 74
	16.2 End abuse, exploitation, trafficking and all forms of violence against and torture of children	95
	16.5 Substantially reduce corruption and bribery in all their forms	52
	16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels	78 and 79
	16.b Broaden and strengthen the participation of developing countries in the institutions of global governance	103

# GRI Standards Content Summary

GRI 102-54, 102-55

This report has been prepared in accordance with the GRI Standards: Essential option.

GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>GRI 101: Fundamentals 2016</b>					
Standard contents					
<b>GRI 102: Standard Content 2016</b>	<b>Profile</b>				
	<b>102-1</b> Name of the Organization	3 and 11	-	-	-
	<b>102-2</b> Activities, brands, products and services	11 and 82	-	-	-
	<b>102-3</b> Location of the headquarters	11 and 135	-	-	-
	<b>102-4</b> Location of Operations	11	-	-	-
	<b>102-5</b> Ownership and legal form	11 and 49	-	-	-
	<b>102-6</b> Markets served	36	-	-	-
	<b>102-7</b> Scale of the organization	11, 12, 14 and 61	-	-	-
	<b>102-8</b> Information on employees and other workers	64 and 106	Gender of outsourced employees and Type of work (full or part-time), since we do not manage this information	6	8
	<b>102-9</b> Supply chain	105	-	2.8	-
	<b>102-10</b> Significant changes to the organization and its supply chain	6, 8 and 11	-	-	16
	<b>102-11</b> Precautionary Principle or approach	80	-	-	-
	<b>102-12</b> External Initiatives	39	-	-	-
<b>102-13</b> Participation in associations	56	-	-	-	

GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>GRI 101: Fundamentals 2016</b>					
Standard contents					
	<b>Strategy</b>				
	<b>102-14</b> Statement from senior decision-maker	6 and 8	-	-	-
	<b>102-15</b> Key impacts, risks and opportunities	54	-	-	-
	<b>Ethics and integrity</b>				
	<b>102-16</b> Values, principles, standards and norms of behavior	52	-	10	16
	<b>102-17</b> Mechanisms for advice and concerns about ethics	52 and 53	-	10	16
	<b>Governance</b>				
	<b>102-18</b> Governance structure	49 and 51	-	-	-
	<b>102-22</b> Composition of the highest governance body and its committees	50	-	-	-
	<b>102-23</b> Chair of the highest governance body	50	-	-	-
	<b>Stakeholder engagement</b>				
	<b>102-40</b> List of stakeholder groups	56	-	-	-
	<b>102-41</b> Collective bargaining agreements	100% of employees are covered by collective bargaining agreements (Brazil).	-	3	8
<b>102-42</b> Base used for Identifying and selecting stakeholders for engagement	56	-	-	-	

GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>GRI 101: Fundamentals 2016</b>					
Standard contents					
	<b>102-43</b> Approach to Stakeholder Engagement	56	-	-	-
	<b>102-44 Key</b> topics and concerns raised during engagement	3	-	-	-
<b>Reporting practice</b>					
	<b>102-45</b> Entities included in the consolidated financial statements	107	-	-	-
	<b>102-46</b> Defining report content and topic boundaries	3	-	-	-
	<b>102-47</b> List of material topics	3, 4 and 5	-	-	-
	<b>102-48</b> Restatements of information	60, 72, 81, 82 and 115	-	-	-
	<b>102-49</b> Changes to list of topics and topic boundaries	No alterations	-	-	-
	<b>102-50</b> Reporting period	3	-	-	-
	<b>102-51</b> Date of most recent report	3	-	-	-
	<b>102-52</b> Reporting Cycle	3	-	-	-
	<b>102-53</b> Contact point for questions relating to the report	135	-	-	-
	<b>102-54</b> Claims of reporting in accordance with the GRI Standards	120	-	-	-
	<b>102-55</b> Content index	120	-	-	-
	<b>102-56</b> External verification warranty	3 and 132	-	-	-
GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>Topics</b>					
<b>GRI 200 Series Economic Series</b>					
<b>Economic performance</b>					
<b>Market presence</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	4	-	-	-
	<b>103-2</b> The management approach and its components	63	-	-	-
	<b>103-3</b> Evaluation of the management approach	62	-	-	-
<b>GRI 202: Market presence 2016</b>	<b>202-1</b> Ratios of standard entry level wage by gender compared to local minimum wage	In 2018, no employee was identified below the local minimum wage.	-	6	1, 5, 8
<b>Indirect Economic Impacts</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	92	-	-	-
	<b>103-3</b> Evaluation of the management approach	92	-	-	-
<b>GRI 203: Indirect economic impacts 2016</b>	<b>203-1</b> Investment in infrastructure and services	93	-	-	-
<b>Purchase practices</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	103	-	-	-
	<b>103-3</b> Evaluation of the management approach	103	-	-	-
<b>GRI 204: Buying Practices 2016</b>	<b>204-1</b> Proportion of spending on local suppliers	105	-	-	12
<b>Anti-corruption</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	52	-	-	-
	<b>103-2</b> The management approach and its components	52	-	-	-
	<b>103-3</b> Evaluation of the management approach	52	-	-	-
<b>GRI 201: Economic Performance 2016</b>	<b>201-1</b> Direct economic value generated and distributed	108	-	-	5, 8, 9

GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>GRI 101: Fundamentals 2016</b>					
Standard contents					
	<b>102-43</b> Approach to Stakeholder Engagement	56	-	-	-
	<b>102-44 Key</b> topics and concerns raised during engagement	3	-	-	-
<b>Reporting practice</b>					
	<b>102-45</b> Entities included in the consolidated financial statements	107	-	-	-
	<b>102-46</b> Defining report content and topic boundaries	3	-	-	-
	<b>102-47</b> List of material topics	3, 4 and 5	-	-	-
	<b>102-48</b> Restatements of information	60, 72, 81, 82 and 115	-	-	-
	<b>102-49</b> Changes to list of topics and topic boundaries	No alterations	-	-	-
	<b>102-50</b> Reporting period	3	-	-	-
	<b>102-51</b> Date of most recent report	3	-	-	-
	<b>102-52</b> Reporting Cycle	3	-	-	-
	<b>102-53</b> Contact point for questions relating to the report	135	-	-	-
	<b>102-54</b> Claims of reporting in accordance with the GRI Standards	120	-	-	-
	<b>102-55</b> Content index	120	-	-	-
	<b>102-56</b> External verification warranty	3 and 132	-	-	-
GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>Topics</b>					
<b>GRI 200 Series Economic Series</b>					
<b>Economic performance</b>					
<b>Market presence</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	4	-	-	-
	<b>103-2</b> The management approach and its components	63	-	-	-
	<b>103-3</b> Evaluation of the management approach	62	-	-	-
<b>GRI 202: Market presence 2016</b>	<b>202-1</b> Ratios of standard entry level wage by gender compared to local minimum wage	In 2018, no employee was identified below the local minimum wage.	-	6	1, 5, 8
<b>Indirect Economic Impacts</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	92	-	-	-
	<b>103-3</b> Evaluation of the management approach	92	-	-	-
<b>GRI 203: Indirect economic impacts 2016</b>	<b>203-1</b> Investment in infrastructure and services	93	-	-	-
<b>Purchase practices</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	103	-	-	-
	<b>103-3</b> Evaluation of the management approach	103	-	-	-
<b>GRI 204: Buying Practices 2016</b>	<b>204-1</b> Proportion of spending on local suppliers	105	-	-	12
<b>Anti-corruption</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	52	-	-	-
	<b>103-2</b> The management approach and its components	52	-	-	-
	<b>103-3</b> Evaluation of the management approach	52	-	-	-
<b>GRI 201: Economic Performance 2016</b>	<b>201-1</b> Direct economic value generated and distributed	108	-	-	5, 8, 9

GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>Topics</b>					
<b>GRI 200 Series Economic Series</b>					
<b>Economic performance</b>					
<b>GRI 205: Anti-corruption 2016</b>	<b>205-2</b> Communication and Training in Anti-Corruption Policies and Procedures	52	-	10	16
	<b>205-3</b> Confirmed cases of corruption and measures taken	52	-	10	16
<b>GRI 206 Anti-Competitive Behavior Standards</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	52	-	-	-
	<b>103-2</b> The management approach and its components	52	-	-	-
	<b>103-3</b> Evaluation of the management form	52	-	-	-
<b>GRI 206: Anti-Competitive Behavior</b>	<b>206-1</b> Legal actions for anti-competitive behavior, anti-trust, and monopoly practices.	52	-	-	-
<b>GRI 300 Environmental Series Standards</b>					
<b>Materials</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	4	-	-	-
	<b>103-2</b> The management approach and its components	80	-	-	-
	<b>103-3</b> Evaluation of the management form	80	-	-	-
<b>GRI 301 - Materials 2016</b>	<b>301-1</b> Materials used by weight or volume	109	-	7, 8	8, 12
	<b>301-2</b> Recycled input materials used	109	-	8, 9	8, 12
<b>Energy</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	4	-	-	-
	<b>103-2</b> The management approach and its components	80 and 90	-	-	-
	<b>103-3</b> Evaluation of the management approach	80 and 90	-	-	-
<b>GRI 302 - Energy 2016</b>	<b>302-1</b> Energy consumption within the organization	91	-	7, 8, 9	7, 8, 12, 13
	<b>302-2</b> Energy consumption outside the organization	91	-	8, 9	7, 8, 12, 13
	<b>302-3</b> Energy intensity	91	-	8, 9	7, 8, 12, 13

GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>Topics</b>					
<b>GRI 300 Environmental Series Standards</b>					
<b>Water</b>					
<b>GRI 103: Management approach 2018</b>	<b>103-1</b> Explanation of the material topic and its boundary	4	-	-	-
	<b>103-2</b> The management approach and its components	80 and 86	-	-	-
	<b>103-3</b> Evaluation of the management form	80 and 86	-	-	-
<b>GRI 303: Water 2018</b>	<b>303-1</b> Water interaction as a shared resource	87 and 89	-	7, 8, 9	6, 9, 11, 15
	<b>303-2</b> Management of water discharge related impacts	87	-	7, 8, 9	6, 9, 11, 15
	<b>303-3</b> Water withdrawal	109	-	7, 8	6, 9, 11, 15
	<b>303-4</b> Water discharge	110	8, 9	6, 9, 11, 15	6, 9, 11, 15
<b>Issuances</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	4	-	-	-
	<b>103-2</b> The management approach and its components	80 and 90	-	-	-
	<b>103-3</b> Evaluation of the management approach	80 and 90	-	-	-
<b>GRI 305: Emissions 2016</b>	<b>305-1</b> Direct (scope 1) GHG emissions	91	-	7, 8	3, 12, 13, 14, 15
	<b>305-2</b> Indirect emissions of greenhouse gases (GHG) from energy acquisitions (scope 2)	91	-	7, 8	3, 12, 13, 14, 15
	<b>305-3</b> Other indirect (scope 3) GHG emissions	91	-	7, 8	3, 12, 13, 14, 15
	<b>305-4</b> Greenhouse gas emissions (GHG) intensity	91	-	8, 9	14, 15
	<b>305-7</b> NOx, SOx and other significant air emissions	112	-	7, 8	3, 12, 14, 15
<b>Waste</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	4	-	-	-
	<b>103-2</b> The management approach and its components	80 and 81	-	-	-
	<b>103-3</b> Evaluation of the management approach	80 and 81	-	-	-
<b>GRI 306: Effluents and Waste 2016</b>	<b>306-2</b> Waste by type and disposal method	82 and 111	-	7, 8, 9	9, 12

GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>Topics</b>					
<b>GRI 300 Environmental Series Standards</b>					
<b>Environmental compliance</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	52	-	-	-
	<b>103-2</b> The management approach and its components	52 and 80	-	-	-
	<b>103-3</b> Evaluation of the management approach	52 and 80	-	-	-
<b>GRI 307: Environmental Compliance 2016</b>	<b>307-1</b> Non-compliance with environmental laws and regulations	112	-	8	16
<b>Environmental Evaluation of Suppliers</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	103	-	-	-
	<b>103-3</b> Evaluation of the management approach	103	-	-	-
<b>GRI 308: Environmental Evaluation of Suppliers 2016</b>	<b>308-1</b> New suppliers that were screened using environmental criteria	104	2, 8, 9	5, 8, 16	5, 8, 16
<b>GRI 400 Series Social Standards</b>					
<b>Employment</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	4	-	-	-
	<b>103-2</b> The management approach and its components	63	-	-	-
	<b>103-3</b> Evaluation of the management approach	63	-	-	-
<b>GRI 401: Employment 2016</b>	<b>401-1</b> New employee hires and turnover	112	Turnover Rate, as there is no management of this information.	6	5, 8
<b>Occupational Health and Safety</b>					
<b>GRI 103: Management approach 2018</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	72	-	-	-
	<b>103-3</b> Evaluation of the management approach	72	-	-	-
<b>GRI 403: Occupational Health and Safety 2018</b>	<b>403-2</b> Hazard identification, risk assessment and incident investigation	73	-	8	8
	<b>403-3</b> Occupational health services	79	-	8	8

GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>Topics</b>					
<b>GRI 400 Series Social Standards</b>					
<b>GRI 403: Saúde e Segurança no Trabalho 2018</b>	<b>403-4</b> Employee participation, consultation and communication on occupational health and safety	79	1	8, 16	8, 16
	<b>403-5</b> Worker training on occupational health and safety	74	-	3, 8	3, 8
	<b>403-6</b> Promotion of worker health	78	1	3, 8	3, 8
	<b>403-7</b> Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	77	1	3, 8	3, 8
	<b>403-9</b> Work-related Injuries	113	Information by gender of outsourced workers, as we do not manage the information.	-	3, 8
<b>Training and education</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	4	-	-	-
	<b>103-2</b> The management approach and its components	63 and 65	-	-	-
	<b>103-3</b> Evaluation of the management approach	63 and 65	-	-	-
<b>GRI 404: Training and Education 2016</b>	<b>404-1</b> Average hours of training per year per employee	113	-	6	4, 5, 8
	<b>404-2</b> Programs for upgrading employee skills and transition assistance programs.	65	-	6	8
	<b>404-3</b> Percentage of employees receiving regular performance and career development reviews	65	-	6	5, 8
<b>Diversity and equal opportunities</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	4	-	-	-
	<b>103-2</b> The management approach and its components	65 and 68	-	-	-
	<b>103-3</b> Evaluation of the management form	65 and 68	-	-	-
<b>GRI 405: Diversity and equal opportunity 2016</b>	<b>405-1</b> Diversity of governance bodies and employees	114	-	6	5, 8
	<b>405-2</b> Ratio of basic salary and remuneration of women to men	115	Base salary and remuneration of the CEO category, as it is confidential information	6	5, 8, 16



GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>Topics</b>					
<b>GRI 400 Series Social Standards</b>					
<b>Non-discrimination</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	52	-	-	-
	<b>103-2</b> The management approach and its components	52	-	-	-
	<b>103-3</b> Evaluation of the management form	52	-	-	-
<b>GRI 406: Non-discrimination 2016</b>	<b>406-1</b> Incidents of discrimination and corrective actions taken	53	6	5, 8, 16	5, 8, 16
<b>Freedom of association and collective bargaining</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	102 and 103	-	-	-
	<b>103-3</b> Evaluation of the management approach	102 and 103	-	-	-
<b>GRI 407: Freedom of association and collective bargaining 2016</b>	<b>407-1</b> Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	104	5	8, 16	8, 16
<b>Child labor</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	102 and 103	-	-	-
	<b>103-3</b> Evaluation of the management approach	102 and 103	-	-	-
<b>GRI 408: Child Labor 2016</b>	<b>408-1</b> Operations and suppliers at significant risk for incidents of child labor	104	5	8, 10, 16	8, 10, 16
<b>Forced or compulsory labor</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	102 and 103	-	-	-
	<b>103-3</b> Evaluation of the management approach	102 and 103	-	-	-
<b>GRI 409: Forced or Compulsory Labor 2016</b>	<b>409-1</b> Operations and suppliers with significant risk for the occurrence of forced or compulsory labor	104	-	4	8, 10, 16

GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>Topics</b>					
<b>GRI 400 Series Social Standards</b>					
<b>Human rights assessment</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	52, 102 and 103	-	-	-
	<b>103-3</b> Evaluation of the management approach	52, 102 and 103	-	-	-
<b>GRI 412: Human rights assessment 2016</b>	<b>412-1</b> Operations that have been subject to human rights reviews or impact assessments	100% of Nexa's operations are subjected to human rights related analyses or assessments.	-	1	-
	<b>412-2</b> Total number of employee training hours regarding human rights or procedures related to human rights matters material to the Organization's operations, including the percentage of trained employees	52 and 103	-	1	-
<b>Local communities</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	92	-	-	-
	<b>103-3</b> Evaluation of the management approach	92	-	-	-
<b>GRI 413: Local Communities 2016</b>	<b>413-1</b> Operations with local community engagement, impact assessments and development programs	93	-	1	2, 4, 5, 8, 10, 11, 12, 14, 16
<b>Social assessment of suppliers</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	5	-	-	-
	<b>103-2</b> The management approach and its components	103	-	-	-
	<b>103-3</b> Evaluation of the management approach	103	-	-	-
<b>GRI 414: Supplier Social Assessment 2016</b>	<b>414-1</b> New suppliers that were screened using social criteria	104	-	2	5, 8, 16

GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>Topics</b>					
<b>GRI 400 Series Social Standards</b>					
<b>Socio-economic compliance</b>					
<b>GRI 103: Management approach 2016</b>	<b>103-1</b> Explanation of the material topic and its boundary	52	-	-	-
	<b>103-2</b> The management approach and its components	52	-	-	-
	<b>103-3</b> Evaluation of the management approach	52	-	-	-
<b>GRI 419: Socio-economic Compliance 2016</b>	<b>419-1</b> Non-compliance with laws and regulations in the social and economic area with respect to products and services	115	-	10	16
<b>Mining sector</b>					
	<b>MM1</b> Quantity of land (owned, leased or managed for production or extraction activities) that was altered or has already been restored	115	-	7, 8	-
	<b>MM2</b> Total number and percentage of areas identified with the need to implement Biodiversity Management Plans (PGBs) and the number of areas with implemented plans	116	-	7, 8	-
	<b>MM3</b> Total quantities of sterile, tailings and sludge and their associated risks	82	-	7, 8, 9	-
	<b>MM4</b> Number of strikes and work stoppages lasting more than one week per country	There were no strikes during a period greater than 7 days	-	-	-
	<b>MM5</b> Total number of operations located in territories of indigenous peoples or adjacent to them, and number and percentage of operations or units where there are formal agreements with communities of indigenous peoples	No Nexa operations are located on indigenous or adjacent lands.	-	-	-

GRI Standard	Disclosure	Page and/or link	Omission	Global Compact	SDG
<b>Topics</b>					
<b>Mining sector</b>					
	<b>MM6</b> Number and description of significant conflicts related to land use and customary rights of local communities and indigenous peoples	In 2018, there was a conflict with the population of San Juan de Milpo, in the Pasco region of Peru, related to land use.	-	-	-
	<b>MM8</b> Number (and percentage) of operational units where small-scale and artisanal mining (ASM) occurs, what are the associated risks and the actions taken to manage and mitigate those risks	We do not have artisanal or small-scale mining areas. For any new project or change in the operation of the units, our system requires a risk assessment.	-	-	-
	<b>MM9</b> Places where resettlements occurred, the number of families settled in each, and how their livelihoods were affected in these processes	There were no cases of resettlement.	-	1, 2	-
	<b>MM10</b> Number and percentage of operations with plans for the closure of activities (decommissioning plan)	116	-	-	-

# Letter of External Assurance

## Independent auditor's limited assurance report on information related to sustainability included in the Annual Report for 2018

To the Board of Directors and Stockholders  
Nexa Recursos Minerais S.A.  
São Paulo - SP

### Introduction

We have been engaged by Nexa Recursos Minerais S.A. ("Nexa" or "Company") to present our limited assurance report on the compilation of sustainability information included in Nexa's 2018 Annual Report for the year ended December 31, 2018.

### Responsibilities of the Company's management

The management of Nexa is responsible for the preparation and fair presentation of the information included in the Annual Report for 2018, in accordance with the Global Reporting Initiative (GRI Standards) and for such internal control as it determines is necessary to enable the preparation of information free from material misstatement, whether due to fraud or error.

### Independent auditor's responsibilities

Our responsibility is to express a conclusion on the information included in the Annual Report for 2018 based on our limited assurance engagement carried out in accordance with the Technical Communication CTO 01 - "Issuance of an Assurance Report related to Sustainability and Social Responsibility", issued by the Federal Accounting Council (CFC), based on the Brazilian standard NBC TO 3000 - "Assurance Engagements Other than Audit and Review", also issued by the CFC, which is equivalent to the international standard ISAE 3000, "Assurance engagements other than audits or reviews of historical financial information", issued by the International Auditing and Assurance Standards Board (IAASB). Those standards require that we comply with ethical and independence requirements and other responsibilities

in accordance with those standards, including the application of the Brazilian Quality Control Standard (NBC PA 01) and, therefore, the maintenance of a comprehensive quality control system, including policies documented and procedures on compliance with applicable ethical requirements, professional standards and legal and regulatory requirements.

Additionally, those standards require that the engagement be planned and performed to obtain limited assurance that the information included in the 2018 Annual Report, taken as a whole, is free from material misstatements.

A limited assurance engagement conducted in accordance with the Brazilian standard NBC TO 3000 and ISAE 3000 mainly consists of making inquiries of management and other professionals of the entity involved in the preparation of the sustainability information, as well as applying analytical procedures to obtain evidence that enables the issue of a limited assurance conclusion on the information taken as a whole. A limited assurance engagement also requires the performance of additional procedures when the independent auditor becomes aware of matters that lead the auditor to believe that the information taken as a whole might present significant misstatements.

The procedures selected are based on our understanding of the compilation and presentation of the sustainability information included in the 2018 Annual Report, other aspects affecting the engagement and our analysis of areas which might potentially present significant misstatements. The following procedures were adopted:

- planning the work, taking into consideration the materiality and the volume of quantitative and qualitative information and the operating and internal control systems that were used to prepare the information included in Nexa's 2018 Annual Report;
- understanding the calculation methodology and the procedures adopted for the compilation of indicators through interviews with the managers responsible for the preparation of the information;
- applying analytical procedures to quantitative information and making inquiries regarding the qualitative information and its correlation with the indicators disclosed in the information included in the Annual Report for 2018; and
- comparing the financial indicators with the financial statements and/or accounting records.

The limited assurance engagement also included procedures to assess compliance with the guidelines and criteria of the Global Reporting Initiative (GRI Standards) applied in the compilation of the sustainability information in the Annual Report for 2018.

We believe that the evidence we obtained is sufficient and appropriate to provide a basis for our limited assurance conclusion.

### Scope and limitations

The procedures applied in a limited assurance engagement are substantially less detailed than those applied in a reasonable assurance engagement, the objective of which is the issuance of an opinion on the sustainability information included in the Annual Report for 2018. Consequently, we are not able to obtain reasonable assurance that we would become aware of all significant matters that might be identified in an assurance engagement, the objective of which is the issue of an opinion. If we had performed an engagement with the objective of issuing an opinion, we might have identified other matters and possible misstatements in the sustainability information in the 2018 Annual Report. Accordingly, we do not express an opinion on this information.

Non-financial data is subject to more inherent limitations than financial data, due to the nature and diversity of the methods used to determine, calculate and estimate this data. Qualitative interpretations of the relevance, materiality, and accuracy of the data are subject to individual assumptions and judgments. Furthermore, we did not consider in our engagement the data reported for prior periods, nor future projections and goals.

The preparation and presentation of sustainability indicators followed the criteria of the GRI-Standards and, therefore, were not designed to assure compliance with laws and social, economic, environmental or engineering regulations. However, those standards require the presentation and disclosure of possible cases of non-compliance with regulations to avoid sanctions or significant fines. Our assurance report should be read and considered in this respect, in the context to the selected criteria (GRI Standards).

### Conclusion

Based on the procedures performed, described herein, no matter has come to our attention that causes us to believe that the information included in the Annual Report for 2018 of Nexa Resources S.A. has not been compiled, in all material respects, in accordance with the Global Reporting Initiative (GRI Standards).

São Paulo, April 9, 2019

**PricewaterhouseCoopers  
Contadores Públicos Ltda.  
CRC 2SP023.173/O-4**

Eliane Kihara  
Contadora CRC 1SP212.496/O-5

## Forward-looking Statements

This report contains certain forward-looking information and forward-looking statements as defined in applicable securities laws (collectively referred to in this report as “forward-looking statements”). All statements other than statements of historical fact are forward-looking statements. Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Nexa to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. These forward-looking statements include estimates, forecasts, and statements as to management’s expectations with respect to the business and operations of the Company and mining production and smelting sales, Capex and Opex related to exploration and development of projects.

Forward-looking statements are necessarily based upon a number of factors and assumptions that, while considered reasonable by management, are inherently subject to significant business, economic and competitive uncertainties and contingencies. Statements concerning future production costs or volumes are based on numerous assumptions of management regarding operating matters and on assumptions that demand for products develops as anticipated, that customers and other counterparties perform their contractual obligations, that operating and capital plans will not be disrupted by issues such as mechanical failure, unavailability of parts and supplies, labor disturbances, interruption in transportation or utilities, adverse weather conditions, and that there are no material unanticipated variations in the cost of energy or supplies.

We assume no obligation to update forward-looking statements except as required under securities laws. Further information concerning risks and uncertainties associated with these forward-looking statements and our business can be found in our public disclosures filed under our profile on Sedar ([www.sedar.com](http://www.sedar.com)) and on Edgar ([www.sec.gov](http://www.sec.gov)).

## Corporate Information

### Board of Directors

- Luis Ermírio de Moraes – Chairman
- Daniella Dimitrov
- Diego Cristóbal Hernandez Cabrera
- Eduardo Borges de Andrade Filho
- Edward Ruiz
- Ivo Ucovich
- Jane Sadowsky
- Jean Simon
- João Henrique Batista de Souza Schmidt

### Executive Board

- Tito Martins – President and CEO Nexa
- Arlene Heiderich Domingues – Vice President of Human Resources and Institutional Relations
- Felipe Guardiano – Vice President of Sustainability and Strategic Planning
- Jones Aparecido Belther – Senior Vice President Mineral Exploration and Technology
- Leonardo Nunes Coelho – Senior Vice President Mining
- Rodrigo Menck – Senior Vice President of Finance and Group CFO
- Mauro Boletta – Senior Vice President Smelting
- Ricardo Porto – Senior Vice President of Sales, Supply & Logistics and Director President Nexa Peru
- Valdecir Botassini – Senior Vice President Project Development and Execution

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Financial and Investor Relations Department:  
Rodrigo Menck

Department of Sustainability: Benedito Fernando Dario

Investor Relations Department: Roberta Pimphari Varella

**Coordination:** Aricely Lamontanha e Luiz Perez

**Teams:** Sustainability, Corporate Communication and Investor Relations

We appreciate the support and cooperation of the managers and other colleagues involved in the corporate and industrial areas of Nexa Resources, for information calculation and analysis.

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Comments, suggestions, doubts or criticisms regarding the content, as well as our operations and initiatives in Brazil and abroad, can be sent through the following channel: [nexa@nexaresources.com](mailto:nexa@nexaresources.com) GRI 102-53

**nexa**