As filed with the Securities and Exchange Commission on April 27, 2023

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 20-F

☐ REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

☐ SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number 1-14732

COMPANHIA SIDERÚRGICA NACIONAL

(*Exact name of registrant as specified in its charter*)

NATIONAL STEEL COMPANY

(*Translation of registrant's name into English*)

THE FEDERATIVE REPUBLIC OF BRAZIL

(*Jurisdiction of incorporation or organization*)

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(*Address of principal executive offices*)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of each class	Trading symbol	Name of each exchange on which registered
Common Shares without Par Value	*	NYSE
American Depositary Shares (as evidenced by American Depositary Receipts), each representing one share of Common Stock	SID	NYSE

* Not for trading purposes, but only in connection with the registration of American Depositary Shares pursuant to the requirements of the U.S. Securities and Exchange Commission.

Securities registered or to be registered pursuant to Section 12(g) of the Act:
None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:
None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of December 31, 2022:

1,326,093,947 Common Shares without Par Value

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

☑ Yes ☐ No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

☐ Yes ☑ No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

☑ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

☑ Yes ☐ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or an emerging growth company. See definition of "large accelerated filer," "accelerated filer" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☑ Accelerated filer ☐ Non-accelerated filer ☐ Emerging growth company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards† provided pursuant to Section 13(a) of the Exchange Act.

† The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

☑ Yes ☐ No

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

☐ Yes ☑ No

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

☐ Yes ☐ No

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP ☐	International Financial Reporting Standards as issued by the International Accounting Standards Board ☑	Other ☐

If “Other” has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow:

Item 17 ☐ Item 18 ☐

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

☐ Yes ☑ No

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INTRODUCTION

Unless otherwise specified, all references in this annual report to:

- "we," "us," "our" or "CSN" are to Companhia Siderúrgica Nacional and its consolidated subsidiaries;
- "Brazil" are to the Federative Republic of Brazil;
- "Brazilian government" are to the federal government of Brazil;
- "*real,*" "*reais*" or "R$" are to Brazilian *reais*, the official currency of Brazil;
- "U.S. dollars" or "US$" are to United States dollars;
- "km" are to kilometers, "m" are to meters, "mt" or "tons" are to metric tons, "mtpy" are to metric tons per year, "MW" are to megawatts, "MWh" are to megawatt hours and "MWavg" are to average megawatts;
- "TEUs" are to twenty-foot equivalent units;
- "consolidated financial statements" are to our audited consolidated financial statements prepared in accordance with International Financial Reporting Standards, or IFRS, as issued by the International Accounting Standards Board, or IASB, as of December 31, 2022 and 2021 and for the years ended December 31, 2022, 2021 and 2020, together with the corresponding report of our independent registered public accounting firm; and
- "ADSs" are to the American depositary shares and "ADRs" are to the American depositary receipts representing our common shares.

FORWARD-LOOKING STATEMENTS

This annual report includes forward-looking statements, within the meaning of Section 27A of the U.S. Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the U.S. Securities Exchange Act of 1934, as amended, or the Exchange Act, principally under the captions "Item 3. Key Information," "Item 4. Information on the Company," "Item 5. Operating and Financial Review and Prospects" and "Item 11. Quantitative and Qualitative Disclosures About Market Risk." We have based these forward-looking statements largely on our current beliefs, expectations and projections about future events and financial trends affecting us. Although we believe these estimates and forward-looking statements are based on reasonable assumptions, these estimates and statements are subject to several risks and uncertainties and are made in light of the information currently available to us.

Many important factors, in addition to those discussed elsewhere in this annual report, could cause our actual results to differ substantially from those anticipated in our forward-looking statements, including, among others:

- general economic, political and business conditions in Brazil and abroad, especially in China, which is the largest world steel producer and main consumer of our iron ore;
- demand for and prices of steel, iron ore and cement products;
- effects of the global financial markets and economic slowdowns, including the banking crisis in early 2023;
- changes in competitive conditions and the general level of demand and supply for our products;
- our liquidity position and leverage and our ability to obtain financing on satisfactory terms;
- management's expectations and estimates concerning our future financial performance and financing plans;
- availability and price of raw materials and increased fuel prices resulting from the ongoing conflict between Russia and Ukraine;
- changes in international trade or international trade regulations, including protectionist measures imposed by Brazil and other countries;

- our capital expenditure plans, including in order to address our physical risks and transition risks relating to climate change;
- inflation, interest rate levels and fluctuations in foreign exchange rates;
- our ability to develop and deliver our products on a timely basis;
- lack of infrastructure in Brazil;
- energy, natural gas and water shortages and government responses to these;
- downgrades in Brazil's credit ratings;
- changes in laws and regulations affecting mining companies and steel and cement producers, including laws and regulations relating to climate change and other environmental matters;
- increased operating costs, including labor costs, and increased tariffs, taxes or social contribution costs;
- availability of adequate insurance coverage for our operations; and
- the risk factors discussed under the caption "Item 3. Key Information—3D. Risk Factors."

We caution you that the foregoing list of significant factors may not contain all of the material factors that are important to you. The words "aim," "anticipate," "believe," "continue," "estimate," "expect," "intend," "may," "plan," "will" and similar words are intended to identify forward-looking statements. Forward-looking statements include information concerning our possible or assumed results of operations, business strategies, financing plans, competitive position, industry environment, potential growth opportunities, the effects of regulation and the effects of competition, among other things.

Forward-looking statements speak only as of the date they were made, and we undertake no obligation to publicly update or to revise any forward-looking statements after we distribute this annual report because of new information, future events or other factors. In light of the risks and uncertainties described above, the forward-looking events and circumstances discussed in this annual report might not occur and are not an indication of future performance. As a result of various factors, including those set forth above, undue reliance should not be placed on these forward-looking statements.

PRESENTATION OF FINANCIAL AND OTHER INFORMATION

Our audited consolidated financial statements as of December 31, 2022 and 2021 and for the years ended December 31, 2022, 2021 and 2020 included elsewhere in this annual report have been presented in thousands of *reais* and prepared in accordance with IFRS as issued by the IASB. See note 2.a. to our audited consolidated financial statements included elsewhere in this annual report.

We have translated some of the Brazilian *real* amounts contained in this annual report into U.S. dollars solely for the convenience of the reader at the rate of R$5.2177 to US$1.00, which was the U.S. dollar selling rate as of December 31, 2022, as reported by the Central Bank of Brazil, or the Central Bank. As a result of fluctuations in the *real*/U.S. dollar exchange rate, the U.S. dollar selling rate as of December 31, 2022 may not be indicative of current or future exchange rates. The U.S. dollar equivalent information presented in this annual report should not be construed as implying that the *real* amounts represent, or could have been or could be converted into, U.S. dollars at such rates or at any other rate.

Certain figures included in this annual report have been subject to rounding adjustments. Accordingly, figures shown as totals in certain tables may not represent an arithmetic sum of the figures that precede them.

Non-IFRS Financial Measure

This annual report includes certain references to the non-IFRS measure of EBITDA.

We calculate EBITDA as net income (loss) for the period *plus* net financial income (expenses), income tax and social contribution, depreciation and amortization and results from discontinued operations. EBITDA is not a measure of financial performance recognized under IFRS and it should not be considered an alternative to net income (loss) as a measure of operating performance, or as an alternative to operating cash flows, or as a measure of liquidity. EBITDA is not calculated using a standard methodology and may not be comparable to the definition of EBITDA, or similarly titled measures, used by other companies.

PART I

Item 1. Identity of Directors, Senior Management and Advisors

Not applicable.

Item 2. Offer Statistics and Expected Timetable

Not applicable.

Item 3. Key Information

3A. [Reserved]

3B. Capitalization and Indebtedness

Not applicable.

3C. Reasons for the Offer and Use of Proceeds

Not applicable.

3D. Risk Factors

An investment in the ADSs or our common shares involves a high degree of risk. You should carefully consider the risks described below before making an investment decision. Our business, financial condition and results of operations could be materially and adversely affected by any of these risks. The trading price of the ADSs could decline due to any of these risks or other factors, and you may lose all or part of your investment.

For purposes of this section, when we state that a risk, uncertainty or problem may, could or will have an "adverse effect" on us or "adversely affect" us, we mean that the risk, uncertainty or problem could have an adverse effect on our business, financial condition, results of operations, cash flow, prospects and/or the trading price of the ADSs, except as otherwise indicated. The risks described below are those that we currently believe may materially and adversely affect us.

Risks Relating to Brazil

The Brazilian government has exercised, and continues to exercise, significant influence over the Brazilian economy and such involvement, along with general political and macroeconomic conditions, could adversely affect us.

The Brazilian government has frequently intervened in the Brazilian economy and occasionally made changes in policy and regulations. The Brazilian government's actions to control inflation and affect policies and regulations have often involved, among other measures, increases in interest rates, changes in tax and social security policies, price controls, currency exchange and remittance controls, devaluations, capital controls and limits on imports. We may be adversely affected by changes in policy or regulations at the federal, state or municipal level involving or affecting the following factors, among others:

- interest rates;
- exchange controls;
- currency fluctuations;
- inflation;
- price volatility of raw materials and our final products;
- lack of infrastructure in Brazil;
- energy and water supply shortages and rationing programs;
- liquidity of the domestic capital and lending markets;
- regulatory policy for the mining, steel, cement, logistics and energy industries;
- environmental policies and regulations;

- tax policies and regulations, including frequent changes that may result in uncertainties regarding future taxation; and
- other political, social and macroeconomic developments in or affecting Brazil.

Uncertainty over whether the Brazilian government will implement changes in policy or regulation affecting these or other factors may contribute to economic uncertainty in Brazil and to heightened volatility in the Brazilian securities markets and securities issued by Brazilian companies, including our common shares and the ADSs that represent them.

According to the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística*), or the IBGE, Brazil's gross domestic product, or GDP, sharply contracted by 4.1% in 2020 due to global effects of developments relating to the COVID-19 pandemic and grew by 4.6% and 2.9% in 2021 and 2022, respectively. Developments in the Brazilian economy may affect Brazil's growth rates and, consequently, demand for our products, and we have been, and will continue to be, affected by changes in the Brazilian GDP.

Political instability may adversely affect us.

Brazilian markets experienced heightened volatility in the last decade due to uncertainties deriving from ongoing investigations relating to unlawful payments, as part of which numerous members of the Brazilian government, as well as senior officers of large state-owned and private companies have been convicted of political corruption of officials accepting bribes by means of kickbacks on contracts granted by the government to infrastructure, oil and gas and construction companies.

The ultimate outcome of these investigations remains uncertain, but these investigations have had an adverse impact on the image and reputation of the implicated companies, as well as on the general market perception of the Brazilian economy.

In October 2022, Brazil held elections for President, senators, federal deputies and state deputies. Former President Luiz Inácio Lula da Silva won the election. Uncertainty regarding political developments and the policies the Brazilian federal government may adopt or alter may have material adverse effects on the macroeconomic environment in Brazil, as well as on businesses operating in Brazil, including ours.

Exchange rate instability may adversely affect us and the market price of our common shares and the ADSs.

The Brazilian currency has, during the last decade, experienced frequent and substantial variations compared to the U.S. dollar and other foreign currencies. In 2020 and 2021, the *real* depreciated against the U.S. dollar and the U.S. dollar selling rate was R$5.1967 per US$1.00 as of December 31, 2020 and R$5.5805 per US$1.00 as of December 31, 2021, as reported by the Brazilian Central Bank. In 2022, the *real* appreciated against the U.S. dollar and the U.S. dollar selling rate was R$5.2177 per US$1.00 as of December 31, 2022.

Depreciation of the *real* against the U.S. dollar creates inflationary pressures in Brazil and causes increases in interest rates, which adversely affect the growth of the Brazilian economy as a whole, curtail access to foreign financial markets and may prompt government intervention, including recessionary governmental policies. Depreciation of the *real* against the U.S. dollar may also, in the context of an economic slowdown, lead to decreased consumer spending, deflationary pressures and reduced growth of the Brazilian economy.

On the other hand, appreciation of the *real* relative to the U.S. dollar and other foreign currencies could lead to a deterioration of the Brazilian foreign exchange current accounts, as well as dampen export-driven growth. Depending on the circumstances, either depreciation or appreciation of the *real* could materially affect our growth and that of the Brazilian economy, as well as impact the U.S. dollar value of distributions and dividends on, and the U.S. dollar equivalent of the market price of, our common shares and the ADSs.

In the event the *real* depreciates in relation to the U.S. dollar, the cost in *reais* of our foreign currency-denominated borrowings and imports of raw materials, particularly coal and coke, will increase. On the other hand, if the *real* appreciates in relation to the U.S. dollar, it will cause *real*-denominated production costs to increase as a percentage of total production costs and cause our exports to be less competitive. We have a total U.S. dollar-denominated or U.S. dollar-linked indebtedness of R$25,026 million, which represents 60.4% of our total indebtedness, as of December 31, 2022.

Government efforts to combat inflation may hinder the growth of the Brazilian economy and could harm us.

Historically, Brazil has experienced high inflation rates. Inflation and certain actions taken by the Central Bank to curb it have had significant negative effects on the Brazilian economy. Inflation as measured by the national broad consumer price index (*Índice Nacional de Preços ao Consumidor Amplo)*, or IPCA, was 4.5%, 10.1% and 5.8% in 2020, 2021 and 2022, respectively, and 23.1%, 23.1% and 17.8%, respectively, as measured by the general market price index (*Índice Geral de Preços do Mercado*), or IGP-M.

The base interest rate for the Brazilian banking system is the Central Bank's Special System for Settlement and Custody (*Sistema Especial de Liquidação e Custódia*) rate, or SELIC rate. The SELIC rate was repeatedly lowered from the October 2016 rate of 14.25% to 2.00% in August 2020 and has since steadily increased. As of December 31, 2020, 2021 and 2022, the SELIC rate was 2.0%, 9.25% and 13.75%, respectively. As of the date of this annual report, the SELIC rate remains 13.75%.

Inflation and the Brazilian government's measures to address it, principally the Central Bank's monetary policy, have had and may have significant effects on the Brazilian economy and us. Tight monetary policies with high interest rates have restricted and may restrict Brazil's growth and the availability of credit. Conversely, more lenient government and Central Bank policies and interest rate decreases have triggered and may trigger increases in inflation, and, consequently, growth volatility and the need for sudden and significant interest rate increases, which could negatively affect us and increase the payments on our indebtedness.

Developments and the perception of risk in other countries, especially other emerging market countries, may adversely affect the trading price of Brazilian securities, including our common shares and the ADSs.

The market value of securities of Brazilian issuers is affected by economic and market conditions in other countries, especially other emerging market countries. Although economic conditions in these countries may differ significantly from economic conditions in Brazil, investors' reactions to developments in these other countries may have an adverse effect on the market value of securities of Brazilian issuers. Crises in the United States, the European Union or emerging market countries may diminish investor interest in securities of Brazilian issuers, including ours. This could adversely affect the trading price of our common shares and/or the ADSs, and could also make it more difficult for us to gain access to the capital markets and finance our operations on acceptable terms, or at all.

Further, crises in world financial markets, such as in 2020 and the banking crisis in early 2023, as well as global economic challenges that persist as of the date of this annual report, could affect investors' views of securities issued by companies that operate in emerging markets. These developments could adversely affect the trading price of our common shares and the ADSs, and could also make it more difficult for us to access the capital markets and finance our operations on acceptable terms, or at all.

Developments since early 2022 relating to Russia's conflict with Ukraine and the developments in early 2023 relating to global financial institutions have generated uncertainty in global markets, and U.S. and European stock markets have seen increased price volatility. We cannot predict how these developments will evolve and whether or to what extent they may affect Brazilian capital markets and, consequently, us.

Risks Relating to Us and the Industries in Which We Operate

We are exposed to substantial changes in the demand for steel and iron ore, which significantly affect the prices of our products and may adversely affect us.

The steel and mining industries are highly cyclical, both in Brazil and abroad. The demand for steel and mining products and, thus, the financial condition and results of operations of companies in these industries, including us, are generally affected by macroeconomic fluctuations in the world economy and the economies of steel-producing countries, including trends in the automotive, construction, home appliances and packaging industries, as well as other industries that rely on steel distributors. A worldwide recession, an extended period of below-trend growth in developed countries or a slowdown in the emerging markets that are large consumers of our products (such as the domestic Brazilian market for our steel products and the Chinese market for iron ore) could sharply reduce demand for our products. In addition, flat steel competes with other materials that may be used as substitutes, such as aluminum (particularly in the automotive and packaging industry), cement, composites, glass, plastic and wood. Government regulatory initiatives mandating the use of such materials in lieu of steel, whether for environmental or other reasons, as well as the development of other new substitutes for steel products, could also significantly reduce market prices and demand for steel products and thereby reduce our cash flow and profitability. Any material decrease in demand or increase in supply for steel and iron ore in the domestic or export markets served by us could have a material adverse effect on us.

Prices charged for iron ore are subject to volatility. International iron ore prices may decrease significantly and materially and adversely affect us or require us to suspend certain of our projects and operations.

Our iron ore prices are based on a variety of pricing terms, which generally use market price indices as a basis for determining customer prices. Our prices for and revenues from iron ore are consequently volatile, which may adversely affect us. In the first quarter of 2023, average iron ore prices decreased 11.4% to US$125.5/dmt, from US$141.6/dmt in the same period of 2022. In 2022, average iron ore prices decreased 24.6% to US$120.2/dmt, from US$159.5/dmt in 2021, in each case according to the average Platts iron ore index (62% Fe CFR China). A decrease in market prices for iron ore may require us to change the way we operate or, depending on the magnitude of price decreases, even to suspend certain of our projects and operations and impair certain assets, which could adversely affect us.

Adverse economic conditions in China and an increase in global iron ore production capacity could materially and adversely affect us.

China has been the main driver of global demand for minerals and metals over the past years, effectively driving global prices for iron ore and steel. In 2022, China accounted for 73% of the global seaborne iron ore trade and 77% of our iron ore export sales were to the Asian market, mainly China. China is also the largest steel producer in the world, accounting for approximately 53% of the global steel production in 2022.

A contraction of China's economic growth could result in lower global demand for iron ore and steel and increase the global steel industry's over-capacity, which would materially and adversely affect companies in the industry, including us. Poor performance in the Chinese real estate sector and low investments in infrastructure, two of the largest markets for carbon steel in China, could also adversely affect us. As a result of fiscal and monetary stimuli to counter the effects of the COVID-19 pandemic, China's economic growth accelerated and its GDP increased 3.0% in 2022, as compared to 8.1% in 2021 and 2.3% in 2020. In December 2022, China began lifting its zero-COVID restrictions, which we expect to have a favorable impact on demand for, and consequently prices of, iron ore in 2023. However, we cannot assure that the Chinese government will not reimplement restrictions, which could materially and adversely affect market dynamics for our products and, consequently, us. In addition, developments relating to China's real estate market have affected and could further affect us.

In addition, the ramp-up of projects started in past years by major iron ore suppliers could affect seaborne iron ore prices and adversely affect us. Moreover, the recent upsurge in iron ore prices could also stimulate high-cost producers to resume operations, expanding our supply base, which may adversely affect us.

We are exposed to substantial changes in commodities prices, including oil prices, which significantly affect the prices of our inputs and the prices of our products, and may adversely affect us.

We are subject to volatility in international commodities prices. This volatility affects the prices of certain of our inputs, such as oil, and may therefore adversely affect our results of operations. In 2022, oil prices increased steeply, largely due to recent global developments relating to Russia's conflict with Ukraine. Because Russia is one of the world's largest oil exporters, we expect global developments relating to Russia's invasion of Ukraine, and resulting export restrictions, to result in a consistently decreased global supply and, consequently, higher fuel prices. International commodity price volatility may also affect the prices of our products, thereby having an impact on our pricing strategy, demand for our products and our results of operations.

We may not be able to adjust our mining production volume in a timely or cost-efficient manner in response to changes in demand.

Revenues from our mining business represented 42.1%, 37.7% and 28.2% of our total net revenues in 2020, 2021 and 2022, respectively. Operating at significant idle capacity during periods of weak demand may expose us to higher unit production costs since a significant portion of our cost structure is fixed in the short term due to the high capital intensity of mining operations. In addition, efforts to reduce costs during periods of weak demand could be limited by labor regulations or labor or government agreements.

Conversely, our ability to rapidly increase production capacity is limited, which could render us unable to fully satisfy demand for our iron ore. When demand exceeds our production capacity, we may meet excess customer demand by purchasing iron ore from unrelated parties and reselling it, which would increase our costs and narrow our operating margins. If we are unable to satisfy excess customer demand in this way, we may lose customers. In addition, operating close to full capacity may expose us to higher costs, including demurrage fees due to capacity restraints in our logistics systems.

A decrease in the availability or an increase in the price of raw materials for steel production, particularly coal and coke, may adversely affect us.

In 2022, raw material costs accounted for 70.0% of our total steel production costs. Our main raw materials include iron ore, coal, coke, limestone, dolomite, manganese, zinc, tin and aluminum. We depend on third parties for some of our raw material requirements, including importing all of the coal required to produce coke. In addition, we require significant amounts of energy, in the form of natural gas and electrical energy, to power our plants and equipment.

Any prolonged interruption in the supply of raw materials, natural gas or electrical energy, or substantial increases in their prices, could materially and adversely affect us. Interruptions and price increases could result from changes in laws or trade regulations, the availability and cost of transportation, suppliers' allocations to other purchasers, interruptions in production by suppliers and/or accidents or similar events on suppliers' premises or along the supply chain. Any inability to pass these cost increases onto our customers or to meet our customer demand because of scarcity of our key raw materials could also have a material and adverse effect on us.

Our steel products face significant competition, including price competition, from other domestic or foreign producers, which may adversely affect our profitability and market share.

The global steel industry is highly competitive with respect to price, product quality, customer service and technological advances permitting reduced production costs. Several factors influence Brazil's export of steel products, including protectionist policies of other countries, especially the United States, disputes regarding these policies before the World Trade Organization, the Brazilian government's exchange rate policy and the growth rate of the world economy. Further, continuous advances in materials sciences and technology have given rise to improvements in products such as plastics, aluminum, ceramics and glass, permitting them to serve as substitutes for steel. Due to high start-up costs, the economics of operating a steelworks facility on a continuous basis may encourage mill operators to maintain high levels of output, even in times of low demand, which results in oversupply and increases the pressure on industry profit margins. In addition, downward pressure on steel prices by our competitors may affect our profitability.

The steel industry has historically suffered from structural over-capacity which has worsened due to a substantial increase in production capacity in the developing world, particularly China and India, as well as other emerging markets. China is the largest global steel producer and, in addition, Chinese and certain steel exporting countries have favorable conditions (excess steel capacity, undervalued currency or higher market prices for steel in non-domestic markets), which can have a significant impact on steel prices in other markets. If we are not able to remain competitive in relation to competitors in China or other steel-producing countries, we may be adversely affected.

Steel companies in Brazil face strong competition from imported products, mainly as a result of the global excess in steel production, reduction in demand for steel products in mature markets, exchange rate appreciation and tax incentives in some of the main exporting countries. Despite Brazilian import duties to protect domestic producers, a substantial volume of steel products is imported. If the Brazilian government does not implement measures against subsidized steel imports and there is an increase in imports, we may be materially and adversely affected. Apart from direct steel imports, the Brazilian industry also faces competition from imported finished goods, which adversely affects the whole steel supply and production chain.

Protectionist and other measures adopted by foreign governments could adversely affect our export sales.

In response to increased production and steel exports from many countries, anti-dumping and countervailing duty and safeguard measures have been imposed by foreign governments representing the main markets for our exports. In 2021, the International Trade Commission, or ITC, initiated its five-year "sunset review" of the anti-dumping and countervailing duty orders for both hot-rolled and cold-rolled products. As a result of these reviews, the orders for both products were revoked in 2022. Additionally, in 2021, the European Commission initiated an anti-dumping investigation of electrolytic chromium coated steel (tin-free steel) products imported from Brazil and China. This investigation resulted in anti-dumping duties on the exports of tin-free steel from Brazil into the European Union. In 2022, the European Commission initiated its five-year "sunset review" of the anti-dumping duties on hot-rolled steel, which results are expected in the last quarter of 2023.

Since 2018, Brazil has been party to an agreement with the United States that established quotas for semi-finished steel products and quotas for finished steel products based on average exports. Any suspension or termination of this agreement may materially and adversely affect us. In 2021, the European Commission extended safeguard measures on imports of hot-rolled, cold-rolled, and tin mill products and maintained quotas for the next three years. In December 2022, the European Commission initiated a review process to determine whether such measures should be terminated one year earlier than planned.

For more information on protectionist measures, see "Item 4. Information on the Company—4B. Business Overview—Regulatory Matters—Protectionist Measures." The imposition of these and other protectionist measures by foreign countries may materially and adversely affect our export sales.

Measures adopted by, or conflicts between, foreign governments could adversely affect us.

Recent global developments relating to Russia's conflict with Ukraine have generated significant uncertainty in global commodities and financial markets, and the global steel market, among others, has shown indications of instability. Misalignment between supply and demand in the international steel market may adversely affect our pricing strategy, undermine our investment strategy and adversely affect us. Misalignment could result from, among other things, international embargoes between governments or suspended international steel production due to significant increases in the prices of raw materials or, in the case of certain companies, proximity to conflict zones.

Our activities depend on authorizations, concessions, licenses and permits, and changes in applicable laws, regulations or government measures could adversely affect us.

Our activities and the activities of our subsidiaries and joint ventures are subject to governmental authorizations, concessions, licenses and permits, which include environmental licenses, as well as water grants, for our infrastructure projects and concessions, including for the port terminals we operate and the railways in which we have an equity interest. We cannot guarantee that we will be able to maintain, renew or obtain any required authorization, concession, license or permit, or that no additional requirement will be imposed on us in connection with our requests.

Authorizations, concessions, licenses or permits required for the development of our activities may require that we meet certain performance thresholds or completion milestones. In case we are unable to meet these thresholds or milestones, we may lose or not be able to obtain or renew such authorizations, concessions, licenses or permits, or we may not be able to do so under the terms of new concession laws, claims for amicable contractual termination and subsequent re-bidding for concessions. We also cannot guarantee that we, our subsidiaries or our joint ventures that hold concessions will timely comply with our or their obligations under any relevant concession agreement or under conduct adjustment agreements (*Termos de Ajustamento de Conduta*), or TACs, entered into with governmental agencies. In addition, we are subject to supervision and penalties from governmental entities, including the Brazilian court of audit (*Tribunal de Contas da União*), or TCU, and regulatory agencies. A material breach of those obligations may result in the loss or early termination of concessions, authorizations, permits and/or licenses, the restriction of access to public financing for the concession or the amortization of public financing before a project begins to operate, or the acceleration of an event of default under our indebtedness. Additionally, we would be subject to penalties, including fines or the closure of facilities. In case of a takeover or concession agreement termination due to government default, if we are entitled to any indemnification from granting authorities for our investments, this indemnification may be insufficient to cover our costs, expenses or losses and may be paid long after the events affecting our concessions, licenses or permits occur, if at all.

In addition, changes in applicable laws or regulations could require modifications to our technologies and operations and unexpected capital expenditures. Capital expenditures that we have already made may not generate the returns we expected, if any.

After accidents involving the breaking of upstream mining dams operated by other mining companies in the cities of Mariana and Brumadinho in the state of Minas Gerais, the Brazilian National Mining Agency (*Agência Nacional de Mineração*), or the ANM, which is the regulatory agency under the Brazilian Ministry of Mines and Energy (*Ministério de Minas e Energia*), or the MME, of the Brazilian government, and Brazilian environmental regulatory authorities have applied more stringent environmental licensing requirements for mining project operations, specifically for dams.

The amount and timing of these and other environmental and related expenditures may vary substantially from those currently anticipated and we may encounter delays in obtaining environmental or other operating licenses, or not be able to obtain and/or renew them, which could subject us to civil, administrative or criminal liability and closure orders. Any of the above events, among others, may adversely affect us and our ability to obtain expected returns from our projects, and may render certain projects economically or otherwise unfeasible.

Further, new or more stringent environmental licensing requirements for our project operations, specifically for our dams, could be imposed on us. For additional information on mining regulations in Brazil, see "Item 4. Information on the Company—4B. Business Overview—Regulatory Matters—Mining Regulation."

We have a high level of indebtedness that could make it more difficult or expensive to refinance our maturing debt and/or incur new debt.

As of December 31, 2022, our total debt outstanding was R$41,441 million, comprising R$5,270 million of short-term debt and R$36,171 million of long-term debt. We had R$11,991 million in cash and cash equivalents as of December 31, 2022. Our planned investments across our business segments will require a significant amount of cash over the course of 2023 and following years. See "Item 4. Information on the Company—4B. Business Overview—Investments and Divestitures—Acquisition Activity."

Our level of indebtedness could affect our credit rating and our ability to obtain any necessary financing in the future and may increase our cost of borrowing. In addition, our level of indebtedness could make it more difficult to refinance our existing indebtedness and could make us more vulnerable in the event of a downturn in our business. In these and other circumstances, servicing our indebtedness may use a substantial portion of our cash flow from operations, which could adversely affect us and make it more difficult for us to make payments of dividends and other distributions to our shareholders, including the holders of ADSs, as well as to fund our operations, working capital and capital expenditures necessary for the maintenance and expansion of our business activities.

Our ability to refinance our indebtedness maturing in 2023 and 2024 is subject to market conditions and creditor approvals. In the event conditions are not favorable or approvals are not obtained, we will be required to make significant payments in the next 24 months under our financings, which would adversely affect our financial and cash position and may result in downgrades in our credit ratings.

We cannot assure you that our credit ratings will not be lowered, suspended or withdrawn by the rating agencies.

Our credit ratings are limited in scope, and do not address all material risks relating to an investment in our common shares or the ADSs, but rather reflect only the views of the rating agencies at the time the ratings are issued. These ratings may affect the cost and other terms upon which we are able to obtain funding and are subject to change due to factors specific to us, trends in the industries we operate in or trends in the credit and capital markets generally. As of the date of this annual report, our Fitch, Moody's and S&P credit ratings are BB with a positive outlook, Ba2 with a stable outlook and BB with a positive outlook, respectively.

Credit rating agencies regularly evaluate us and their ratings are based on a number of factors, including our financial strength. We cannot assure you that credit rating agencies will not downgrade our credit ratings or that credit ratings will remain in effect for any given period of time or not be withdrawn entirely by the rating agencies, if in their judgment circumstances so warrant. Any lowering, suspension or withdrawal of our credit ratings may have an adverse effect on us and our ability to refinance our existing indebtedness.

Accidents or malfunctioning equipment on our premises, railways or ports may decrease or interrupt production, internal logistics or distribution of our products and adversely affect us.

The steel and iron ore production processes depend on certain critical equipment, such as blast furnaces, steel converters, continuous casting machines, rolling mills, drillers, reclaimers, conveyor belts, crushing and screening equipment and ship loaders, as well as on internal logistics and distribution channels, such as seaports and railways. This equipment and infrastructure may be affected in the case of malfunction or damage. Any significant interruptions in our production process, internal logistics or distribution channels (including our ports and railways) could materially and adversely affect us.

In addition, our operations involve the use, handling, storage, and discharge and disposal into the environment of hazardous substances. Our mining, steel and cement businesses are generally subject to significant risks and hazards, including fire, explosions, toxic gas leaks, spilling of polluting substances or other hazardous materials, rockfall incidents in mining operations and incidents involving mobile equipment or machinery and accidents involving our dams. Such events could occur by accident or by breach of operating and maintenance standards, and could result in a significant environmental impact, damage to or destruction of our mineral properties and/or production facilities, personal injury or death, delays or suspensions in production, monetary losses and exposure to civil responsibilities, administrative penalties, criminal sanctions and closure orders for non-compliance with these regulations. Our health, safety and environmental standards and risk management programs and procedures may be insufficient to prevent incidents or accidents that could adversely affect us.

Failures in or interruptions to our telecommunications, information technology systems or automated machinery could adversely affect us.

Our operations are heavily reliant on telecommunications, information technology systems and automated machinery. Disruptions to these systems, caused by obsolescence, technical failures or intentional acts, may adversely affect us. In addition, any failure in our systems related to confidential information, caused by external cyberattacks or internal actions, including negligence or misconduct of our employees, could adversely affect our reputation and our interactions with customers, competitors and other third parties, including governmental and regulatory bodies, suppliers and others, and may, among other things, expose us to fines and litigation.

Unauthorized access to or release or violation of our or our business partners' systems and data could materially and adversely affect us.

We are subject to a broad range of cyber threats, including attacks, with varying levels of sophistication. These cyber threats are related to the confidentiality, availability and integrity of our systems and data, including our customers' and business partners' confidential, classified or personal information. In addition, because we have access to certain information technology systems of certain of our business partners, our systems may be subject to attacks aimed at accessing, tampering with or exposing our business partners' systems and their data.

In addition, certain of our business partners, including our suppliers, have broad access to certain of our confidential and strategic information. Many of these business partners face similar security threats and any attacks on their systems could result in unauthorized access to our systems or data. Any unauthorized access to, or release or violation of our systems and data, whether directly or through cyberattacks or similar breaches affecting our business partners, could materially and adversely affect us, including subjecting us to regulatory scrutiny and fines.

Our insurance policies may not be sufficient to cover all our losses.

We maintain several types of insurance policies as part of our risk management for each of our businesses and seek to follow industry practice regarding best coverage, which encompasses domestic and international (import and export) cargo transportation (road, rail, sea or air), life insurance, personal accidents, health, automobile, directors and officers, general liability, CAR (construction and erection risks), trade credit insurance, surety, named perils, ports and terminal liabilities.

We also have an insurance policy covering the operational risks, material damages and loss of profits of the following operations and subsidiaries: Presidente Vargas Steelworks, CSN Mineração S.A., or CSN Mineração, and the container terminal Sepetiba Tecon S.A., or TECON.

The coverage obtained in our insurance policies may not be sufficient to cover all risks or the extent of the risks we are exposed to, which could expose us to significant costs. Additionally, we may not be able to successfully contract or renew our insurance policies or to do so on terms satisfactory to us. The occurrence of one or more of these events may adversely affect us.

Our projects are subject to risks that, if materialized, may result in increased costs and/or delays or that could prevent their timely or successful implementation.

We are investing to further increase our steel, mining and cement production capacity and/or efficiency, as well as our logistics capabilities. The success of these projects is subject to a number of risks that, if materialized, may adversely affect our growth prospects and profitability, including, among others:

- delays, availability issues or higher than expected costs in obtaining the necessary equipment, services and materials to build and operate a project;
- lack of infrastructure, including waste disposal areas and reliable power and water supply;
- environmental remediation costs;
- delays or higher than expected costs in obtaining or renewing required authorizations, concessions, licenses or permits and/or regulatory approvals, including related to environmental matters, to build or continue a project;
- changes in market conditions, laws or regulations that may result in material additional costs, which may render a project less profitable than expected or economically or otherwise unfeasible;
- service providers' inability to comply with certain legal duties under Brazilian law, including tax, labor and social security, for which we may become liable;
- breach by suppliers, contractors and service providers of their obligations with us; and
- disruptions in our logistics chain caused by third parties, contractual breaches, general operational or geotechnical issues.

Any one or a combination of the factors described above may materially and adversely affect our ability to successfully implement our strategy and, consequently, us.

We are subject to environmental, health and safety incidents and current, new or more stringent regulations may result in liability exposure and increased capital expenditures.

Our steel production, mining, cement, energy and logistics facilities are subject to a broad range of laws, regulations and permit requirements in the countries where we operate relating to the protection of the environment, health and safety.

Brazilian pollution standards are subject to change, including new effluent and air emission standards, water management and solid waste-handling regulations, wildlife maintenance regulations, restrictions on business expansions, native forest preservation requirements and the obligation to support the creation of an integral protection conservation unit, as privately owned conservation areas (*Reserva Particular do Patrimônio Natural*), or national parks, or areas of relevant ecological interest (*Área de Relevante Interesse Ecológico* – ARIE) as environmental compensation for industrial and mining expansion projects. The Brazilian government has adopted a decree under the national policy for climate change (*Política Nacional de Mudanças Climáticas*) that contemplates a reduction in carbon emissions for the mining, steel and cement industries and an action plan is under development by a technical committee comprising representatives from the government, industry associations and academia.

Our operations involve the use of natural resources, and are subject to significant risks and hazards, including fire, explosion, toxic gas leaks, spilling of polluting substances or other hazardous materials, rockfalls, incidents involving dams, failure of operational structures and incidents involving mobile equipment, vehicles or machinery. These could occur by accident or by breach of operating and maintenance standards, and could result in significant environmental and social impacts, damage to or destruction of mineral properties or production facilities, personal injury, illness or death of employees, contractors or community members close to operations, environmental damage, delays in production, monetary losses and possible legal liability. Additionally, in remote localities, our employees may be exposed to tropical and contagious diseases that may affect their health and safety. Notwithstanding our standards, policies and controls, our operations remain subject to incidents or accidents that could adversely affect us and our stakeholders.

New or more stringent environmental, health and safety standards imposed on us could require increased capital expenditures, additional legal preservation areas within our properties or modifications to our operating practices or projects. For further information on environmental regulations and claims, see "Item 4. Information on the Company—4B. Business Overview—Regulatory Matters—Environmental Regulation."

The amount and timing of expenditures related to environmental, health and safety matters may vary substantially from those currently anticipated. These additional costs may have a negative impact on the profitability of the projects we intend to implement or may make such projects economically unfeasible. Waste disposal, including our slag piles, and emission practices may result in the need for us to clean up or retrofit our facilities or our disposal locations at substantial costs and/or could result in substantial civil, criminal and administrative liability, including, among other things, liability pursuant to public civil actions. Environmental legislation in foreign markets to which we export our products may also materially and adversely affect our export sales and us.

In addition, we may enter into TACs with Brazilian regulatory agencies that require us to minimize or eliminate the risk of environmental impacts in the areas where we operate. If we are unable to comply with a TAC or to remediate non-compliance in a timely manner, we may be exposed to penalties, such as fines, new environmental offsets, delays in obtaining environmental or other operating licenses, revocation of permits or closure of facilities.

Finally, new or more stringent regulatory frameworks may be imposed and may affect our mining operations, including requests for environmental recovery of areas and investments for the granting of mining concessions. Any failure to comply with these or other laws, resolutions and standards may expose us to civil, criminal and administrative liability.

Our governance and compliance procedures may fail to prevent regulatory penalties and reputational harm.

We operate in a global environment and our activities straddle multiple jurisdictions and complex regulatory frameworks subject to enforcement worldwide. Our governance and compliance procedures may not prevent breaches of legal, accounting and/or governance standards applicable to us, and we may be unable to identify wrongdoing or improper activities by members of our management, employees or third parties. We may be subject to breaches of our Code of Ethics, business conduct protocols and to instances of fraudulent behavior, dishonesty and unlawful conduct by members of our management, employees, contractors or other agents, which could subject us to fines, loss of our operating licenses and reputational harm, as well as other penalties, which may materially and adversely affect us.

We may fail to maintain an effective system of internal controls, which could prevent us from timely and accurately reporting our financial results.

Our internal controls over financial reporting may not prevent or detect misstatements in a timely manner due to inherent limitations, including human error, circumvention or overriding of controls, or fraud. Even effective internal controls can provide only reasonable assurance with respect to the preparation and fair presentation of financial statements. If we fail to maintain the adequacy of our internal controls, including implementing new or improved required controls, we could fail to meet our financial reporting obligations, which could trigger a default under certain of our agreements. In this regard, and in connection with management's evaluation of the effectiveness of our internal control over financial reporting, we concluded that, as of December 31, 2022, our internal control over financial reporting is effective.

Certain of our operations depend on joint ventures, strategic alliances and consortia, among other forms of cooperation, and our business could be adversely affected if our partners fail to observe their commitments.

We currently operate parts of our business through joint ventures, strategic alliances and consortia with other companies. Our forecasts and plans for these joint ventures, strategic alliances and consortia assume that our partners will observe their obligations to make capital contributions, purchase products and, in certain cases, provide managerial personnel or financing. In addition, many of the projects contemplated by our joint ventures or consortia rely on financing commitments, which contain certain preconditions for each disbursement. If any of our partners fails to observe their commitments or we fail to comply with all preconditions required under our financing commitments or other partnership arrangements, the affected joint venture, consortium or other project may not be able to operate in accordance with its business plans, or we may have to increase the level of our investment to implement these plans, which could adversely affect us.

Risks associated with drilling and production could render mining projects economically unfeasible.

Once mineral deposits are discovered, it can take a number of years from the initial phase of drilling until production is possible, during which time the economic feasibility of production may change. Substantial time and expenditures are required to:

- establish mineral reserves through drilling;
- determine appropriate mining and metallurgical processes for optimizing the recovery of metal contained in ore;
- obtain environmental and other licenses;

- construct mining and processing facilities and set up the infrastructure required for greenfield properties; and
- obtain the ore or extract the minerals from the ore.

If a mining project proves to not be economically feasible by the time we are able to profit from it, we may incur substantial losses and be obliged to record write-offs. In addition, potential changes or complications involving metallurgical and other technological processes arising during the life of a project may result in delays and cost overruns that may render the project not economically feasible.

Our mineral reserves and mine life may prove inaccurate, market price fluctuations and cost changes may render certain ore reserves uneconomical to mine and we may face rising extraction costs or investment requirements over time as our reserves deplete.

Our reported ore reserves are estimated quantities of ore and minerals that we have determined can be economically mined and processed under present and anticipated conditions to extract their mineral content. There are numerous uncertainties inherent in estimating quantities of reserves and in projecting potential future rates of mineral production, including many factors beyond our control. Reserve engineering involves estimating deposits of minerals that cannot be measured in an exact manner, and the accuracy of any reserve estimate is a function of the quality of available data and engineering and geological interpretation and judgment. As a result, no assurance can be given that the indicated amount of ore will be recovered or that it will be recovered at the rates we anticipate. Estimates of different engineers may vary, and results of our mining production subsequent to the date of an estimate may lead to revision of estimates. Reserve estimates and estimates of mine life may require revision based on actual production experience and other factors. For example, fluctuations in the market prices of minerals and metals, reduced recovery rates or increased operating and capital costs due to inflation, exchange rates or other factors may render proven and probable reserves uneconomic to exploit and may ultimately result in a restatement of reserves.

In addition, reserves are gradually depleted in the ordinary course of our exploration activities. As mining progresses, distances to the primary crusher and to waste deposits become longer and pits become steeper. Also, for some types of reserves, mineralization grade decreases and hardness increases at increased depths. As a result, over time we may experience rising unit extraction costs with respect to each mine, or we may need to make additional investments, including adaptation or construction of processing plants and expansion of our dry tailings processes. Our exploration programs may also fail to result in the expansion or replacement of reserves depleted by current production. If we do not enhance existing reserves or develop new operations, we may not be able to sustain our current level of production beyond the remaining lives of our existing mines. See “Item 4. Information on the Company—4B. Business Overview—Description of our Operating Segments—Our Mining Segment.”

Our subsidiary CSN Mineração intends to invest in the increase of the total iron ore processing capacity of its facilities and it may not necessarily complete these investments as planned and/or effectively achieve the production volume corresponding to the planned total iron ore processing capacity.

Our subsidiary CSN Mineração included in its business plan certain investments to increase its iron ore processing capacity in the medium and long term. The expansion of its production capacity involves significant investment and expenses and may not result in the effective expansion of its iron ore production, which depends on other additional factors, including the expansion of its mineral reserves. Moreover, these investments to increase its processing capacity are subject to numerous risks inherent to mining projects.

CSN Mineração has planned investments for the expansion of its iron ore processing capacity from 34 million tons per year in 2022 to up to 108 million tons per year by 2033. These numbers represent expected production capacity of CSN Mineração’s facilities following the implementation in full of its current business plan – not its production volume. We can provide no assurances that CSN Mineração’s production volume will effectively reach 108 million tons per year by 2033.

If CSN Mineração is unable to transform its iron ore processing capacity into effective iron ore production, it may not obtain the expected return on investments made, which may adversely affect us.

Natural and other disasters, or extreme weather conditions, could disrupt our operations.

Our mining and logistics operations are exposed to natural and other disasters, or extreme weather conditions, including as a result of climate change developments such as heavy rainfall or flooding, and these could reduce the available supply of our raw materials and increase our raw materials costs, as well as delay and otherwise disrupt our operations, including relating to logistics. In early 2022, due to heavy rainfall in the Southeast region of Brazil, we temporarily suspended mining operations at Casa de Pedra, processing operations at our Pires plant and port operations at TECAR. We partially and gradually re-initiated these operations after a couple of weeks once climate conditions improved and we were able to ensure operational safety. We conducted extraordinary maintenance and reinforced certain of our structures in order to fix damage caused and to prevent future damage from heavy rainfall. We cannot foresee extraordinary climate conditions, including as a result of climate change developments (the physical risks of climate change to which we are subject), or all regulatory changes in response to climate change (the transition risks of climate change to which we are subject), as well as their full potential impact on our operations.

Additionally, we are subject to technical or physical risks including fire, power loss, water supply loss, leakages, accidents and failures in telecommunications and information technology systems, whether resulting from natural or other disasters or otherwise, any of which could disrupt our operations.

We may not be able to consummate proposed acquisitions or integrate acquired businesses successfully.

From time to time, we may evaluate acquisition opportunities that would strategically fit our business objectives. If we are unable to consummate acquisitions or to integrate them successfully and develop these businesses to realize revenue growth and cost savings, we could be adversely affected. Acquisitions also pose the risk that we may be exposed to successor liability involving an acquired company. Due diligence conducted in connection with an acquisition, and any contractual guarantees or indemnities that we receive, may not be sufficient to protect us from, or compensate us for, actual liabilities. A material liability associated with an acquisition, including related to labor or environmental matters, could adversely affect us and reduce the expected and bargained-for benefits of the acquisition.

In addition, we may incur asset impairment charges related to acquisitions, which may reduce our profitability. Our acquisition activities may also present financial, managerial and operational risks, including diversion of management attention from existing core businesses, difficulties integrating or separating personnel, financial and other systems, failure to achieve the operational benefits that were anticipated at the time of the transaction, adverse effects on existing business relationships with suppliers and customers, inaccurate estimates of fair value made in the accounting for acquisitions and/or amortization of acquired intangible assets which would reduce future reported earnings, potential loss of customers or key employees of acquired businesses and indemnities and potential disputes with buyers or sellers. Finally, proposed acquisitions may also be subject to review from the antitrust authorities in the countries involved in the transaction, which may approve the transaction, do so subject to restrictions, including the divestment of assets, or reject it. Any of these developments or adverse regulatory decisions could adversely affect us.

We may not be able to maintain adequate liquidity and our cash flows from operations and available capital may not be sufficient to meet our obligations.

While our cash flows from operations and available capital have been sufficient to meet our current operating expenses, contractual obligations and debt service requirements to date, our liquidity, cash flows from operations and available capital may be adversely affected by the pricing environment for our products, the exchange rate environment and the effects of weak macroeconomic conditions in Brazil. We are considering certain measures to improve our liquidity and debt profile, including the potential sale of certain assets. In addition, we are negotiating the extension of certain of our credit facilities. If we are unable to successfully sell certain assets and/or extend our debt amortization profile, we may not be able to maintain adequate liquidity and our cash flows from operations and available capital may not be sufficient to meet our obligations.

We have experienced labor disputes in the past that have disrupted our operations, and such disputes may recur.

A substantial number of our employees and some of the employees of our subcontractors are represented by labor unions and are covered by collective bargaining or other labor agreements, which are subject to periodic renegotiation. Strikes and other labor disruptions at any of our facilities or labor disruptions involving third parties who may provide us with goods or services have in the past and may in the future materially and adversely affect the operations of our facilities and/or the timing of completion and the cost of our projects.

We are exposed to the risks of litigation.

We are and may be a party to legal proceedings and judicial, administrative or arbitration claims. For certain of these legal proceedings and claims, we have not established a provision on our balance sheet or have only established provisions for part of the amounts in question, based on our external or internal counsels' judgment as to the likelihood of an outcome unfavorable to us. Although we are contesting existing proceedings and claims, the outcome of each specific proceeding and claim is uncertain and may result in obligations that could materially and adversely affect us. In addition, certain judicial or administrative proceedings may adversely affect our shareholders and holders of the ADSs, specifically their receipt of dividends.

The effect of any discontinuation or replacement of LIBOR may adversely affect us.

The U.K. Financial Conduct Authority announced in July 2017 that it would no longer compel banks to submit rates for the calculation of the London interbank offered rate, or LIBOR, after 2021. To mitigate any possible impact, various regulators have proposed alternative reference rates. As of December 31, 2022, we had R$7,046 million of LIBOR-indexed financings maturing beginning in 2023. We cannot predict the effect of any discontinuation or replacement of LIBOR at this time and, consequently, we cannot assure you that these changes will not have an adverse effect on us.

Risks Relating to Our Common Shares and the ADSs

Our controlling shareholder has the ability to direct our business and affairs and its interests could conflict with yours.

Our controlling shareholder has the power to, among other things, elect a majority of our directors and determine the outcome of any action requiring shareholder approval, including transactions with related parties, corporate reorganizations, acquisitions, dispositions, the destination and diversification of our investments and the timing and payment of any future dividends, subject to minimum dividend payment requirements imposed by Brazilian Corporate Law. Our controlling shareholder may have an interest in pursuing acquisitions, dispositions, financings or other transactions that could conflict with your interests as a holder of our common shares or the ADSs. In addition, the interests of the members of our controlling family have not always been aligned and any conflicts that may arise may adversely affect us.

If you surrender ADSs and withdraw common shares, you risk forfeiting Brazilian tax advantages and losing the ability to timely remit foreign currency abroad.

As an ADS holder, you benefit from the electronic certificate of foreign capital registration obtained by the custodian for our common shares underlying the ADSs in Brazil, which allows the custodian to convert dividends and other distributions with respect to our common shares into non-Brazilian currency and remit the proceeds abroad. Pursuant to Resolution No. 4,373, dated September 29, 2014, of the Brazilian National Monetary Council (*Conselho Monetário Nacional*), or the CMN, in order for an investor to surrender ADSs for the purpose of withdrawing the common shares represented thereby and be entitled to trade the underlying common shares directly on the B3 S.A. – *Brasil, Bolsa, Balcão*, or the B3, the investor is required to appoint a Brazilian financial institution duly authorized by the Central Bank and the CVM to act as its legal representative, who is responsible, among other things, for keeping and updating the investors' certificates of registration with the Central Bank. If you surrender ADSs and withdraw common shares, you may be subject to a less favorable tax treatment on gains with respect to these investments. Moreover, if your representative fails to obtain or update the relevant certificates of registration, you may incur additional expenses or be subject to operational delays which could affect your ability to receive dividends or distributions relating to our common shares or the return of your capital in a timely manner. The custodian's certificate of registration or any foreign capital registration directly obtained by you may be affected by future legislative or regulatory changes, and we cannot assure you that additional restrictions applicable to you, the disposition of the underlying common shares or the repatriation of the proceeds from the process will not be imposed in the future. For a more complete description of Brazilian tax regulations, including any potential risks regarding the possibility that the sale or disposition of ADSs by a Non-Brazilian Holder may be subject to capital gains tax in Brazil, see "Item 10. Additional Information—10E. Taxation—Brazilian Tax Considerations."

Holders of ADSs may not be able to exercise their voting rights.

Holders of ADSs may only exercise their voting rights with respect to the underlying common shares in accordance with the provisions of the deposit agreement. Under the deposit agreement, ADS holders must vote by giving voting instructions to the depositary. Upon receipt of the voting instructions of the ADS holder, the depositary will vote the underlying common shares in accordance with such instructions. If we ask for voting instructions, the depositary will notify ADS holders of the upcoming vote and will arrange to deliver the notice of the upcoming vote. We cannot assure that ADS holders will receive the notice in time to ensure that they can instruct the depositary to vote. In addition, the depositary and its agents are not liable for failing to carry out voting instructions or for the manner in which they do so.

As determined by Brazilian Corporate Law, the first notice of a shareholders' meeting must be given at least 21 days prior to holding the meeting. However, CVM rules require that companies whose shares are also represented by ADSs must convene a shareholders' meeting no later than 30 days in advance. When a shareholders' meeting is convened, holders of ADSs may not receive sufficient advance notice to surrender their ADSs in exchange for the underlying common shares in time to allow them to vote with respect to any specific matter. As a result, holders of ADSs may not be able to exercise their voting rights.

The relative volatility and illiquidity of the Brazilian securities markets may substantially limit your ability to sell the common shares underlying the ADSs at the price and time you desire.

Investing in securities that trade in emerging markets, such as Brazil, often involves greater risk than investing in securities of issuers in the United States and other developed countries, and such investments are generally considered to be more speculative in nature. The Brazilian securities market is substantially smaller, less liquid, more concentrated and can be more volatile than major securities markets in the United States and other developed countries. There is also significantly greater concentration in the Brazilian securities market than in major securities markets in the United States and other developed countries. The ten largest companies in terms of market capitalization represented 46.1% of the aggregate market capitalization of the B3 as of December 31, 2022. Although you are entitled to withdraw the common shares underlying the ADSs from the depositary at any time, your ability to sell the common shares underlying the ADSs at the price and time you wish may be substantially limited.

Holders of ADSs may be unable to exercise preemptive rights with respect to our common shares.

We may not be able to offer our common shares to U.S. holders of ADSs pursuant to preemptive rights granted to holders of our common shares in connection with any future issuance of our common shares unless a registration statement under the Securities Act is effective with respect to such common shares and preemptive rights, or an exemption from the registration requirements of the Securities Act is available. We are not obligated to file a registration statement relating to preemptive rights with respect to our common shares or to undertake steps that may be needed to find available exemptions from registration, and we cannot assure you that we will file any such registration statement or take any such steps. If such a registration statement is not filed and an exemption from registration is not available the depositary of the ADSs may attempt to sell the preemptive rights, and you will be entitled to receive the proceeds of such sale. However, these preemptive rights will expire if the depositary does not sell them, and U.S. holders of ADSs will not realize any value from the granting of such preemptive rights. Moreover, U.S. holders of ADSs representing our common shares, pursuant to the deposit agreement, are deemed to recognize that all preemptive and similar rights with respect to the ADSs have been validly waived. For a more complete description of preemptive rights, see "Item 10. Additional Information—10B. Memorandum and Articles of Association—Description of Capital Stock—Preemptive Rights."

A decrease in our market capitalization may increase volatility in the trading price of our common shares and the ADSs.

In recent years, our market capitalization has been volatile, resulting in increased volatility in the trading price of our common shares and the ADSs. Any decrease in our market capitalization may further increase this volatility. If the trading price of the ADSs drops below the levels required by the listing standards of the New York Stock Exchange, or the NYSE, we may be required to do a reverse stock split or a ratio change of the number of common shares per ADS in order to regain compliance with the NYSE's listing standards.

The trading price of the ADSs decreased in 2022 and, as of December 31, 2022, presented a variation of (35.0)%, as compared to their trading price as of December 31, 2021.

Item 4. Information on the Company

4A. History and Development of the Company

Companhia Siderúrgica Nacional is a Brazilian corporation (*sociedade por ações*) incorporated in 1941 pursuant to a decree of Brazilian president Getúlio Vargas. The Presidente Vargas Steelworks, located in the city of Volta Redonda, in the state of Rio de Janeiro, began its production of coke, pig iron and steel products in 1946, when we also incorporated the Casa de Pedra mine, located in the city of Congonhas, state of Minas Gerais, and the Arcos mine, located in the city of Arcos, state of Minas Gerais. The Casa de Pedra mine assures us self-sufficiency in iron ore and the Arcos mine provides limestone and dolomite.

We were privatized through a series of auctions held in 1993 and early 1994, through which the Brazilian government sold its 91% ownership interest.

Between 1993 and 2002, we implemented a capital improvement program aimed at increasing our annual production of crude steel, improving the quality of our products, and enhancing our environmental protection and cleanup programs. As part of these investments, since February 1996, all our production involves continuous casting, which requires lower energy use and results in decreased metal loss as compared to ingot casting. From 1996 until 2002, we invested the equivalent of US$2.4 billion in our capital improvement program and on maintaining our operational capacity, culminating with the renovation of our blast furnace no. 3 at the President Vargas Steelworks and Hot Strip Mill No. 2 in 2001.

In 2007, we started to sell iron ore in the seaborne market. Today, we, through our subsidiary CSN Mineração, are an important exporter of iron ore, drawing from the high-quality iron ore reserves in the Casa de Pedra and Engenho mines, located in the state of Minas Gerais. CSN Mineração holds the concession to operate the Terminal de Carvão, or TECAR, a solid bulks terminal located in Itaguaí Port in the state of Rio de Janeiro, through which we export iron ore, coal and coke.

In 2009, we entered the cement market with our first grinding mill, in the Presidente Vargas Steelworks in Volta Redonda, in the state of Rio de Janeiro, taking advantage of the synergies of the cement business with our steel business.

In order to diversify our product portfolio, we entered the long steel market in 2012, with the acquisition of Stahlwerk Thüringen Gmbh, or SWT, a long steel manufacturer located in Unterwellenborn, Germany.

In addition, we installed a new plant for production of long steel products at Volta Redonda, which began operations in December 2013. The plant consists of an electric arc steelmaking furnace, continuous casting for billets and a hot rolling mill for round section long products. This plant provides the domestic Brazilian market with rebar for civil construction and wire rod for industrial and civil construction.

In 2015, we inaugurated two new grinding mills and, in 2016, we concluded a new 6,500 tons per day kiln line, reaching an aggregate annual capacity of 4.7 million tons in our cement plants.

In June 2018, we sold Heartland Steel Processing, LLC (formerly Companhia Siderúrgica Nacional, LLC) to Steel Dynamics, Inc. for US$400.0 million. We continue our commercial import and distribution activities in the North American market through our U.S. subsidiary Companhia Siderúrgica Nacional, LLC.

In 2019, investments of approximately R$250.0 million in the maintenance of blast furnace no. 3 increased its steel production capacity by 500,000 tons per year.

In 2020, we invested R$848.0 million in our steel segment, R$710.0 million in our mining segment and approximately R$140.0 million in our other segments. In early 2021, CSN Mineração completed its initial public offering, and its shares are now traded on the B3.

In 2021, we reached historically high net revenue and EBITDA and, in 2021 and 2022, we took advantage of the following acquisition opportunities: in our cement segment, Elizabeth Cimentos S.A. and Elizabeth Mineração Ltda., which operate in the Northeast region of Brazil, and LafargeHolcim (Brasil) S.A., as a result of which we are, as of the date of this annual report, the second largest cement producer in Brazil, with a total installed capacity of 17 million tons per year; in our steel segment, Metalgráfica Iguaçu S.A., or Metalgráfica, which, operates in Ponta Grossa, in the state of Paraná, and Goiânia, in the state of Goiás, produces steel cans for the national and international market of metal food packaging, as a strategic step to expand the production capacity of our packaging division; and, in our energy segment, Santa Ana Energética S.A., Topázio Energética S.A. and Companhia Energética Chapecó, or CEC, each of which holds concessions for hydroelectric power plants, and Companhia Estadual de Geração de Energia Elétrica, or CEEE-G, which holds concessions for hydroelectric power plants and greenfield wind power plant projects. These acquisitions collectively provide us with enhanced energy independence in certain of our operations.

General

We are one of the largest fully integrated steel producers in Brazil and Latin America in terms of crude steel production. We operate throughout the entire steel production chain, from the mining of iron ore to the production and sale of a diversified range of high value-added steel products. We divide our business into five segments: steel, mining, cement, logistics and energy.

Steel

Our steel segment comprises a portfolio of diverse products and provides us an international footprint by means of our international subsidiaries and our exports from Brazil. In our flat steel segment, we are an almost fully integrated steelmaker. Our main industrial facility, Presidente Vargas Steelworks, produces a broad line of steel products, including slabs, hot- and cold-rolled, galvanized and tin mill products for the distribution, packaging, automotive, home appliance and construction industries.

Our production process is based on the integrated steelworks concept. Our current annual crude steel capacity and rolled product capacity at Presidente Vargas Steelworks is, in each case, 5.6 million tons.

We obtain all of our iron ore (except for pellets), limestone and dolomite requirements, and a portion of our tin requirements, from our own mines. Using imported coal, we produce approximately 55% of our coke requirements at current production levels in our own coke batteries at Volta Redonda. Imported coal is also pulverized and used directly in the pig iron production process. Zinc, manganese ore, aluminum and a portion of our tin requirements are purchased in local markets. Our steel production and distribution processes also require water, industrial gases, energy, rail and road transportation and port facilities.

In addition, we have an annual production capacity of approximately 330,000 tons of galvanized steel products, operated through our subsidiary Lusosider Aços Planos, S.A. in Portugal, and an annual production capacity of approximately 1.1 million tons of steel products operated through SWT in Germany.

We own and operate a plant in Volta Redonda for production of long steel products. The plant consists of an electric arc steelmaking furnace, continuous casting for billets and a hot rolling mill for round section long products – wire rod and rebar.

Mining Activities

We own a number of high quality iron ore mines, strategically located within Brazil's "Iron Ore Quadrangle" (*Quadrilátero Ferrífero*) in the state of Minas Gerais, including the Casa de Pedra and Engenho mines, located in the city of Congonhas, pertaining to our subsidiary CSN Mineração, and the Fernandinho mines, located in the city of Itabirito, and the Cayman and Pedras Pretas mining rights, located in the city of Rio Acima and the city of Congonhas, respectively, pertaining to our wholly owned subsidiary Minérios Nacional S.A., or Minérios Nacional.

Our mining assets also include (i) the solid bulks cargo terminal TECAR, in the state of Rio de Janeiro, which pertains to CSN Mineração; (ii) the Bocaina mines, located in the city of Arcos, in the state of Minas Gerais, which produce dolomite and limestone; and (iii) Estanho de Rondônia S.A., or ERSA, located in the city of Ariquemes, in the state of Rondônia, which mines and casts tin.

We sold 26.9 million tons, 28.3 million tons and 29.2 million tons of iron ore to third parties in 2020, 2021 and 2022, respectively.

Cement

We entered the cement market in 2009 in order to take advantage of the synergy potential with our steelmaking business. Our cement operations use as inputs slag generated by our blast furnaces at Volta

Redonda and limestone from our limestone reserves in our Bocaina mines, which is used to produce clinker. Slag and clinker are the main inputs in cement production.

In 2015, we inaugurated two grinding mills and, in 2016, we concluded construction of a new kiln line with a capacity of 6,500 tons per day, reaching an aggregate capacity of 4.7 million tons per year of cement production including our Volta Redonda and Arcos plants.

In August 2021, our cement subsidiary, CSN Cimentos, acquired Elizabeth Cimentos S.A., which operates in the Northeast region of Brazil. This acquisition increased our cement production capacity by 1.3 million tons, from 4.7 million tons to 6.0 million tons.

In September 2022, CSN Cimentos acquired the entirety of LafargeHolcim (Brasil) S.A., at a value of US$960.7 million. This acquisition added 11 million tons of cement per year to our production capacity, bringing our total production capacity to 17 million tons of cement per year, by means of plants strategically located in the Southeast, Northeast and Midwest regions of Brazil, as well as substantial high-quality limestone reserves.

We plan to further increase our market share in the cement segment in Brazil in order to diversify our product mix and markets, which will allow us to reduce our risk exposure.

Energy

Steelmaking requires significant amounts of electrical energy to power rolling mills, production lines, hot metal processing, coking plants, cryogenic plant and auxiliary units. In 2022, our Presidente Vargas Steelworks consumed approximately 2.86 million MWh of electrical energy.

Cement production also requires significant amounts of electrical energy and, as a result of the expansion of our cement operations over the last two years, the energy needs of our cement segment represent a larger share of our energy demand. Our acquiree, LafargeHolcim (Brasil) S.A., provides 3.4 MW of installed capacity annually from a hydroelectric power plant.

Mining operations require electrical energy principally for crushing and excavation. In 2022, our mining operations at Casa de Pedra consumed 285,000 MWh of electrical energy.

Our main source of electrical energy is our thermoelectric co-generation power plant at the Presidente Vargas Steelworks, which is fueled by gas from the steel production process, with 267 MW of installed capacity. In addition, as of the date of this annual report, we hold a 29.50% equity interest in the Itá hydroelectric facility in the state of Santa Catarina, through a 48.75% equity interest in ITASA and a 17.92% equity interest in the Igarapava hydroelectric facility. Through these equity interests, we have secured an average of 167 MWavg in annual power supply for our operations under power purchase agreements at a fixed price per MW hour, adjusted annually according to ITASA's board decision and 24 MWavg at a cost price of the annual generation of Igarapava's hydroelectric power plant. At the end of 2022, ITASA's board of directors decided it would not implement any price adjustments for 2023.

For our energy needs that are not provided by our internal generation, we rely on fixed price long-term contracts with external generators. In 2022, we seized the following acquisition opportunities in Brazil in order to enhance the energy independence of our steelmaking, cement production and mining operations: Santa Ana Energética S.A., Brasil Central Energia Ltda. and CEC, which hold concessions for hydroelectric power plants, and CEEE-G, which holds concessions for hydroelectric power plants and greenfield wind power plant projects.

Logistics

Our vertical integration strategy and the synergies among our business units are strongly dependent on the logistics needed to guarantee the transportation of inputs at low cost. A number of railways and port terminals comprise the logistics system that integrates our mining, steelmaking and cement units.

We operate a port terminal for containers, TECON at Itaguaí Port, in the state of Rio de Janeiro, and CSN Mineração operates TECAR.

We also have the following participation in three railways: (i) we share control in MRS, which operates in the Southeast region of the federal railway system, along the Rio de Janeiro – São Paulo – Belo Horizonte axis;

(ii) we have an interest in joint venture TLSA, which has a concession to construct and operate the Northeastern Railway System II; and (iii) we control Ferrovia Transnordestina Logística S.A., or FTL, which operates the Northeastern Railway System I.

Recent Developments

Pre-Payment Export Financing Agreement

In March 2023, we signed a pre-payment export financing agreement, in the aggregate amount of US$1.4 billion for a term of twelve years. Up to US$980.0 million will be granted by Japan Bank for International Cooperation and up to US$420.0 million will be granted by a syndicate of banks. The agreement is part of our strategy to finance growth using financial instruments for long-term projects, including our project to build a new pellet feed plant in our Casa de Pedra mine. The consummation of this transaction is subject to the fulfillment of customary conditions precedent, including the signing of an offtake agreement with a Japanese customer for part of the volume contracted.

Other Information

Our legal and commercial name is Companhia Siderúrgica Nacional. We are organized under the laws of the Federative Republic of Brazil with head offices located at Av. Brigadeiro Faria Lima, 3400, 19th and 20th floors, Itaim Bibi, São Paulo, Brazil, CEP 04538-132, and our telephone number is +55 (11) 3049-7100. Our agent for service of process in the United States is Cogency Global Inc., located at 122 East 42nd Street, 18th Floor, New York, New York 10016. Our website is *www.csn.com.br*. The U.S. Securities and Exchange Commission, or the SEC, maintains a website that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including our filings, at *http://www.sec.gov*.

4B. Business Overview

Competitive Strengths

We believe that we have the following competitive strengths:

Integrated business model. We are a highly integrated steelmaker and we believe this integration supports resilient and profitable operations. Our integrated business model comprises our captive sources of raw materials, principally iron ore, and our infrastructure, including railways and deep-water port facilities. In terms of raw materials, we own a number of high-quality iron ore mines, strategically located within Brazil's "Iron Ore Quadrangle," which distinguishes us from our main competitors in Brazil who are required to purchase all or a portion of their iron ore from mining companies.

Strong presence in domestic market and strategic international exposure for steel products. We have a strong presence in the Brazilian market for steel products, with a market share in 2022 of approximately 25% of the domestic flat steel market. In addition, through our international subsidiaries, we sell our flat steel products in the United States and in Europe, which aggregate sales accounted for approximately 13% of our total flat steel sales in 2022. In 2012, we acquired SWT, a long steel producer in Germany with annual production capacity of approximately 1.1 million tons of steel profiles, strengthening our steel products mix and geographical diversification. In 2022, SWT accounted for 76% of our total long steel sales, representing 718,643 tons.

Diverse product portfolio and product mix. We have a diversified flat steel product mix that includes hot-rolled, cold-rolled, galvanized and tin mill products, in order to meet a wide range of customer needs across all steel-consuming industries. We focus on selling high-margin products, including tin-coated, pre-painted, *Galvalume®* and galvanized products. *Galvalume®* is a is a registered trademark owned by BIEC International Inc. or its affiliates. Our galvanized products provide material for exposed auto parts, using hot-dip galvanized steel and laser-welded blanks. Our CSN Paraná branch provides us with additional capacity to produce high-quality galvanized, *Galvalume®* and pre-painted steel products for the construction and home appliance industries. In addition, our distribution subsidiary, Prada, provides a strong sales channel in the domestic market, enabling us to meet demand from smaller customers and to establish an important presence in this market.

Profitable mining business. We have invested significantly in our mining business, placing us in a prominent position among the world's leading iron ore players. Further mining expansions will enable us to expand our product portfolio and total output, increasing our presence in seaborne markets.

We have high-quality iron ore reserves in Casa de Pedra, Engenho, Fernandinho and other mines, all located in the state of Minas Gerais. Our mining activities are an important contributor to our EBITDA. We sold 31.2 million tons of iron ore in 2020, 33.2 million tons in 2021 and 33.3 million tons in 2022. Our mining business also includes TECAR, a solid bulks terminal at Itaguaí Port in the state of Rio de Janeiro, with a capacity to handle (i) shipments of 45 million tons per year of iron ore and (ii) landings of 4.0 million tons per year and the Bocaina mine, located in the city of Arcos in the state of Minas Gerais, which produces dolomite and limestone, as well as our subsidiary ERSA, which mines and casts tin.

Second largest player in Brazilian cement market. Following our strategic acquisitions in the Brazilian cement market in 2021 and 2022, as part of which we now own Elizabeth Cimentos S.A. and LafargeHolcim (Brasil) S.A., we are the second largest player in the Brazilian cement market with an installed capacity of 17.0 million tons, seven integrated plants, six grinding and mixing plants and 15 distribution centers throughout Brazil, in each case as of December 31, 2022. Our cement segment further diversifies our business model and permits us to use by-products of our other operations as inputs in our cement production.

Energy generation. We generate power through our hydroelectric facilities of Itá and Igarapava, as well as our thermoelectric plant located inside Presidente Vargas Steelworks, which allow us to benefit from reduced energy tariffs. We sell excess energy we generate in the energy market on a spot basis. Our 267 MW thermoelectric cogeneration plant can provide Presidente Vargas Steelworks with approximately 20% of its energy needs for its steel mills, and uses as its primary fuel the waste gases generated by our coke ovens, blast furnaces and steel processing facilities. We hold a 29.50% equity interest in the Itá hydroelectric facility in the state of Santa Catarina, through a 48.75% equity interest in ITASA, and a 17.92% equity interest in the Igarapava hydroelectric facility. Through these equity interests, we have secured an average of 167 MWavg in annual power supply for our operations under power purchase agreements at a fixed price per MWh, adjusted annually according to ITASA's board decision and 24 MWavg at a cost price of the annual generation of Igarapava's hydroelectric power plant.

Thoroughly developed transport infrastructure. We have a thoroughly developed transport infrastructure, connecting our iron ore mines to our steel mills and to the port terminals we operate. Our Presidente Vargas Steelworks facility is located next to railway and port systems, which facilitates its supply of raw materials, product shipments and access to our main customers. Our steelworks are close to the main steel consumer centers in Brazil, with easy access to port facilities and railways. The concession for the main railway we use and operate is owned by MRS, in which we hold, directly and indirectly, as of December 31, 2022, a total of 37.27% (before non-controlling interest) ownership interest. The railway connects our Casa de Pedra mine to the Presidente Vargas Steelworks and to our terminals at Itaguaí Port, which handle our iron ore exports and most of our steel exports, as well as our imports of coal and metallurgical coke.

Low cost structure. As a result of our fully integrated business model, our thoroughly developed transportation infrastructure and our energy generation, we have been consistently generating high margins compared to peer companies in both the steel and mining segments. Other factors that lead to our low-cost structure include the strategic location of our steelworks facility along with our low-cost, skilled workforce.

Our Strategies

Our goal is to make the most of our high-quality product portfolio, low-cost production and diverse consumer market to preserve our position as one of the world's lowest-cost steel producers and as a global player in the mining of iron ore, increase our cement segment's market share and optimize our infrastructure assets, including ports, railways and power generating plants, which support our high integration and low cost structure. To achieve these goals, we have developed specific strategies for each of our business segments, as described below.

Steel

The strategy for our steel business comprises:

- Focus on the domestic market, by increasing market share in the flat steel segment and long steel market;

- Emphasis on high-margin coated steel products, such as galvanized, *Galvalume*®, pre-painted and tin plate;
- Investments in technology startups and other disruptive companies through our subsidiary CSN Inova Ventures, in order to foster innovation and efficiency;
- Geographical diversification through our flat and long steel facilities abroad and our focus on diversifying our exports through, among others, coated steels;
- Constant pursuit of operational excellence by developing and implementing cost reduction projects, including energy efficiency, and process review programs, including internal logistics optimization, project development and implementation discipline;
- Exploring marketing and commercial synergies through our flat steel distribution network and product portfolio to accelerate our entrance into the domestic long steel market; and
- Increased customized services and distribution abilities through our expanding distribution network.

Mining

In order to strengthen our position in the iron ore market, we plan to invest in our mining assets, including through CSN Mineração, to generate low operational costs and long-term growth opportunities.

In the coming years, we expect to reach an annual shipment level of over 60 million tons per year of iron ore products, including third-party products, by increasing mine capacities, including Casa de Pedra, and developing export services for third-party producers. In the short-term, considering the 26.7% increase in iron ore prices in the first quarter of 2023 compared to the last quarter of 2022, our focus is to export high-quality iron ore at optimal margins without affecting the balance of supply and demand in the transoceanic market. To sustain this growth, we plan to increase TECAR's capacity from 45 million tons per year in 2022 to 60 million tons per year in 2027. For more information on risks relating to iron ore price volatility, see "Item 3. Key Information—3D. Risk Factors—Risks Relating to Us and the Industries in Which We Operate—We are exposed to substantial changes in the demand for steel and iron ore, which significantly affect the prices of our products and may adversely affect us."

This expansion will be funded by CSN Mineração's financings. For more information on CSN Mineração's financings, see "Item 5. Operating and Financial Review and Prospects—5B. Liquidity and Capital Resources—Sources of Funds and Working Capital—Debt Maturity Profile" and future issuances of debentures or other debt instruments.

To maximize the profitability of our product portfolio, we are focused on increasing our output of high-quality pellet feed with Itabirite deposits and investing with strategic partners and customers in providing pellet feed to pellet producers.

Cement

We have invested heavily in our cement business and completed two important acquisitions in the last two years: Elizabeth Cimentos S.A. in 2021 and LafargeHolcim (Brasil) S.A. in 2022. These acquisitions allowed us to become the second largest player in the Brazilian cement market with an installed capacity of 17.0 million tons, seven integrated plants, six grinding and mixing plants and 15 distribution centers throughout Brazil, in each case as of December 31, 2022.

We intend to further consolidate the Brazilian cement market. Our cement business strategy looks to increased production and competitiveness, portfolio diversification and capillarity expansion by means of greenfield and brownfield projects, as well as possible acquisition opportunities. In addition, we expect favorable market perspectives in upcoming years due to a robust pipeline of infrastructure projects and higher industry utilization rates, each of which we expect will sustain cement consumption and favorable pricing in Brazil. The focus of our cement sales strategy is on the retail segment, which operates with a low level of inventory and for which our distribution centers provide a competitive advantage.

Energy

We intend to continue to take advantage of certain acquisition opportunities in our energy segment and to increase our generation of clean energy in order to support the operations and expansion of our other segments.

The operations in our energy segment provide us with autonomy in meeting certain of our energy requirements and reduce our exposure to fluctuations in energy prices in the spot market.

Logistics

We expect to expand our logistics capabilities, which comprise our integrated infrastructure operations of railways and ports, in order to increase the transportation efficiency of both our incoming raw materials and distributed products. We will continue to improve our product delivery in the Brazilian market (mainly steel and cement) by implementing low-cost measures, increasing our use of rail transportation and providing more distribution centers to reach end-customers.

In addition to our bulk terminal TECAR, our TECON container terminal has a capacity of 660,000 twenty-foot equivalent units, or TEUs, per year.

In terms of railways, we are developing the TLSA project, which focuses on iron ore, agricultural commodities, gypsum and fuel. We also plan to invest in increased efficiency and capacity in the South of Brazil through our participation in MRS. Because MRS will primarily use its own operating income and other funding strategies to invest in its expansion projects, these investments will not require material capital expenditures by us.

Investments and Divestitures

In addition to our planned investments and capital expenditures, we continue to evaluate acquisition opportunities, as well as joint ventures and brownfield or greenfield projects, to improve our steel, mining and cement cost competitiveness and production, along with our energy generation, logistics capabilities and infrastructure.

We also continue to evaluate business opportunities in order to improve our liquidity position in the short-to medium-term, including in the form of streaming transactions related to our iron ore business and the sale of our investment in Usinas Siderúrgicas de Minas Gerais S.A., or Usiminas.

Acquisition Activity

Elizabeth Cimentos S.A. and Elizabeth Mineração Ltda.

In August 2021, our cement subsidiary, CSN Cimentos, acquired Elizabeth Cimentos S.A. and Elizabeth Mineração Ltda., which operate in the Northeast region of Brazil. These acquisitions increased our cement production capacity by 1.3 million tons, from 4.7 million tons to 6.0 million tons.LafargeHolcim (Brasil) S.A.

In September 2022, CSN Cimentos acquired the entirety of LafargeHolcim (Brasil) S.A., at a value of US$ 960.7 million. This acquisition added 11 million tons of cement per year to our production capacity, bringing our total production capacity to 17 million tons of cement per year, by means of plants strategically located in the Southeast, Northeast and Midwest regions of Brazil, as well as substantial high-quality limestone reserves.

Metalgráfica Iguaçu S.A.

In September 2022, our subsidiary Companhia Metalúrgica Prada acquired Metalgráfica, which, operating in Ponta Grossa, in the state of Paraná, and in Goiânia, in the state of Goiás, produces steel cans for the national and international market of metal food packaging. This acquisition improved the competitiveness, and represents a strategic step in expanding the capacity, of our packaging division.

Santa Ana Energética S.A. and Topázio Energética S.A.

In June 2022, CSN Cimentos and our energy subsidiary, CSN Energia S.A., or CSN Energia, acquired Santa Ana Energética S.A., which holds the concession for the hydroelectric power plant of Santa Ana, and Topázio Energética S.A., which holds, through its subsidiary Brasil Central Energia Ltda., the concession for the hydroelectric power plant of Sacre II.

Companhia Estadual de Geração de Energia Elétrica – CEEE-G

In 2022, our subsidiary Companhia Florestal do Brasil, or CFB, acquired CEEE-G, which holds concessions for hydroelectric power plants and greenfield wind power plant projects, for a total price of R$1,295.0 million. The purpose of this acquisition is to support and strengthen our business expansion strategy, through investments in renewable energy, as we seek self-sufficiency for greater competitiveness of our business.

Companhia Energética Chapecó – CEC

In July 2022, CSN Mineração acquired CEC, which holds the concession for a hydroelectric power plant that has an installed capacity of 120 MW.

The energy generated by the acquisitions in our energy segment support our cement and mining operations and will permits us to reduce the volume contracted pursuant to our largest external energy contract from 150 MWavg to 50 MWavg per year and, consequently, to reduce the costs of our energy consumption.

For more information, see "Item 3. Key Information—3D. Risk Factors—Risks Relating to Us and the Industries in Which We Operate—We may not be able to consummate proposed acquisitions or integrate acquired businesses successfully."

Joint Ventures, Strategic Alliances and Consortia

We currently operate parts of our business through joint ventures, strategic alliances and consortia with other companies. We have, among others: (i) a strategic alliance with an Asian consortium at our controlled investee CSN Mineração to mine iron ore; (ii) a concession jointly held with other Brazilian steel and mining companies at MRS Logística S.A., or MRS, to explore railway transportation in the Southeastern region of Brazil; (iii) a concession jointly held with certain Brazilian governmental entities at Transnordestina Logística S.A., or TLSA, to explore railway transportation in the Northeastern region of Brazil; (iv) a joint venture with Engie Brasil Energia S.A., or Engie Brasil, and Companhia de Cimento Itambé, or Itambé, at Itá Energética S.A., or ITASA, to produce electrical energy; and (v) an energy consortium with Aliança, L.D.R.S.P.E. Geracão de Energia e Participações Ltda. and AngloGold.

Description of our Operating Segments

Our Steel Segment

We produce carbon steel, which is the world's most widely produced type of steel, representing the vast bulk of global consumption. From carbon steel, we sell a variety of products, both domestically and abroad, to manufacturers in several industries.

Flat Steel

Our Presidente Vargas Steelworks produces flat steel products, which comprise slabs, hot-rolled, cold-rolled, galvanized and tin mill products. For more information on our flat steel production process, see "—Production Output."

Slabs

Slabs are semi-finished products used for processing hot-rolled, cold-rolled or coated coils and sheet products. We are able to produce continuously cast slabs with a standard thickness of 250 millimeters, widths ranging from 830 to 1,600 millimeters and lengths ranging from 5,250 to 10,500 millimeters. We produce high, medium and low carbon slabs, as well as micro-alloyed, ultra-low-carbon and interstitial free slabs. The slabs are then slit and finished, generating blooms which are delivered to the long products plant.

Hot-Rolled Products

Hot-rolled products include heavy and light-gauge hot-rolled coils and sheets. A heavy gauge hot-rolled product, as defined by Brazilian standards, is a flat-rolled steel coil or sheet with a minimum thickness of 5.01 millimeters. We are able to provide coils of heavy gauge hot-rolled sheet with a maximum thickness of 12.70 millimeters used to manufacture automobile parts, pipes, structural beams and other construction products. We produce light gauge hot-rolled coils and sheets with a minimum thickness of 1.20 millimeters, which are used for welded pipe and tubing, automobile parts, gas containers, compressor bodies and light cold-formed shapes, channels and profiles for the construction industry.

Cold-Rolled Products

Cold-rolled products include cold-rolled coils and sheets. A cold-rolled product, as defined by Brazilian standards, is a flat cold-rolled steel coil or sheet with thickness ranging from 0.30 millimeters to 3.00 millimeters. Cold-rolled products have more uniform thickness and better surface quality when compared to hot-rolled products and their main applications are automotive parts, home appliances and construction. We supply cold-rolled coils with thickness ranging from 0.30 millimeters to 2.99 millimeters.

Galvanized Products

Galvanized products comprise flat-rolled steel coated on one or both sides with zinc or a zinc-based alloy applied by either a hot-dip or an electrolytic process. We use the hot-dip process, which is approximately 20% less expensive than the electrolytic process. Galvanizing is one of the most effective and low-cost processes used to protect steel against corrosion caused by exposure to water and the atmosphere. Galvanized products are highly versatile and can be used to manufacture a broad range of products, such as:

- automobiles, trucks and bus bodies;
- manufactured products for the construction industry, such as panels for roofing and siding, dry wall and roofing support frames, doors, windows, fences and light structural components;
- air ducts and parts for hot air, ventilation and cooling systems;
- culverts, garbage containers and other receptacles;
- storage tanks, grain bins and agricultural equipment;
- panels and sign panels; and
- pre-painted parts.

Galvanized sheets, both painted and bare, are also frequently used for gutters and downspouts, outdoor and indoor cabinets and home appliances, among others. We produce galvanized sheets and coils in continuous hot-dip processing lines, with thickness ranging from 0.30 millimeters to 3.00 millimeters. The continuous process allows for products with highly adherent and uniform zinc coatings capable of being processed in nearly all kinds of bending and forming machinery.

We produce *Galvanew* in addition to standard galvanized products. *Galvanew* is produced by an additional annealing cycle just after the zinc hot-dip coating process. This annealing process causes iron to diffuse from the base steel into the zinc coating. The resulting iron-zinc alloy coating allows better welding and paint performance. The combination of these qualities makes our *Galvanew* product particularly well suited for manufacturing automobile and home appliance parts, including high gloss exposed parts.

At CSN Paraná, one of our branches, we produce *Galvalume*®, a continuous Al-Zn coated material. Although the production process is similar to hot-dip galvanized coating, *Galvalume*® has at least twice the corrosion resistance of standard galvanized steel. *Galvalume*® is primarily used in outdoor construction applications that may be exposed to severe acid corrosion, like marine uses.

The value added from the galvanizing process permits us to price our galvanized products with a higher margin. Our management believes that our expertise in value-added galvanized products presents one of our best opportunities for profitable growth because of the increase in Brazilian demand for these products.

Through CSN Paraná, we also produce pre-painted flat steel, which is manufactured in a continuous painting line. In this production line, a layer of resin-based paint in a choice of colors is deposited over either cold-rolled or galvanized base materials. Pre-painted material is a higher value-added product used primarily in the construction and home appliance markets.

Tin Mill Products

Tin mill products consist of flat-rolled low-carbon steel coils or sheets with, as defined by Brazilian standards, a maximum thickness of 0.45 millimeters, coated or uncoated. We apply coatings of tin or chromium by electrolytic process. Coating costs place tin mill products among our highest priced products. The added value from the coating process permits us to price our tin mill products at a higher margin. There are four types of tin mill products, all produced by us in coil and sheet forms:

- *Tin plate*: coated on one or both sides with a thin metallic tin layer plus a chromium oxide layer, covered with a protective oil film;
- *Tin free steel*: coated on both sides with a very thin metallic chromium layer plus a chromium oxide layer, covered with a protective oil film;
- *Low tin coated steel*: coated on both sides with a thin metallic tin layer plus a thicker chromium oxide layer, covered with a protective oil film; and
- *Black plate*: uncoated product used as the starting material for the coated tin mill products.

Tin mill products are primarily used to make cans and other containers. With six electrolytic coating lines, we are one of the largest producers of tin mill products in the world and the sole producer of coated tin mill products in Brazil.

Quality Management System

We maintain a quality management system that is certified to comply with the International Standardization Organization, or ISO, 9001:2015 standard and the automotive industry's International Automotive Task Force, or IATF, standard 16949:2016. ISO 9001:2015 is for the design and manufacture of slabs, blooms, billets, hot-rolled flat, pickled and oiled, cold-rolled and galvanized steel, tin mill products and long steel products; and IATF 16949:2016, third edition, is for the manufacture of hot-rolled flat, pickled and oiled steel products, cold-rolled and galvanized steel products. We maintain product certifications for hot-rolled steel in accordance with European Standards EN10025 and regulation (EU) no. 305/2011, CE Mark, and for the supply of steel wires and bars intended for reinforcing of concrete structures in accordance with applicable Brazilian regulations. In addition, as a manufacturer and supplier of products for the food packaging industry, we hold the food safety management system certification, or FSSC 22000, recognized by the Global Food Safety Initiative, most recently audited in December 2022.

Production Output

The following table sets forth the aggregate annual production of crude steel in Brazil and by us, and the percentage of Brazilian production attributable to us for the periods indicated:

	Brazil	**CSN**	**CSN as % of Brazil**
2022	33.9	3.6	11.2%
2021	36.0	4.0	11.1%
2020	30.9	3.5	11.3%

Source: Brazilian Steel Institute (*Instituto Aço Brasil*), or IABr.

The following table sets forth selected operating statistics for the periods indicated:

	2020	**2021**	**2022**
		(*in millions of tons*)	
Production of:			
Molten steel	3.6	4.2	3.7
Crude steel	3.5	4.0	3.6
Hot-rolled coils and sheets	3.5	4.0	3.6
Cold-rolled coils and sheets	2.4	2.5	2.2
Galvanized products	1.5	1.5	1.4
Tin mill products	0.4	0.4	0.4

Raw Materials and Suppliers

The main raw materials we use in our integrated steel mill include iron ore, coke, coal (from which we make coke), limestone, dolomite, aluminum, tin and zinc. In addition, our production operations consume water, gases, energy and ancillary materials.

Iron Ore

We are able to obtain the majority of our iron ore requirements from our Casa de Pedra and Engenho mines located in the state of Minas Gerais. The only iron ore product that we buy from third parties is pellet. For more information, see "—Our Mining Segment."

Coal

In 2022, our metallurgical coal consumption was 1.37 million tons. Metallurgical coal includes coking coal and PCI coal, which is a lower grade coal injected into blast furnaces, in pulverized form, to reduce coke consumption. The PCI system reduces our need for imported coke, thereby reducing production costs. Our total PCI coal consumption in 2022 was 0.50 million tons, all of which was imported. The sources of the hard coking coal consumed in our plants in 2022 were as follows: United States (59.4%) and Australia (40.6%); and for PCI: Russia (83.9%), China (15.2%) and Colombia (0.9%).

Coke

In 2022, in addition to approximately 0.64 million tons of coke we produced, we also consumed 1.23 million tons of coke purchased from third parties in China, Japan, India, United States, Australia and Colombia, which represented a decrease of 11.9% compared to our consumption in 2021.

Limestone and Dolomite

Our Bocaina Mine is located in the city of Arcos, in the state of Minas Gerais, and has been supplying, since the early 1970s, limestone (calcium carbonate) and dolomite (dolomitic limestone) to our Presidente Vargas Steelworks in Volta Redonda. These products are used in the process of sintering and calcination. Arcos has one of the largest and highest quality reserves of limestone in the world. Limestone is used in the production of various products, including clinker and cement.

The annual production of limestone and dolomite for our steelworks is approximately 5.9 million tons.

The main products obtained from limestone and dolomite that are transferred to our steelworks in Volta Redonda are:

- *Limestone and dolomite calcination*: with a granulometry between 32 and 76 mm, they are used in the lime plant in Volta Redonda to produce calcitic and dolomitic lime, for further use in the steelmaking process and sintering. At the steelworks, lime is used for chemical controlling of liquid slag, in order to preserve the refractory of the converters and assist in the stabilization of the chemical reactions that occur during the steel manufacturing process. During sintering, the purpose of lime is to increase the performance of this process and the final quality of the sinter that is produced.
- *Limestone and dolomite fines for sintering*: used in the production of "sinter" in our steelworks. The sintering process mixes and heats together with fine ores, solid fuel and flux, producing a highly reactive granulated burden. The sinter is used in blast furnaces as the main source of iron for the production of pig iron.

The Bocaina Mine is also responsible for supplying limestone for cement manufacturing in Volta Redonda and Arcos.

Aluminum, Zinc and Tin

Aluminum is mostly used for steelmaking. Zinc and tin are important raw materials used in the production of certain higher-value steel products, such as galvanized and tin plate. We typically purchase aluminum and tin from third-party domestic suppliers and zinc from third-party domestic and international suppliers under annual contracts. We purchase part of our tin from our subsidiary ERSA. We maintain approximately 55, 23 and 25 days' inventory of tin, aluminum and zinc, respectively, at the Presidente Vargas Steelworks.

Other Raw Materials

In our production of steel, we consume, on an annual basis, significant amounts of spare parts, refractory bricks and lubricants, which we generally purchase from domestic suppliers.

We also consume significant amounts of oxygen, nitrogen, hydrogen, argon and other gases at the Presidente Vargas Steelworks. These gases are supplied by a third-party under a long-term contract from gas production facilities located on the Presidente Vargas Steelworks site.

In 2022, we used 568,661 tons of oxygen in the Presidente Vargas Steelworks site.

Water

We require large quantities of water in the production of steel. Water serves as a solvent, a catalyst and a cleaning agent. It is also used to cool, carry waste, help produce and distribute heat and power and dilute liquids. Our source of water is the Paraíba do Sul River, which runs through the city of Volta Redonda. 94.4% of the water used in the steelmaking process is recirculated and the balance, after careful processing, is returned to the Paraíba do Sul River. Since March 2003, the Brazilian government has imposed an annual tax of R$3.1 million for our use of water from the Paraíba do Sul River.

Natural Gas

The market for natural gas is strongly correlated with the energy market and we consume both natural gas and electrical energy, mainly in our hot strip mill. Naturgy (formerly Companhia Estadual de Gás do Rio de Janeiro S.A.) is our primary natural gas supplier. To secure natural gas supply, we maintain a "take-or-pay" agreement with Naturgy, pursuant to which we committed to acquire at least 70% of the gas volume it provides. If we do not acquire this minimum volume, we may compensate the difference in amount paid in future years up to one year after the contract's termination. In 2022, the Presidente Vargas Steelworks consumed 422.8 million cubic meters of natural gas.

Diesel Oil

We maintain agreements with Companhia Brasileira de Petróleo Ipiranga, or Ipiranga, to receive diesel oil in order to supply our equipment in our mining plants in the state of Minas Gerais, which provide the iron ore, dolomite and limestone used in our steel plant in Volta Redonda.

In 2022, our diesel oil consumption was 73,942 kiloliters, used to produce 24.3 million tons of iron ore, for which we paid R$362.4 million. For more information, see "Item 3. Key Information—3D. Risk Factors—Risks Relating to Us and the Industries in Which We Operate—We are exposed to substantial changes in commodities prices, including oil prices, which significantly affect the prices of our inputs and the prices of our products, and may adversely affect us."

Suppliers

We acquire our inputs in Brazil and abroad. Aluminum, zinc, tin, spare parts, refractory bricks, lubricants, oxygen, nitrogen, hydrogen and argon are the main inputs we acquire in Brazil. Coal and coke are the only inputs we acquire abroad.

In 2020, 2021 and 2022, we consumed 75,971 tons, 207,344 tons and 190,256 tons, respectively, of third-party slabs.

Following are our main raw materials suppliers:

Main Suppliers	Raw Material
Ternium	Slabs
BHP, Kru Overseas, Warrior, Alpha Metallurgical, Suek AG, E-Commodities and German Creek	Coal
CI Milpa, Trafigura, Sinochem and Noble	Coke
TAG, Ibrame and IBM Metais	Aluminum
Zinco Ligas, Sorin and IBM Metais	Zinc
ERSA, Fabrica Auricchio and Mineração Taboca	Tin
Sotreq, Minas Máquina, Komatsu, Inova, WLM, Metso and Sany	Spare parts
RHI Magnesita, Vesuvius, IBAR, Togni S/A and Saint Gobain	Refractory bricks
Iconic, Quaker-Houghton and Daido	Lubricants
Vale, Vallourec and Samarco	Pellet
Ipiranga	Diesel oil

Flat Steel Mill

The Presidente Vargas Steelworks, located in the city of Volta Redonda, in the state of Rio de Janeiro, began operating in 1946. It is an integrated facility covering approximately four square km and containing five coke batteries, three of which are in operation, three sinter plants, two blast furnaces, a basic oxygen furnace steel shop, with three converters, three continuous casting units, one hot strip mill, three cold strip mills, two continuous pickling lines, one continuous annealing line, 28 batch annealing furnaces, three continuous galvanizing lines, four continuous annealing lines exclusively for tin mill products, three of which are in operation, and six electrolytic tinning lines, three of which are in operation.

The annual production capacity of steel at the Presidente Vargas Steelworks is 5.4 million tons.

Downstream Facilities

CSN Paraná

Our CSN Paraná branch produces and supplies plain regular galvanized products, *Galvalume*® products and pre-painted steel products for the automotive, construction and home appliance industries. The plant has an annual capacity of 295,000 tons of galvanized products and *Galvalume*® products, 131,000 tons of pre-painted products, which can use cold-rolled or galvanized steel as substrate, service capacity of 150,000 tons of sheets and narrow strips, and 384,000 tons of pickled hot-rolled coils in excess of the coils required for the coating process.

CSN Porto Real

Our CSN Porto Real branch produces and supplies plain regular galvanized, *Galvanew* and tailored blanks mainly for the automotive industry. The plant has an annual capacity of 350,000 tons of galvanized products, including *Galvanew* products, and 354,000 tons of tailored blanks, sheets and narrow strips, which can use cold-rolled or galvanized steel as a substrate.

Companhia Metalúrgica Prada

Established in 1936, Companhia Metalúrgica Prada is the largest Brazilian steel can manufacturer and has an annual production capacity of over one billion cans in its five industrial facilities located in the states of São Paulo, Minas Gerais, Rio de Janeiro and Rio Grande do Sul and in the city of Brasília. We are the only Brazilian producer of tin plate, which is Companhia Metalúrgica Prada's main raw material, making it one of our most important products. Companhia Metalúrgica Prada has important customers in the food and chemical industries, including packages of vegetables, fish, dairy products, meat, aerosols, infant nutrition and other business activities.

Prada Distribuição, the distribution arm of Companhia Metalúrgica Prada, is one of the leaders in the Brazilian distribution market for steel products with 600,000 tons per year of installed processing capacity. Prada Distribuição has two steel service centers and three distribution centers strategically located in the Southeast region of Brazil. The service centers are located in the city of Mogi das Cruzes, in the state of São Paulo, and in the city of Valença, in the state of Rio de Janeiro. Its product mix also includes sheets, slit coils, sections, tubes and roofing in standard or customized format, according to customers' specifications. Prada Distribuição processes the entire range of products produced by us and services 4,000 customers annually from the civil construction, automotive and home appliances sectors, among others.

For more information on Companhia Metalúrgica Prada's operations, see "—Investments and Divestitures—Acquisition Activity—Metalgráfica Iguaçu S.A."

Lusosider Aços Planos, S.A.

Lusosider Aços Planos S.A., or Lusosider, is a flat steel processing facility located in Seixal, near Lisbon, Portugal. Lusosider has the capacity to produce approximately 105,000 tons of hot-rolled pickled coils, 36,000 tons of cold-rolled steel products and 276,000 tons of galvanized steel products per year. Its main customers include service centers and tube making industries.

CSN Distribuição

We have one service center, located in the city of Camaçari, in the state of Bahia, to support sales in the Northeastern and Northern regions of Brazil. We also have a distribution center in the city of Canoas, in the state of Rio Grande do Sul, to support sales in the Southern region of Brazil.

CSN Cut and Bend

We have one service center, located in the city of Vargem Grande Paulista, in the state of São Paulo, to support sales in the Southeast region of Brazil.

SWT Long Steel Mill

In February 2012, we acquired SWT in Germany, which marked our entry into the long steel market. SWT specializes in the production of profiles, including IPE (European I Beams) and HE (European Wide Flange Beams) sections, channels and UPE (Channels with Parallel Flanges) sections and steel sleepers. In total, SWT produces more than 200 types of sections according to different German and international standards. The following table sets forth SWT's production:

	2020	2021	2022
Production of:			
Beam blank (crude steel)	812	811	758
Long steel (finished products)	769	748	712

SWT possesses a 28 km internal railway system, as well as the logistics infrastructure to ensure supply of scrap and delivery of finished products. The main markets served by SWT include non-residential construction, equipment industries and engineering and transport, in Germany and in neighboring countries, including Poland and the Czech Republic. The following table sets forth SWT's capacity:

	Tons per year	Equipment in operation
Process:		
EAF – Electric Arc Furnace	1,100,000	1 furnace
Ladle Furnace	1,100,000	1 furnace
Finished Products:		
Section Mill	1,000,000	1 mill

Raw Materials

The main raw material we use in our long steel production is scrap. In addition, we require electrical energy, natural and technical gases and ancillary materials like ferroalloys, lime, dolomite and foaming coal.

Scrap

Our scrap consumption in 2022 was 0.85 million tons, as compared to 0.92 million tons in 2021. Scrap accounted for approximately 67% and 72% of our production costs in 2022 and 2021, respectively. In 2022, scrap prices increased 13%, as compared to 2021, while production costs increased 23%, mainly due to increased energy costs. We are able to obtain approximately 70% of our scrap needs from within a 250 km vicinity of our production facilities.

Ferroalloys, Lime and Foaming Coal

Because we do not own any sources of ferroalloys, lime or foaming coal, we must buy these raw materials from third-party traders, most of which are located in Europe and source these raw materials from producers around the world.

Rolls

We consume different types of rolls in our rolling mill, usually cast rolls that come from Germany, Italy, Slovenia and China.

Graphite Electrodes

In the smelting shop, which is an electric arc furnace, we use graphite electrodes with a diameter of 750mm. In the ladle furnace, we use electrodes with a diameter of 400mm. We source these electrodes from Europe, Japan and China.

Other Raw Materials

Our production of steel also requires the use of electrodes, rolls, refractory materials and materials for packaging and spare parts, which are mostly purchased from domestic suppliers.

Water

Large amounts of water are required in the production process. Our source of water is the Saale River, located five km from the plant. We use our own water station to pump water via pipelines to the plant.

Electrical Energy and Natural Gas

Steelmaking also requires significant amounts of electrical energy and natural gas, for which we have supply contracts. Under normal conditions, we consume approximately 422 GWh of electrical energy and 392 GWh of natural gas annually.

In 2022, SWT was able to meet its energy needs pursuant to contracts negotiated before the beginning of the conflict between Russia and Ukraine, which conflict resulted in steep price increases for natural gas in Europe throughout the year. In 2023, SWT will need to contract its energy supply in the spot market at significantly higher prices than those paid in 2022.

Suppliers

We acquire the inputs necessary for the production of our products globally. The following table sets forth our main raw materials suppliers:

Main Suppliers	Raw Material
Scholz, TSR	Scrap
RWE Supply & Trading GmbH	Electrical energy
GETEC Energie Gas GmbH	Natural gas
Refractories Site Service GmbH	Refractory
Graftec, W.A.S., SHOWA DENKO	Electrodes
Siemens, Schneider, Voith	Spare parts
Irle, Walzengießerei Coswig	Rolls

Volta Redonda Long Steel Mill

Our Volta Redonda plant for the production of long steel products comprises a 50-ton electric arc steelmaking furnace, 50-ton ladle furnace, continuous casting machine for billets and a hot rolling mill for wire rod and reinforcing bar. This plant is operational and its production increases annually, providing the Brazilian market with products for civil construction and high quality drawing and cold heading applications. In addition to our operational performance improvements, we are developing and negotiating certain equipment enhancements that we expect will provide for nominal capacity of 383 kt/year of billets and 450 kt/year of laminates.

Steelmaking Shop

Designed for an output of 200,000 tons per year, this unit mainly consists of one 50 ton UHP, AC electric arc furnace, one 50 ton ladle furnace, one continuous casting machine for billets with three strands, mobile equipment and cranes, power supply, distribution facilities and auxiliary equipment.

Rolling Mill

Designed for an output of 500,000 tons per year, this unit has one walking-beam reheating furnace, or RHF, a four-stand blooming mill, a 250 ton hot shear, a six-stand roughing mill, a six-stand intermediate mill, a six-stand pre-finishing mill, internal water cooling, a double length flying shear, a stepping cooling bed, a 500 ton cold shear, transfer inspection stand, bundling machine, a water-cooling section before wire finishing mill, a 10-stand high-speed wire finishing mill, a water-cooling section after wire finishing mill, a laying head, a loose coil cooling line, reforming device, bundling machine, stripper and coil handling devices.

Production Output

The following table sets forth the production output of our Volta Redonda long steel mill:

	2020	2021	2022
		(in thousands of tons)	
Billets (crude steel)	223	228	208
Long steel (finished products)	216	236	217

Raw Materials and Energy Suppliers

The main raw material we use in our long steel production in Volta Redonda is scrap, in addition to pig iron. We also use blooms, which we produce in our blast furnace. In addition, our production operations consume electrical energy, natural and technical gases and ancillary materials like ferroalloys, lime, dolomite and foaming coal. The supply sources for these materials are the same used for our flat steel operations. See "—Raw Materials and Suppliers."

Our Mining Segment

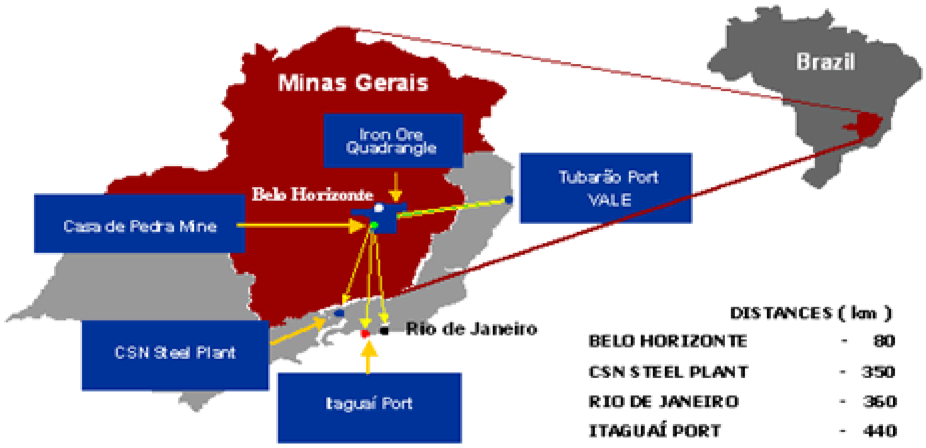
Our mining activities are among the largest in Brazil and are mainly driven by the exploration of one of our iron ore reserves, Casa de Pedra, in the state of Minas Gerais. We sell our iron ore products mainly in Asia, Europe and Brazil with sales and marketing from Brazil and Austria.

Casa de Pedra Mine

Casa de Pedra is an open pit mine located in the city of Congonhas, in the state of Minas Gerais, approximately 80 km south of the city of Belo Horizonte and 360 km north of the city of Rio de Janeiro. The site is approximately 1,000 meters above sea level and accessible from the cities of Belo Horizonte or Congonhas through mostly paved roads.

Casa de Pedra mine is a hematite-rich iron deposit of an early proterozoic banded iron formation in Brazil's "Iron Ore Quadrangle," which is located in the central part of the state of Minas Gerais in the Southeast region of Brazil and has been one of the most important iron producing regions in Brazil for the last 50 years. We incorporated the mine in 1941, but it has been operating since 1913.

Casa de Pedra mine supplies all of our iron ore needs, except pellets, and produces lump ore, sinter feed and pellet feed fines with high iron content. The following map illustrates the location of our Casa de Pedra mine:



Our mining rights for Casa de Pedra include the mine, a beneficiation plant, roads, a loading yard and a railway branch and are duly registered with the ANM. The ANM has also granted us easements in 19 mine areas located in the surrounding region of the Casa de Pedra mine.

Exploration undertaken at Casa de Pedra mine is subject to mining lease restrictions, which were reflected in our iron ore reserve calculations. Quality requirements (chemical and physical) are the key "modifying factors" in the definition of ore reserves at Casa de Pedra mine and were properly accounted for by us.

Mineral Resources

The mineral resource estimate performed by us is summarized in the table below as of November 1, 2017. In 2021, an independent check on our reported mineral resources was performed using data provided by us. The mineral resource statement was successfully calculated within 5% of stated quantity and quality.

As of November 1, 2017

Resource Classification	Tonnage	Fe	SiO2
Amount	*(Mt)*	*(%)*	*(%)*
Measured	1,123	41.97	36.63
Indicated	3,145	39.70	38.67
M+I	4,268	40.30	38.13
Inferred	1,734	37.56	39.82

Reasonable prospect of eventual economic extraction was verified by performing a pit optimization.

Mineral Reserves

The 2022 mineral reserves estimate for the Casa de Pedra mine was developed in accordance with the standards promulgated by the SEC. We provide below a summary of the procedures and methods applied to derive the mineral reserves. The work has been undertaken under the supervision of a "qualified person" as defined under the standards promulgated by the SEC.

To convert mineral resources to mineral reserves, it was necessary to forecast and estimate product price, metallurgical recovery, mining dilution and ore loss factors, royalties and costs associated with mining, processing, overhead and logistics. These parameters were used to derive economic cut-off grades and create a feasible pit design based on geotechnical assumptions, a production schedule and a financial model.

The estimates described below are consistent with the quality of information available at the time of preparation of the report, data supplied by outside sources, and the assumptions used.

The basis of the mine planning work was a mineral resource model estimated in compliance with the CRISCO standards. The mineral resources were internally developed by us and further audited by an external company in 2021. No critical issues were reported.

The detailed breakdown of the mineral reserve is presented in the following table. The reserve classification reflects the level of accuracy of the modifying factors of the reserve.

Mineral Reserve as of December 31, 2021

Mineral Reserve Category	Tonnage	Fe
	(Mt)	*(%)*
Proved	152.9	42.49
Probable	1,925.5	41.07
Total	**2,078.4**	**41.17**

Notes: Tonnages are reported in wet basis.

Mineral Reserve is included in the mineral resource.

Mineral reserves are based on measured and indicated resources only. The estimate includes dilution and ore loss factors. Stockpiles within the current pit limits were considered waste as they are not classified as mineral resource.

To estimate the mineral reserves, a number of activities were completed including detailed design of pit and waste dumps, mine scheduling, fleet and workforce calculations, along with other key aspects of the mineral reserve, such as mineral processing, infrastructure, ESG considerations, risk analysis, cost estimates, economic evaluation and sensitivity analysis. All studies were developed at a level of accuracy in line with a mineral reserve estimate.

The base case for the mineral reserves considered the process of ore at the current processing plant at Casa de Pedra along with the greenfield project of P15 that is, as of the date of this annual report, under development and licensing procedures.

The Casa de Pedra mine is based on a mining concept that uses conventional drill, blast, load and haul techniques for all mining areas and rock types. 100% of rock will be blasted and loaded with excavators and loaders into off-road trucks, and hauled to final destinations, i.e., primary crusher, stockpiles or waste dumps.

Specifically, primary mining will be undertaken by large hydraulic excavators (26-m3 bucket capacity) coupled with 240st off-road trucks. Front-end loaders of 25-m3 bucket capacity will also operate at the pit and stockpiles.

The materials will be mined in 10-m high benches which are considered an appropriate balance between productivity and selectivity.

Grade control will be performed via drilling, sampling and assaying potential ore material within the pit boundaries.

The mine will operate 365 days, 24 hours in 4 shifts. The base case for the Project is an owner's operation.

The long range prices assumed for mine planning purpose correspond to year 2025. The product pricing forecast is shown in the table below.

Table 2 – Product Price Forecast

Platts Iron Ore Index	Unit	Forecast by Year				Long Term Forecast
		2021	2022	2023	2024	2025
Platts 62..........................	US$/dmt	102.2	87.7	81.1	78.0	74.0
Platts 65..........................	US$/dmt	122.6	105.2	97.3	93.6	88.8
Platts 58..........................	US$/dmt	71.5	61.4	56.8	54.6	51.8

Various test works were performed in a pilot facility to derive the mass yield function, i.e. Mass Recovery = 1.1786 * Fe%. Hematite, friable itabirites, compact itabirites and canga were considered amenable for processing.

The economic mine cut-off to decide whether a block should be mined or left in-situ was calculated by the NPVS software of Datamine.

The pit boundaries were limited by a number of physical constraints such as mining rights, environmental licenses, land properties and infrastructure as illustrated in the figure below.

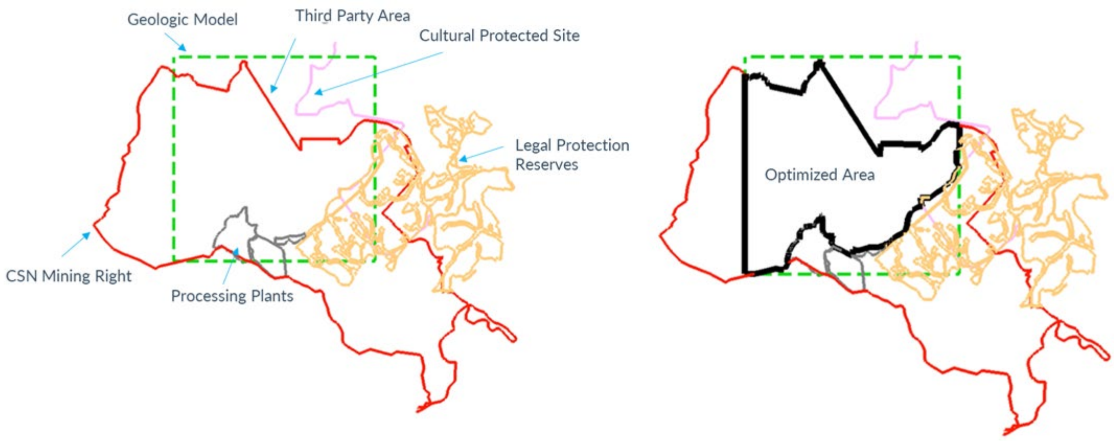


Figure 1 – Physical Constraints

Planned dilution and ore loss factors were incorporated to the block model through a regularization procedure. The model contains regularized blocks sized 25 m (X) by 25 m (Y) by 13 m (Z) which reflects the selectivity mining unit (SMU) dimensions. Additionally, a uniform 5% unplanned dilution factor and 95% mining recovery were applied to the pit optimization.

A plan view of the Reserve pit design and its corresponding tonnage evaluation are shown below.

Table 3 – Pit Design Evaluation

Item	Unit	Value
Ore	Mt	2,078
Waste	Mt	1,091
Total Rock	Mt	3,170
Strip Ratio	t/t	0.52

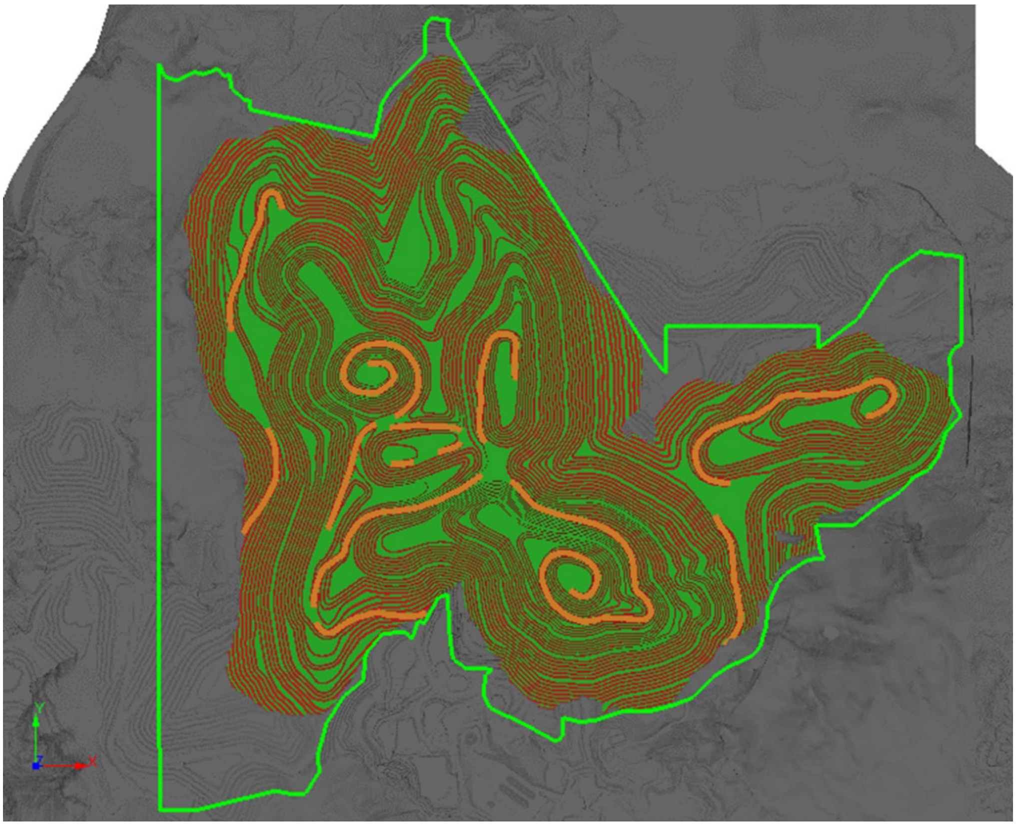


Figure 2 – Plan View of the Pit Design

The Casa de Pedra Reserves reached 2.80 Bt in 2020. Considering the material mined out in 2021 (depletion) the total Reserves amounted to 2.77 Bt. In 2022, the mineral reserve was updated at 2.1 Bt in accordance to SEC rules. The variation is due to a number of factors, illustrated in the graph below, including: (i) In 2022, the estimation of pit boundaries were more constrained due to the exclusion of the ore within adjacent areas to the northeast area of the mine due to the proximity to mineral rights owned by third parties; and (ii) review of the pit design accordingly to the updated technical and economic parameters.

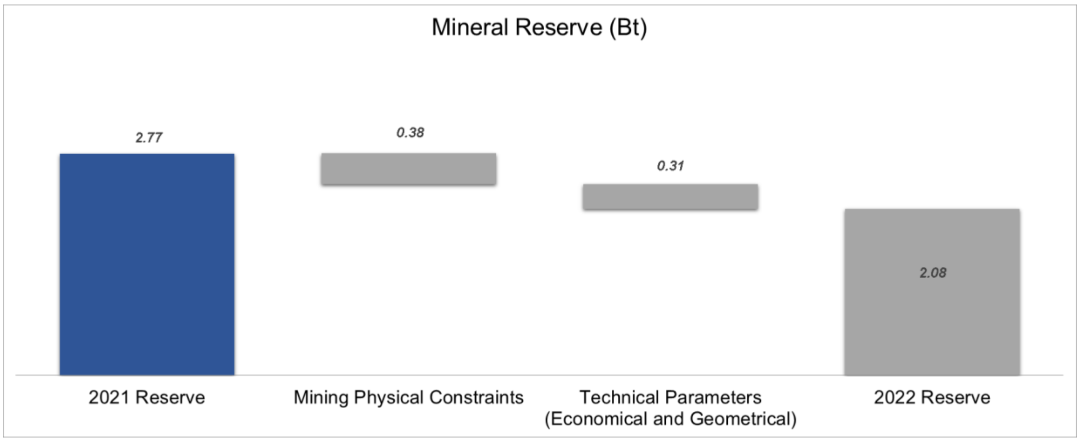


Figure 3 – Waterfall graph indicating the mineral reserve changes from 2021 to 2022

Engenho Mine

Engenho mine, which began operations in 1950, is an open cast mine located in the Southeast region of the "Iron Ore Quadrangle," 60 km from the city of Belo Horizonte, in the state of Minas Gerais. Its ore is processed in the Pires processing plant and in our unit at Casa de Pedra.

Our mining operations at Casa de Pedra and Engenho mines use hydraulic scoops and wheeled loaders to extract iron ore that is then transported by a large fleet of trucks with an installed annual run of mine capacity of approximately 120 million tons. The iron ore is then processed in our treatment stations, which have an installed capacity of 33 million tons of production per year (covering production in the central plant and production in the dry plants). We use energy from 100% renewable sources, specifically hydroelectric sources.

Fernandinho Mine

Fernandinho mine is located in the city of Itabirito, in the Mideastern region of the state of Minas Gerais, approximately 40 km from the city of Belo Horizonte. Fernandinho mine is an open pit mine and is accessible from the cities of Belo Horizonte or Itabirito through mostly paved roads. Fernandinho mine began operations in 1950.

Limestone and Dolomite Mine

The extraction and preparation of our limestone and dolomite takes place at our Bocaina mining facility located in the city of Arcos, in the state of Minas Gerais. Our Bocaina mining facility is an open pit mine, which is accessible from the cities of Belo Horizonte, located approximately 230 km away, and Volta Redonda (where the Presidente Vargas Steelworks is situated), located approximately 460 km away, through paved roads.

The ore in this mine is excavated by a fleet of wheel loaders, excavators and tire tractor, and is transported by a fleet of trucks. We also maintain a fuel truck, a water truck and additional heavy equipment.

Our Bocaina mining facility has an installed annual production capacity of approximately 12.0 million tons and has sufficient limestone and dolomite reserves to adequately supply our steel production, at current levels, for approximately 36 years.

Mineral Resources

The mineral resources of Bocaina quarry were estimated at the end of 2013 and subsequently revised and audited in 2020 by a qualified person following the standards set forth by the SEC's Modernized Property Disclosure Requirements for Mining Registrants, as described in Subpart 229.1300 of Regulation S-K (*Disclosure by Registrants Engaged in Mining Operations*), or S-K 1300.

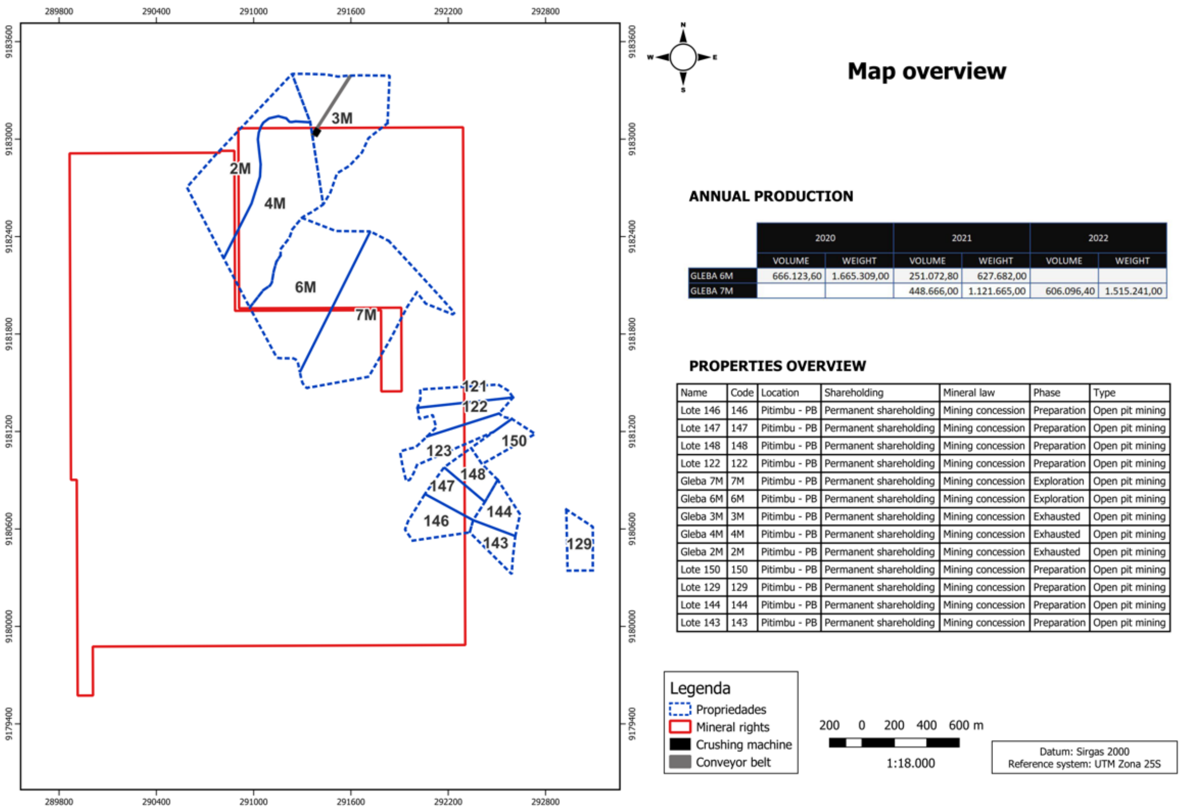
CSN Cimentos engaged Minerals and Strategy Ltda. to prepare an independent Technical Report Summary on the Mina Bocaina Operation in the municipality of Arcos, state of Minas Gerais. The purpose of the

Technical Report Summary is to support the disclosure of mineral resource and mineral reserve estimates for the Arcos Operations as of December 31, 2020.

The report follows the international standard of S-K 1300 and summarizes the history of mineral exploration from the beginning in 1959 through 2020, mineral resources and reserves, mine design, infrastructure, capital and operation costs, and market analysis and technical-economic feasibility study. The report also aims to guide the organization of the technical collection existing in the company, highlighting them necessary, as well as their validity.

The qualified professionals who prepared this technical report understand that there are no risks related to mining, processing or environmental licensing that may materially affect the estimation of reserves. The main topics of the Technical Report Summary are presented here and the mineral reserves were updated with the consumption from December 31, 2021 to December 31, 2022.

The chart below shows an overview on our properties and annual production:



The table below shows a summary of mineral resources of Bocaina quarry as of December 31, 2021. There are no additional activities carried out from December 31, 2020 up to the date of the Technical Report Summary that modified the numbers of mineral resources.

	Quantity	CaO	MgO	SiO2	Al2O3	Fe2O3	LOI	FSC
	(Mt)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	
Measured								
Dolomitic Flux	9.51	35.98	16.03	1.31	0.13	0.15	44.99	
Calcitic Flux	28.88	53.63	0.95	1.42	0.29	0.14	42.56	
Limestone for clinker...............	61.16	49.15	2.54	5.47	0.75	0.47	40.74	297
Indicated								
Dolomitic Flux	3.63	39.33	14.01	1.07	0.15	0.15	44.76	
Calcitic Flux	19.74	53.39	0.99	1.65	0.29	0.16	42.54	
Limestone for clinker...............	42.04	49.35	2.03	6.15	0.82	0.55	40.22	266
Measured + Indicated								
Dolomitic Flux	13.14	36.90	15.47	1.24	0.13	0.15	44.93	
Calcitic Flux	48.62	53.54	0.96	1.51	0.29	0.15	42.55	
Limestone for clinker...............	103.21	49.23	2.33	5.75	0.78	0.50	40.53	284
Inferred								

	Quantity	CaO	MgO	SiO2	Al2O3	Fe2O3	LOI	FSC
	(Mt)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	
Dolomitic Flux	2.53	44.86	8.64	0.66	0.19	0.12	44.17	
Calcitic Flux	14.97	53.27	1.05	1.77	0.27	0.17	42.59	
Limestone for clinker...............	58.57	45.65	2.50	11.61	1.28	0.96	37.37	132

Note: Mineral resources do not include mineral reserves.

Mineral Reserves

The mineral reserves estimated for the Bocaina quarry were developed in accordance with the SEC's standards. This section provides a summary of the procedures and methods applied to drive the mineral reserves. The work has been undertaken under the supervision of a qualified person, as defined in the SEC's guidelines.

To convert mineral resources into mineral reserves, the raw material needs for cement manufacturing were considered, with a focus on chemical quality and quantity required for the cement plant, as well as the needs of limestone and dolomite for the steelmaking plant. As all lithologies are usable for the manufacture of cement. The mining project was designed to maximize the recovery of lithologies, without interfering with environmental preservation areas or processing infrastructure areas and keeping strictly within the limits of CSN Cimentos' properties.

The waste material is composed by Marl with CaO content below 32.7% at the bottom of the quarry, and it is not necessary to be removed. As a result, it does not affect the economic viability of the mineral reserves.

The estimates described herein are consistent with the quality of information available at the time of preparation of the Technical Report Summary, data supplied by outside sources and the assumptions applied.

The following table sets forth a detailed breakdown of the mineral reserves as of December 31, 2021. The reserves classification reflects the level of accuracy of the modifying factors of the reserve.

	Tonnage	CaO	MgO	SiO_2	Al_2O_3	Fe_2O_3	LOI	FSC
	(Mt)	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	*(%)*	
Mineral Reserve Category								
Proved								
Dolomitic Flux	17.67	35.53	16.65	1.11	0.14	0.16	45.08	
Calcitic Flux	56.45	53.37	0.90	1.70	0.32	0.17	42.64	
Limestone for clinker...............	139.08	47.84	2.51	7.16	1.07	0.60	39.81	220
Probable								
Dolomitic Flux	11.85	41.56	11.14	0.58	0.18	0.12	44.76	
Calcitic Flux	6.42	53.07	0.92	1.44	0.27	0.13	42.96	
Limestone for clinker...............	50.57	44.79	4.15	9.52	1.01	0.74	38.66	158
Total								
Dolomitic Flux	29.52	37.80	14.58	0.91	0.16	0.14	44.96	
Calcitic Flux	62.87	53.34	0.90	1.68	0.31	0.17	42.67	
Limestone for clinker...............	189.65	47.06	2.93	7.76	1.06	0.64	39.51	201
Waste (CaO <33.1%)...............	64.99							

Notes: Mineral reserves are based on measured and indicated mineral resources only.
Mineral reserves are estimated with the CaO cut-off content of 32.7%, for the total to reach the product targets.
Figures shown as totals may not represent an arithmetic sum of the figures that precede them due to rounding.

The mining inventory mentioned is based on measured and indicated resources only. To estimate the mineral reserves, several activities were completed, including detailed open pit and waste dump designing, mine scheduling, fleet and workforce calculations, along with other key aspects of the mineral reserve, such as mineral processing, infrastructure, ESG, risk analysis, cost estimates, economic evaluation and sensitivity analysis. All studies were developed at a level of accuracy in line with a mineral reserves estimation.

The baseline for the mineral reserves considered the process to feed our current cement plant and to supply our steelmaking plant also.

The Bocaina quarry is based on an open pit mining concept that uses conventional drilling, blasting, loading, and hauling techniques for all mining areas and rock types. The rocks are drilled with a 3" or 4" hydraulic drill and exploited using ANFO or explosives like emulsion. Loading is done by wheel loaders and hauling with trucks of 34 tons of capacity or off-road trucks with a capacity of 60 tons. Both feed the crushing system.

The crushing system is composed by comminution processes and granulometric classification. There are two crushing lines, one to the flux production, and the second to the clinker production. For clinker manufacturing, there is the goal of lime saturation factor (LSF) between 205 and 235, the MgO content between 2.2 and 2.8, and the granulometry less than 100 mm.

The materials are mined in 15-meter-high benches which are considered an appropriate balance between productivity and selectivity. Grade controls are performed via drilling, sampling, and assaying of the ore material within the pit boundaries.

The Bocaina quarry is in the city of Arcos, in the state of Minas Gerais. And, since the early 1970s, calcitic flux (limestone) and dolomitic flux (dolomitic limestone) have been supplied to Presidente Vargas Steelworks. These products are used in the process of sintering and calcination to produce steel.

After the installation of the Arcos cement plant, the same quarry also supplied 100% of the limestone to the production of the clinker and cement. CSN Cimentos' cement production takes place in the Arcos and Volta Redonda Units. All clinkers used in the process are produced at the plant in Arcos, which has an installed capacity of 2.8 million tons per year. The clinker is transported from Arcos to Volta Redonda by railway.

All the ore mined at the Bocaina quarry is to supply the industrial plants to produce clinker, cement and steel, and there are no direct sales of the ore. For the purpose of economic analysis of the mine, a net tax revenue was estimated based on the product prices set forth in the following table:

Product	**Unit**	**2021**
Dolomitic fluxes	US$/t	4.81
Calcitic fluxes	US$/t	4.81
Limestone for clinker manufacturing	US$/t	2.89

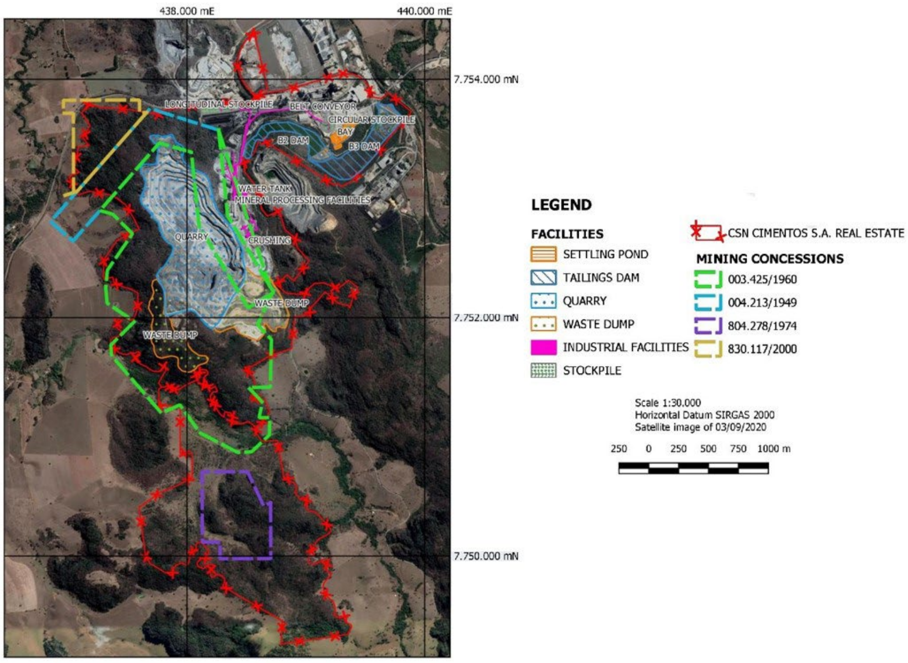
To estimate the mineral reserves, the qualified persons considered the use of 40% of limestone to produce calcitic flux, the use of 70% of dolomite and 30% of dolomite limestone to produce dolomite flux to achieve the specification of these products. The rest of mineral reserves is limestone for clinker production.

The proportion of limestone among the products was adopted by CSN Cimentos, and dolomitic limestone among the products was calculated with the average of MgO content of dolomite and dolomite limestone for dolomite flux.

The CaO cut-off content of 32.7% is also considered the LSF target of at least 200 for the sum of the proven and probable reserves of limestone for clinker.

Historically, roughly 30% of the total dolomite has clay contamination, and is not possible to be recovered to the steelmaking, but it is useful for clinker production.

The pit boundaries were limited by a number of physical constraints such as mining rights, environmental licenses, land properties and infrastructure, as illustrated in the following figure:



Physical Constraints

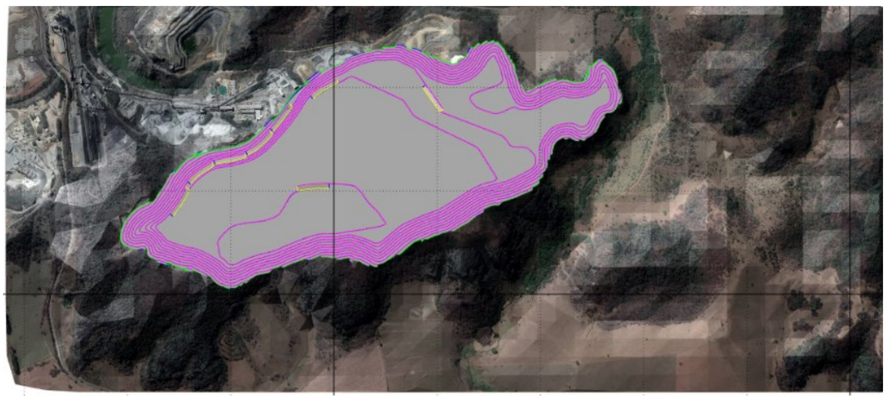
The mining plan for proven reserves foresees the extraction of 7,500,000 tons of ores per year by 2071, considering the production of 2,418,742 tons of ore to produce calcitic flux, 1,247,638 tons of ores to produce dolomitic flux and 3,833,621 tons of ore for clinker production. The mining exploitation is divided into four steps.

A plan view of the ultimate pit design and its corresponding tonnage evaluation are shown below. The waste material composed by Marl with CaO content below 32.7% is at the bottom of the quarry, and it is not affecting the ores exploitation.

Following is the final pit design evaluation:

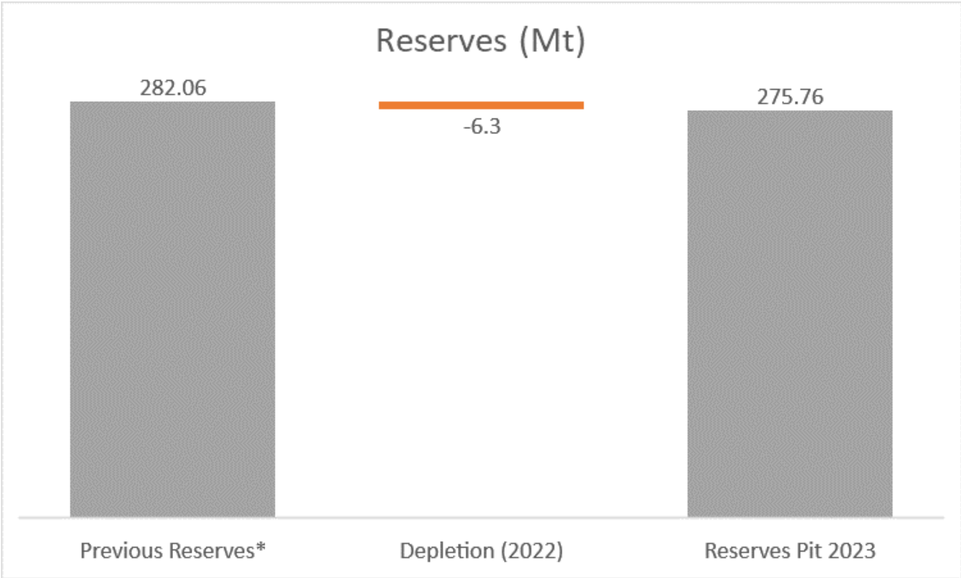
Item	Unit	Value
Dolomitic Flux	Mt	31.56
Calcitic Flux	Mt	65.36
Limestone for clinker.................................	Mt	196.89

Following is a plan view of the final pit design:



CSN Bocaina quarry reserves were 282.06 million tons at the end of 2022, and considering the material mined in 2023 the reserves would be 275.76 million tons at the end of 2023.

Following is an estimated waterfall graph indicating the mineral reserve changes from 2022 to 2023:



Tin Facility

We own a tin facility in Itapuã do Oeste, in the state of Rondônia, through our subsidiary ERSA. This facility has an installed annual production capacity of approximately 3,600 tons of tin, which we use substantially as a raw material to produce tin plate, a coated steel product. A small part of our tin production that is not used as raw material is sold to third parties; however, the results from these sales are insignificant in our consolidated results.

Mineral Rights and Ownership

We hold concessions to mine iron ore, limestone and dolomite. We purchase manganese in the local market. As of the date of this annual report, we own 78.2% of CSN Mineração mines and 100% of Bocaina and Santa Bárbara mines. In addition, each mine is an "open pit" mine. Iron ore extraction, crushing, screening and concentration take place in three different sites: Casa de Pedra mine and Pires beneficiation plant (both of which belong to CSN Mineração) and Fernandinho mine (which belongs to Minérios Nacional).

CSN Projects: Sergipe, Pará, Ceará and Paraná Operations

Mineral Resources

The mineral resources of CSN Projects were estimated, revised and audited in 2021 by a qualified person following the standards of S-K 1300.

CSN Cimentos engaged go.to6 to prepare an independent Technical Report Summary on the Sergipe Project, municipality of Maruim, state of Sergipe; Pará Project, municipality of São João de Pirabas, state of Pará; Ceará Project, municipality of Jaguaruana, state of Ceará; and Paraná Project, municipality of Cerro Azul, state of Paraná. The purpose of this Technical Report Summary is to support the disclosure of mineral resource and mineral reserve estimates as of December 31, 2021.

The Technical Report Summary conforms to S-K 1300 and Item 601(b)(96) Technical Report Summary.

The independent Technical Report also aims to establish improvements and possible adjustments in geological activities with help of external professionals in geology and mining of carbonate rocks and contribute to the development of our greenfield projects. The report follows the international standard of S-K 1300 and summarizes the history of mineral exploration from 2017 through 2021, mineral resources and reserves.

The Technical Report Summary also aims to guide the organization of the technical collection existing in the company, highlighting them necessary, as well as their validity.

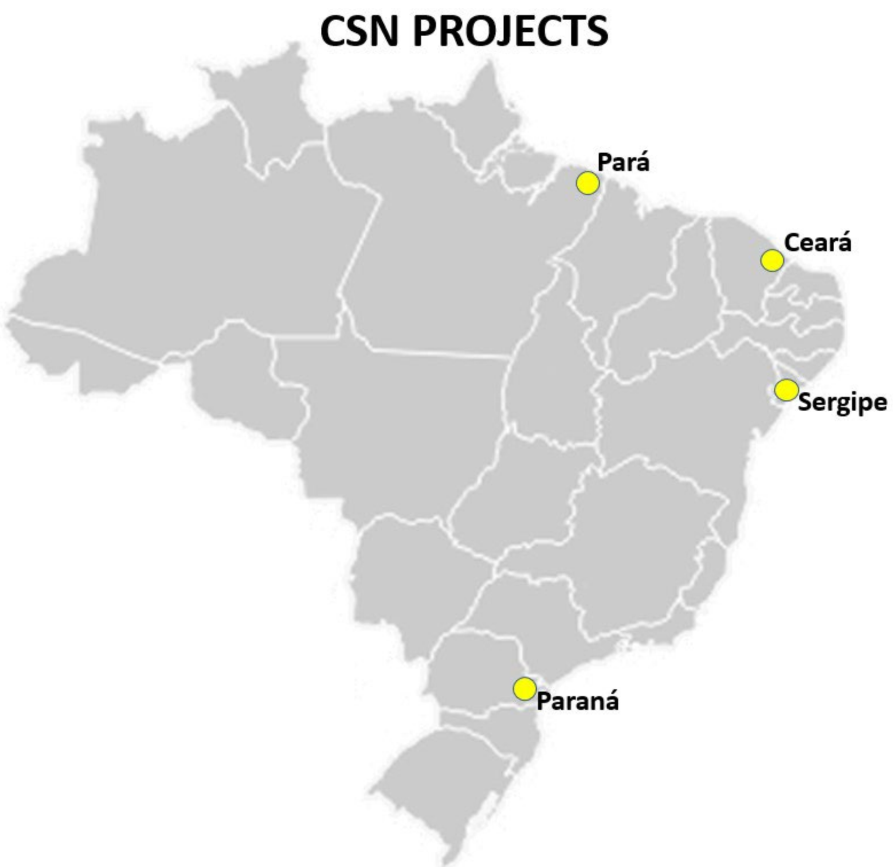
The qualified professional who prepared this technical report understands that there are no risks related to geology, mining, processing, environmental licensing that may materially affect the estimation of mineral resources and reserves.

The main topics of the Technical Report Summary presented here were updated to December 31, 2021.

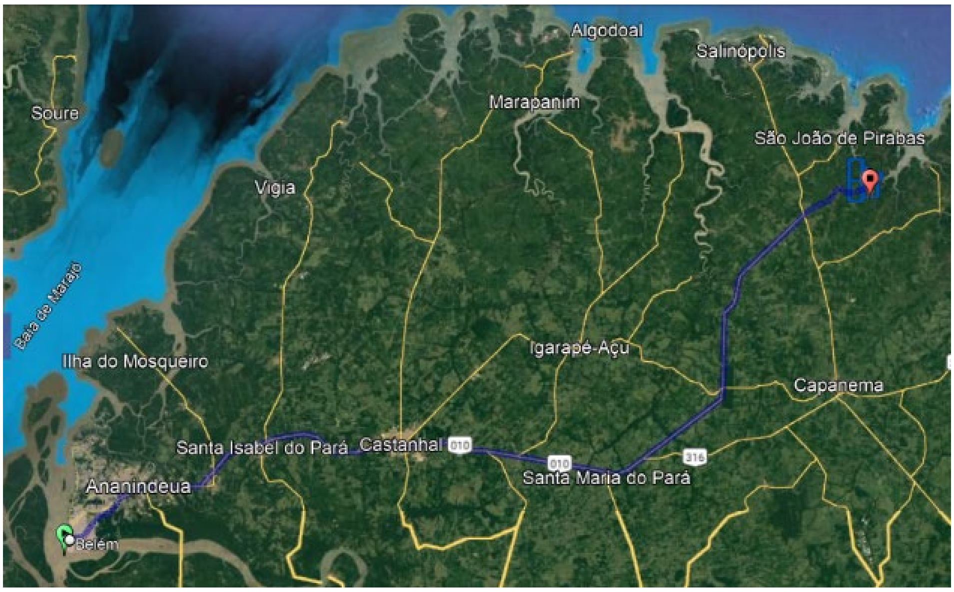
The following table sets forth a summary of mining rights and mineral resources and reserves as of December 31, 2021:

		Resources			Reserves		
Project	**Mining Rights**	**Measured**	**Indicated**	**Inferred**	**Proven**	**Probable**	**Total**
		(in Mt)	*(in Mt)*	*(in Mt)*	*(in Mt)*	*(in Mt)*	*(in Mt)*
Sergipe........	**Total**	**270**	**278**	**368**	**0**	**235**	**235**
	878.010/2017	0	21	207	0	74	74
	878.039/2018	270	257	161	0	162	162
Pará	**Total**	**70**	**357**	**417**	**0**	**283**	**283**
	851.354/2017	46	137	7	0	111	111
	851.355/2017	18	58	25	0	88	88
	851.358/2017	2	74	216	0	45	45
	851.359/2017	4	87	168	0	40	40
Ceará	**Total**	**454**	**502**	**903**	**0**	**167**	**167**
	800.108/2014	180	7	0	0	40	40
	800.096/2014	37	6	0	0	51	51
	800.097/2014	49	69	212	0	0	0
	800.018/2015	13	38	34	0	0	0
	800.020/2015	4	0	0	0	0	0
	800.176/2011	20	74	199	0	0	0
	800.177/2011	0	57	198	0	0	0
	800.179/2011	0	28	173	0	0	0
	800.181/2011	107	149	22	0	77	77
	800.507/2013	22	10	0	0	0	0
	800.111/2014	22	64	66	0	0	0
Paraná	**Total**	**4**	**204**	**68**	**0**	**356**	**356**
	820.563/1980	0	31	0	0	34	34
	820.564/1980	0	155	0	0	158	158
	826.388/2007	4	18	68	0	164	164

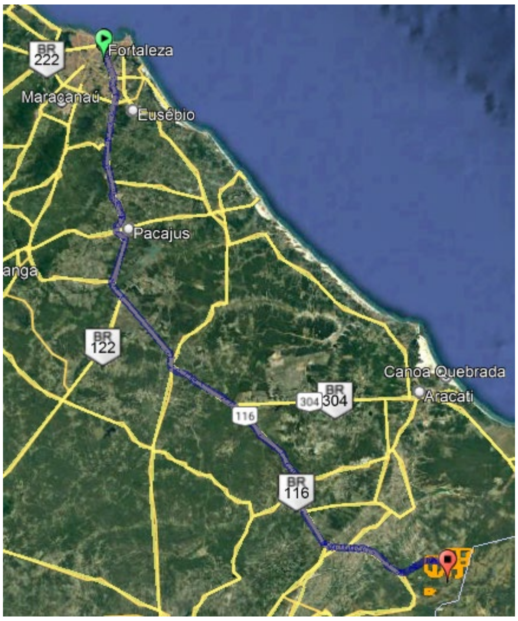
The greenfield projects listed above are in four different states in Brazil, close to the regions of great demand of the civil construction materials market, with a strategic positioning for our growth. The following map sets forth the location of these greenfield projects:



The following map sets forth the location of the Pará Project in São João de Pirabas, and the access by road departing from the city of Belém, capital of the state of Pará:



The following map sets forth the location of the Ceará Project in Jaguaruana, and the access by road departing from the city of Fortaleza, capital of the state of Ceará:



The following map sets forth the location of the Sergipe Project, in Maruim, and the access by road departing from the city of Aracaju, capital of the state of Sergipe:

The following map sets forth the location of the Paraná Project, in Cerro Azul, and access by road, departing from the city of Curitiba, capital of the state of Paraná:

<u>Mineral Reserves</u>

The mineral reserves estimated for CSN Cimentos' greenfield projects were developed in accordance with the SEC standards. This section provides a summary of the procedures and methods applied to drive the mineral reserves. The work has been undertaken under the supervision of a Qualified Person as defined in the SEC guidelines.

To convert mineral resources into mineral reserves, the raw material needs of the cement manufacturing were considered, focusing on the chemical quality and quantity needed to supply a future plant at each location, creating a feasible pit project based on geotechnical assumptions, within the limits of the mining rights of the projects. The estimation described herein is consistent with the quality of information available at the time of Technical Summary Report, data supplied by outside sources and the assumptions applied.

Each site is at different stage of development and has different levels of information (Ceará Project, Sergipe Project, Pará Project and Paraná Project).

The basis of the mine planning work was a mineral resource model estimated in accordance with the SEC S-K 1300 standards.

The following table sets forth a detailed breakdown of the mineral reserve of each site as of December 31, 2021. The reserves classification reflects the level of accuracy of the modifying factors of the reserve.

	Sergipe	**Pará**	**Ceará**	**Paraná**
	Tonnage	**Tonnage**	**Tonnage**	**Tonnage**
	(in Mt)	*(in Mt)*	*(in Mt)*	*(in Mt)*
Mineral Reserve Category (Limestone for clinker)				
Proved	0	0	0	0
Probable...	235.50	283.30	167.25	356.49
Total...	**235.50**	**283.30**	**167.25**	**356.49**

Notes: Mineral reserves are based on measured and indicated mineral resources only.
Mineral reserves are not included in the mineral resource.

The mining inventory is based on measured and indicated resources only.

For all greenfield projects, reserves can only be defined as proven reserves when all modifying factors were considered, such as:

- obtaining the mining concession title from the ANM;
- acquisition of properties, land pursuant to mining easements or agreement with surface owners;
- carrying out additional technical studies to identify possible mining limiting factors (such as drainages, natural caves, geotechnical aspects, vegetation, hydrogeology and technical constraints not yet studied, etc.); and
- environmental permits to be granted.

Each project has a certain number of mining rights that make up the project as a whole.

Elizabeth Mines

Pitimbu Mine

The open pit mining of limestone, clay and sand will take advantage of the mineral reserves of an area of 746.73 ha as required by the ANM. The mining project will be developed in three phases, with four Pits. Mining will follow a sequence: cleaning of the area; removal of sterile; disassemble; crushing and transport. The deposit is exploited mechanically in an open pit. The dismantling of the rock is done using explosives, which are delivered on the day of detonation for immediate use according to an established fire plan.

After being extracted, the ore goes to a crusher and later to a conveyor belt that will take it to the industrial unit of Elizabeth Cimentos Ltda., which is the only customer. In addition to the crusher, the following are used in the process: conveyor belt, hydraulic drills, off-road loaders and trucks, excavators, hydraulic breakers, motor graders. 40 employees are responsible for the operationalization of the mine employees.

Identification of the Mining Process

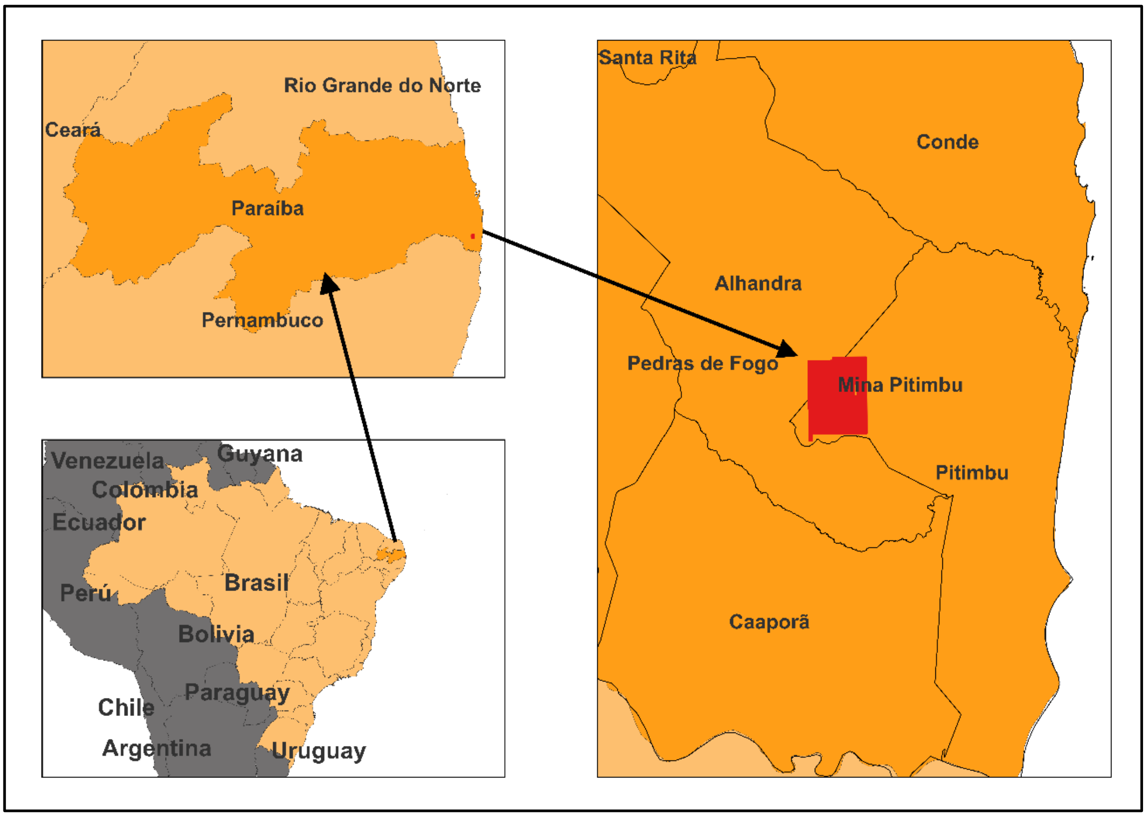
The Lime, Clay and Sand Extraction project began in 2014 through Mining Ordinance No. 118 of process 846.200/2000 of the ANM.

The required traverse has an area of 746.43 ha. The mooring point of the traverse with the following mooring coordinates: Latitude: -07°24'35"800; Longitude: -34°54'39"700. The length of the mooring vector is 955.00m and the angle of the mooring vector is 60°52'00"006, course of the mooring vector: NE.

<u>Location</u>

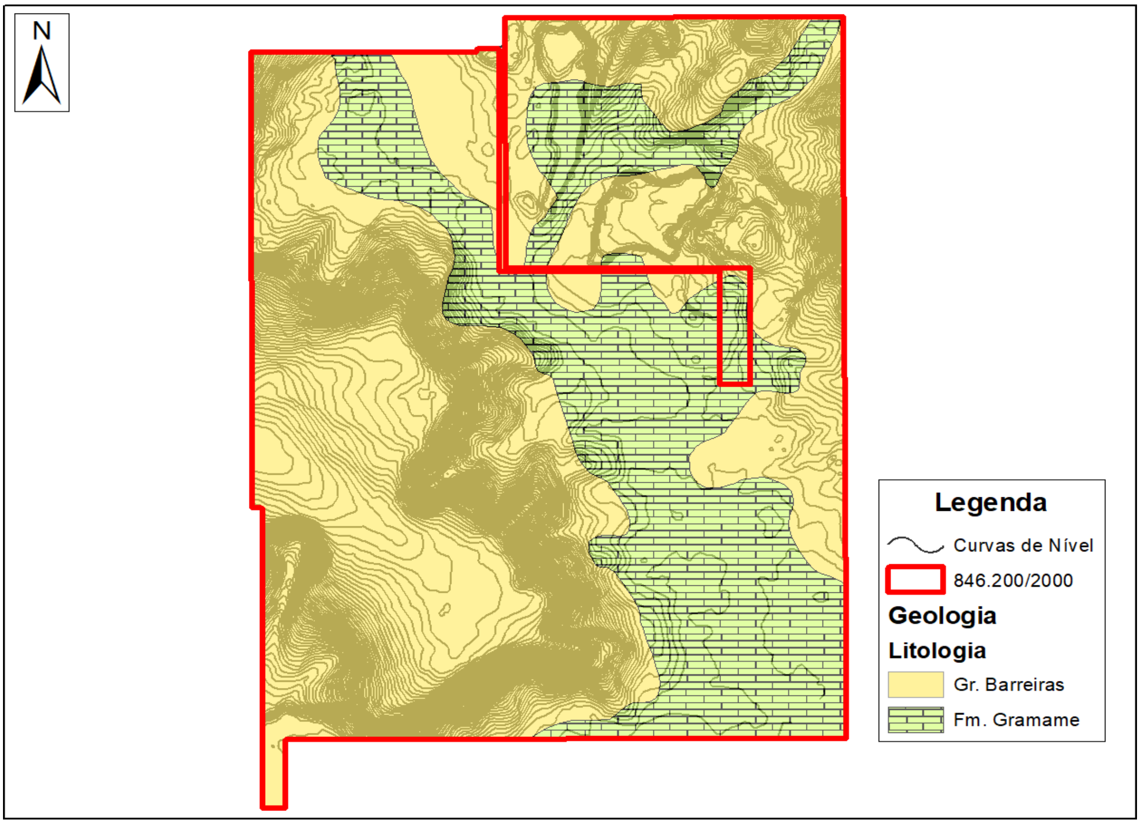
The area evaluated in this report is located in the city of Alhandra, located in the Immediate Geographical Region of João Pessoa, state of Paraíba. Access is from João Pessoa on Highway BR-101 towards Recife to Highway PB-034, following Highway PB-028 to the area. The main road distances are:

- João Pessoa: 45 km;
- Recife: 105 km; and
- Natal: 200 km.



Local Geology

The range of occurrence of limestone rocks is covered by sediments of the Barreiras Group that support the highest parts of the topography.



Reserves

	Proven Reserve	
	Tons	**Density**
Lithology		
Solo	90,316,000.00	1.8
Limestone	154,845,000.00	2.5
Total	**245,161,000.00**	

Considering the economic viability and a greater density of information that guarantee a greater degree of certainty of the reserves, it can be considered that the proven reserve of the deposit is almost 155,000,000 million tons.

	Probable Reserve	
	Tons	**Density**
Lithology		
Solo	22,560,000.00	1.8
Limestone	33,150,000.00	2.5
Total	**55,710,000.00**	

Geological modeling allowed cubing the measured and indicated resources for the area of around 217 million tons of limestone. The deposit's probable reserve adds up to over 33,000,000 million tons.

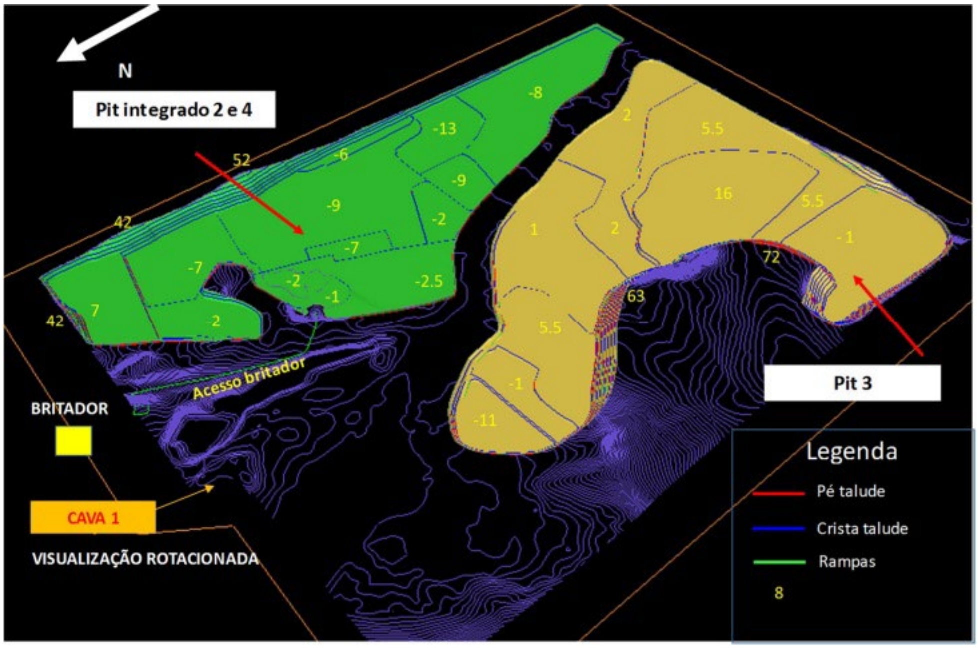
The sum of proven reserves plus probable reserves results in 188,000,000 million tons of limestone, which represents a use of 86.5% of geological resources.

Technical and Economic Use

Aiming to analyze the technical and economic use of the reserves described above, we carried out a simulated technical and economic study of the use of limestone, focusing on its use in the cement industry, an undertaking that we want to implement to our business.

Maintaining the current consumption of 1,600,000 tons of limestone for the manufacture of 3,000 tons of clinker a day, the useful life of the enterprise with the proven reserve of 155,000,000 tons of limestone is more than 96 years.

Adding the 33,000,000 tons of the indicated reserve, the useful life extends to 117 years.



Installed Capacity

The nominal installed capacity is 800 ton/h and 150,000 ton/month, taking into account the 1-shift shift. Being able to expand production according to the number of shifts.

A study conducted by Procalcim concluded that the volume of the remaining proved reserves was calculated at almost 155 million tons of limestone, which can be increased by another 33 million tons with new drilling campaigns in the probable reserve. With the sum of the Reserves around 188 million tons of limestone.

Lafarge Mines

Barroso/MG Plant

Mining Complex of Barroso Plant

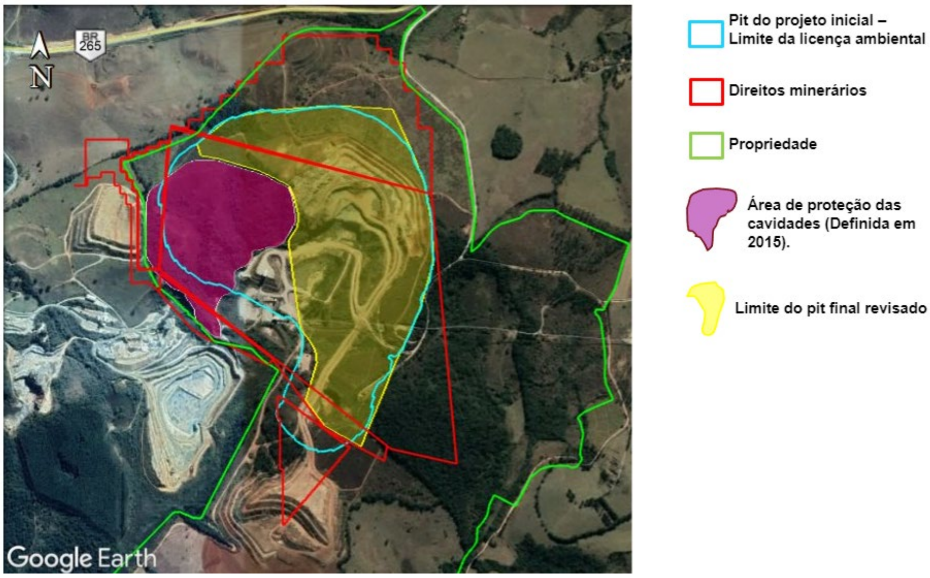
The Mining Complex of Barroso Plant consists of two mines:

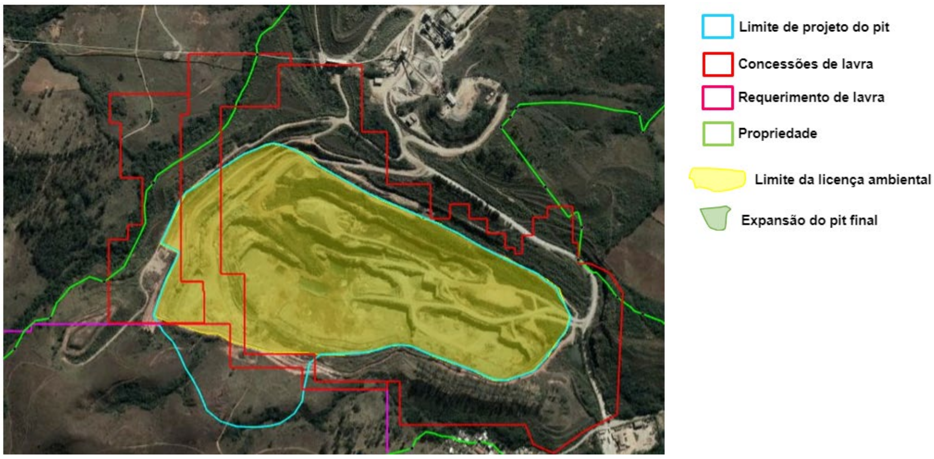
- Capoeira Grande Mine, located adjacent to the industrial plant area of the factory, in Bairro do Rosário, in the municipality of Barroso, in the state of Minas Gerais. This mine comprises the following 3 Mining Rights: ANM-822.551/1971, ANM-805.813/1975 and ANM-832.011/1999. Note: On February 26, 1986, case ANM-822.551/1971 included the titles of cases ANM-003.423/1940, ANM-004.162/1942, ANM-001.821/1965, ANM-818.906/1970 and ANM-803.284/1971.

- Mata do Ribeirão Mine located on Highway BR-265, in the rural area of the municipality of Barroso, in the state of Minas Gerais, about 10km from the plant. The following 6 Mining Rights make up the reserves and resources of this mine: ANM-000.410/1945 and ANM-005.670/1954, ANM-008.021/1960, ANM-800.568/1975, ANM-800.569/1975 and ANM-851.747/1975. Note: On December 18, 1975, the approval of Mining Group nº 30/1975 was published in the DOU, consisting of processes ANM-000.410/1945, ANM-005.670/1954 and ANM-851.747/1975.

<u>Description of the Mining Activity</u>

Capoeira Grande and Mata do Ribeirão mines, operate limestone production models in a similar way, with their advances conducted on slopes and berms connected by access ramps, the mining method is mechanized with rock blasting using explosives. The processing of two mines consists of a primary crusher in each mine and unified limestone pile crushing and secondary crushing facility which is equipped with cone crushers and classifying screens. There is also a waste dump in each mine.

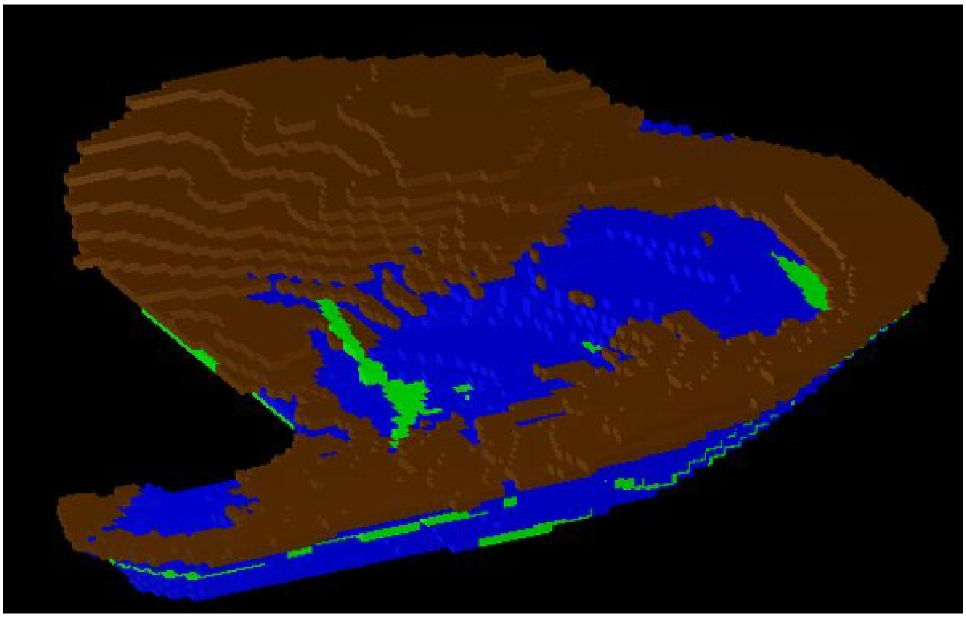


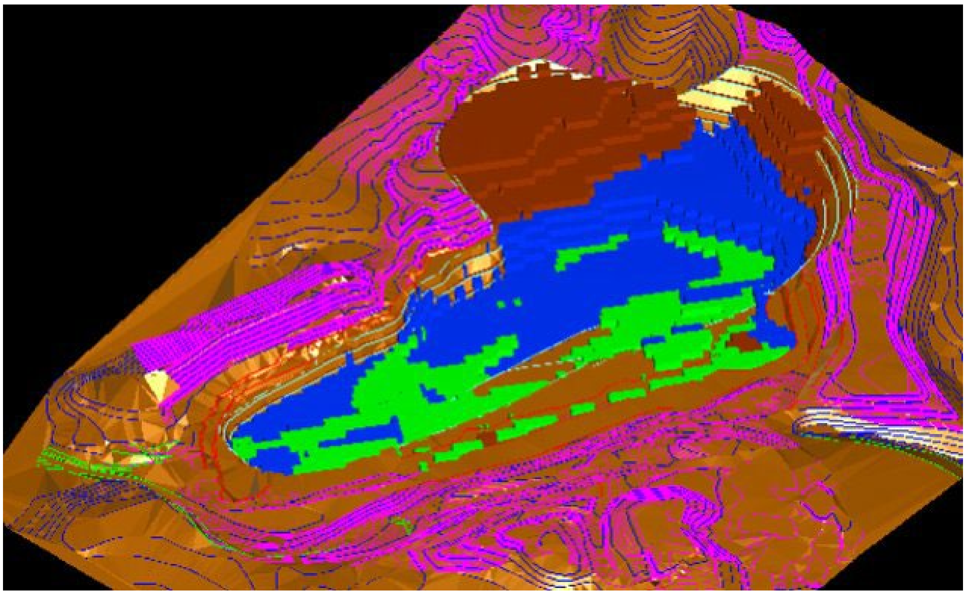


Resources, Mineral Reserves and Mine Life

Through the Final Research Reports filed with the ANM, measured and indicated resources and proven limestone reserves were identified. These volumes are presented in the figure below, broken down by mine, taking into account both the values cubed in the research work already carried out, and the technical evaluations for the determination of proved reserves. The consolidated useful lives of reserves and resources + reserves are also reported.

Barroso Plant		Limestone M(t)
Capoeira Grande	Proven Reserve	14,3
	Resource Measured + Indicated	16,3
	Total (Reserve + Resource)	30,6
Mata do Ribeirão	Proven Reserve	85,4
	Resource Measured + Indicated	8,1
	Total (Reserve + Resource)	93,5
	Mine Life (years) - Reserve	61,7
	Mine Life (years) - Reserve + Resource	154,2





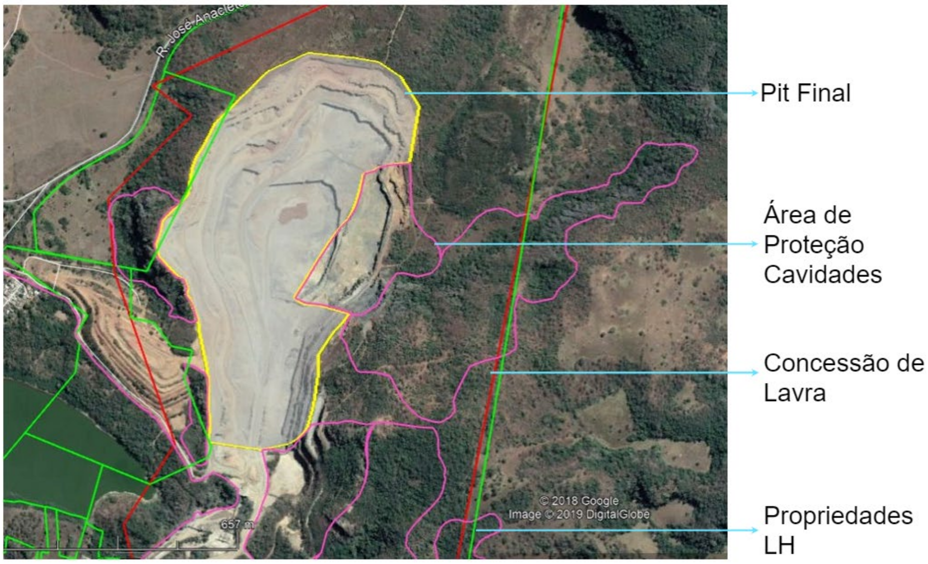
Pedro Leopoldo/MG Plant

Mining Complex of Pedro Leopoldo Plant

The mining complex is formed by the Campinho Farm Mine and its southern expansion (Campinho Sul) All limestone supply to the plant is carried out by this mine. Access to the mine area is via Avenida Camilo Alves Silva and Rua Espírito Santo to Avenida Carlos Bernadino Pereira (Avenida da Correia). The 3 Mining Rights that make up the mine are: ANM-931.775/2011, ANM-001.273/1964 and ANM-801.702/1978. Note: In 2011, the Mining Grouping of the 3 ANM processes was required, resulting in process ANM-931.775/2011. The Request for Mining Grouping is still pending analysis.

Description of the Mining Activity

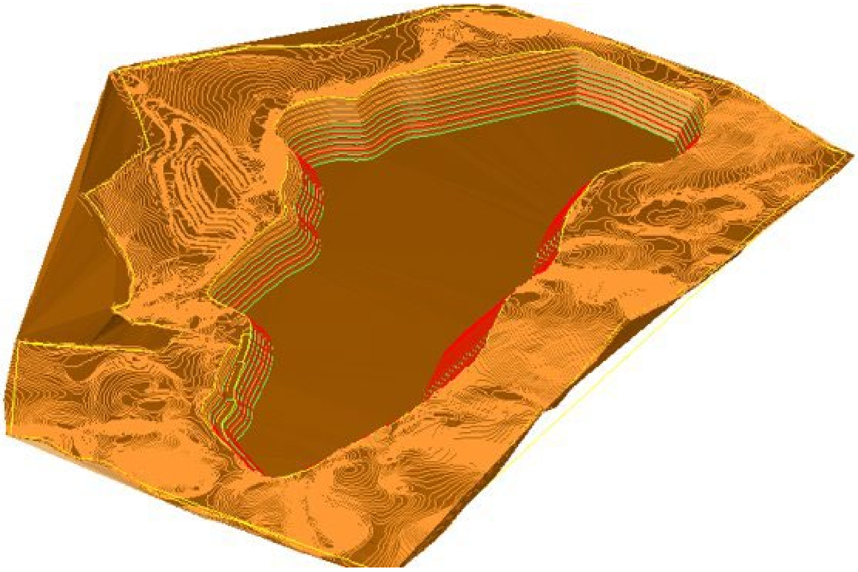
The mining enterprise of Pedro Leopoldo Plant has its resources partially cubed on its own property and reserves 100% on its own. The extraction operation began in the 1960s, supplying crushed limestone to the cement plant. Currently, the entire operation, as well as the mining rights, are managed by CSN Cimentos Brasil S.A. It should be noted that the limestone substance mined at the Campinho Farm Mine has physical and chemical characteristics suitable for use as raw material for the manufacture of cement. The mine is operated on the model of advances conducted on slopes and berms connected by access ramps, the mining method is mechanized with rock blasting using explosives. The mine processing consists of a primary impact crusher, whose product is sent to the plant by a long distance conveyor belt to be stacked in a pre-homogenization pile in the plant area. Adjacent to the mine pit there is an overburden pile for depositing the removed overburden.

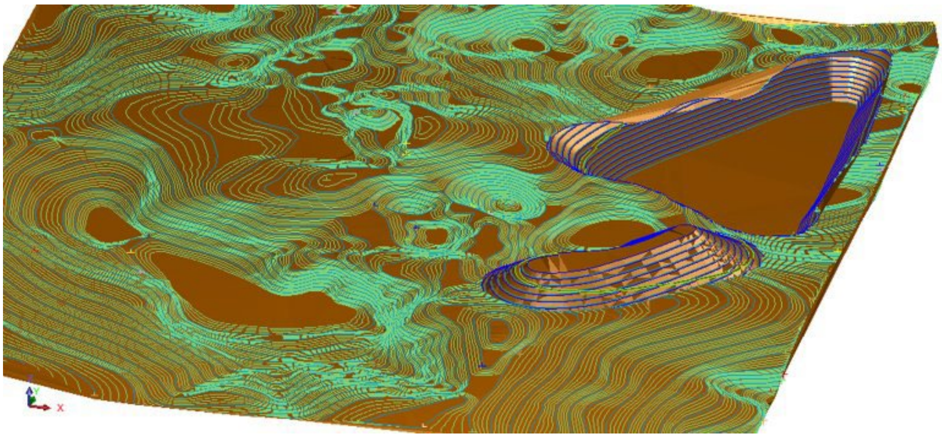


Resources, Mineral Reserves and Mine Life

Through the Final Research Reports, filed under the processes ANM 001.273/1964 and ANM 801.702/1978, the measured, indicated and inferred resources of limestone existing in the deposit were cubed. The proven reserves were determined by observing a high geological knowledge as well as domain of environmental licenses and use of the property. These volumes are shown in the figure below. The consolidated useful lives of reserves and resources + reserves are also reported.

Pedro Leopoldo Plant		Limestone M(t)
Capoeira Grande	Proven Reserve	47,7
	Resource Measured + Indicated	5,6
	Total (Reserve + Resource)	53,3
Mata do Ribeirão	Proven Reserve	-
	Resource Measured + Indicated	40
	Total (Reserve + Resource)	40
	Mine Life (years) - Reserve	18,7
	Mine Life (years) - Reserve + Resource	36,6



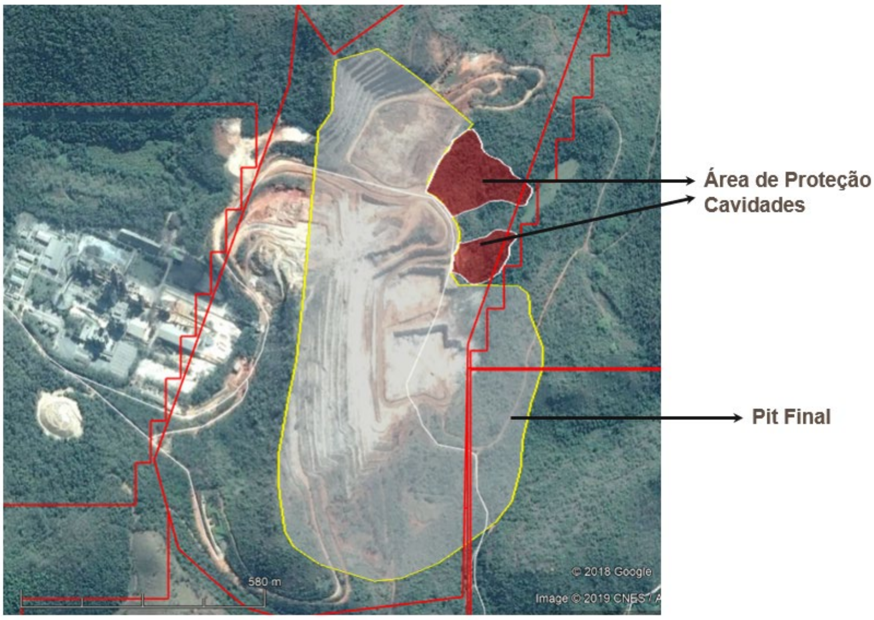


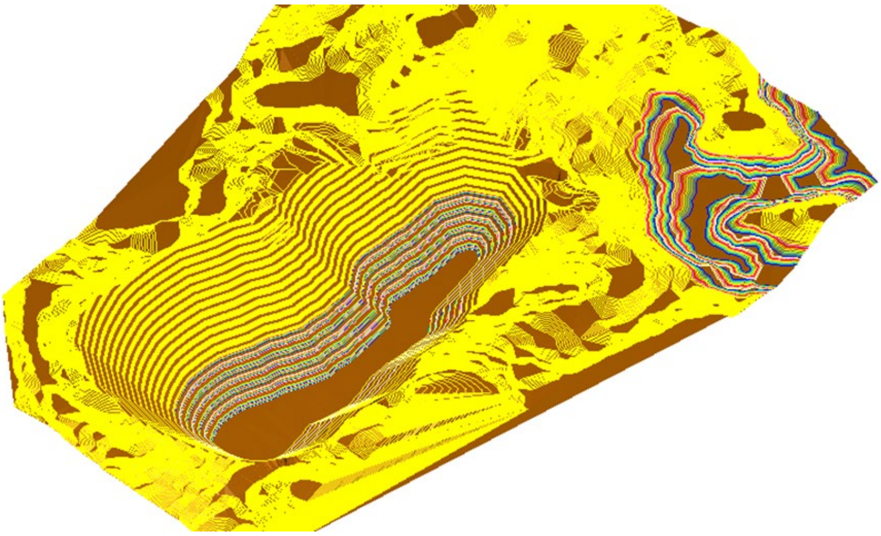
Cantagalo Plant

The mining complex of Cantagalo is formed by a mine in operation called Mina da Saudade and is located adjacent to the plant area of the factory, which is located on Highway RJ-166, km 8, in the municipality of Cantagalo, state of Rio de Janeiro. Access to the mine is via internal access to the plant. This mine comprises the following four Mining Rights: ANM-004.331/1960, ANM-006.665/1965, ANM-805.436/1968 and ANM-806.415/1972. Note: On December 30, 1997, the inclusion of areas of Mining Concessions under processes ANM-004.331/1960 and ANM-806.415/1972 was requested. The proven reserves and resources have their environmental licenses in order and are under their own property.

Description of the Mining Activity

The mining operation at the Cantagalo Plant supplies the limestone substance for the manufacture of cement and offers grades and physical-chemical characteristics suited to the needs of the plant. The mine is operated on the model of advances conducted on slopes and berms connected by access ramps, the mining method is mechanized with rock blasting by explosives, the mine processing consists of a primary gyratory crusher, a secondary crushing with a cone crusher in a closed circuit with classifying sieves and a conveyor belt system that sends the crushed limestone to the pre-homogenization pile. The mine does not operate with a sterile overburden removal pile.

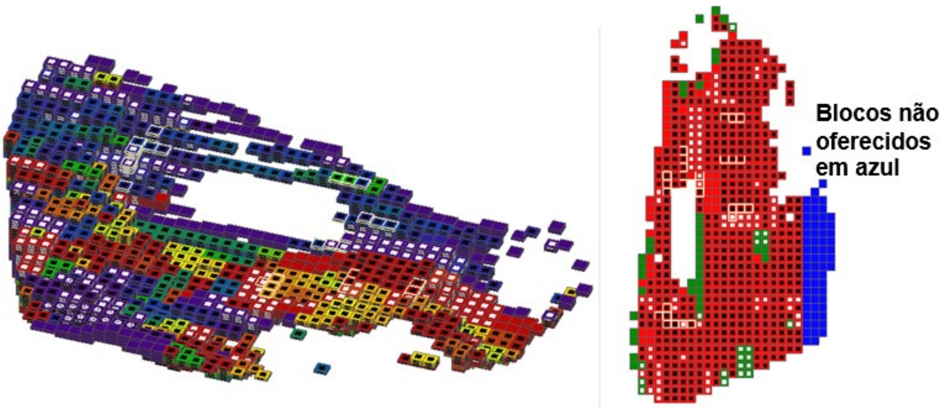




Resources, Mineral Reserves and Mine Life

Through the Annual Mining Report, filed under the processes ANM 004.331/1960, ANM 006.665/1965, ANM 805.436/1968 and ANM 806.415/1972, the existing limestone resources in the deposit were cubed. Therefore, the table below presents the measured and indicated resources and the mineable limestone reserves, taking into account both the values cubed in the research work already carried out, as well as the knowledge acquired with the production over the last few years and the technical evaluations for the determination of proved reserves. The consolidated useful lives of reserves and resource + reserves are also reported.

Cantagalo		Limestone M(t)
Saudade	Proven Reserve	33,2
	Resource Measured + Indicated	7,5
	Total (Reserve + Resource)	40,7
	Mine Life (years) - Reserve	27,1
	Mine Life (years) - Reserve + Resource	33,4

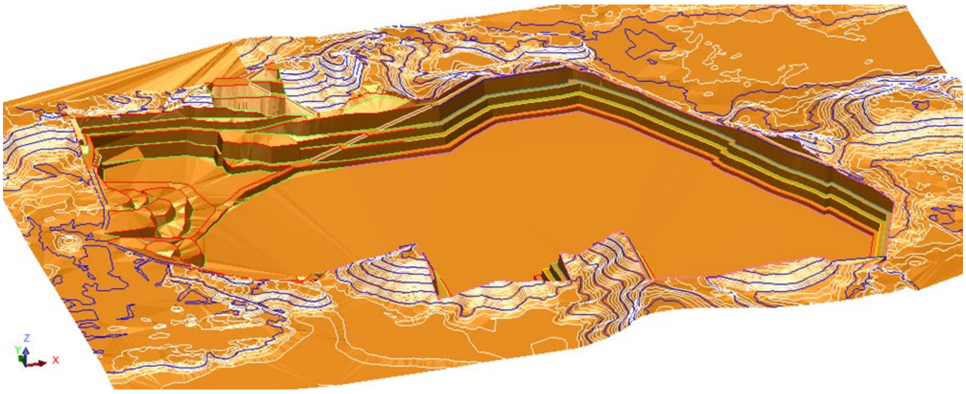


Caaporã Plant

The mining complex at Caaporã Plant of CSN Cimentos Brasil S.A. it is located in an area adjacent to the plant area of the factory. Access to the mine is via roadways from the plant. This mine comprises the following 3 Mining Rights: ANM-805.923/1974, ANM-840.263/1982 and ANM-840.120/1983. Proved reserves are owned by CSN and their environmental licenses have been regularized. Mine resources are partially owned by CSN.

<u>Description of the Mining Activity</u>

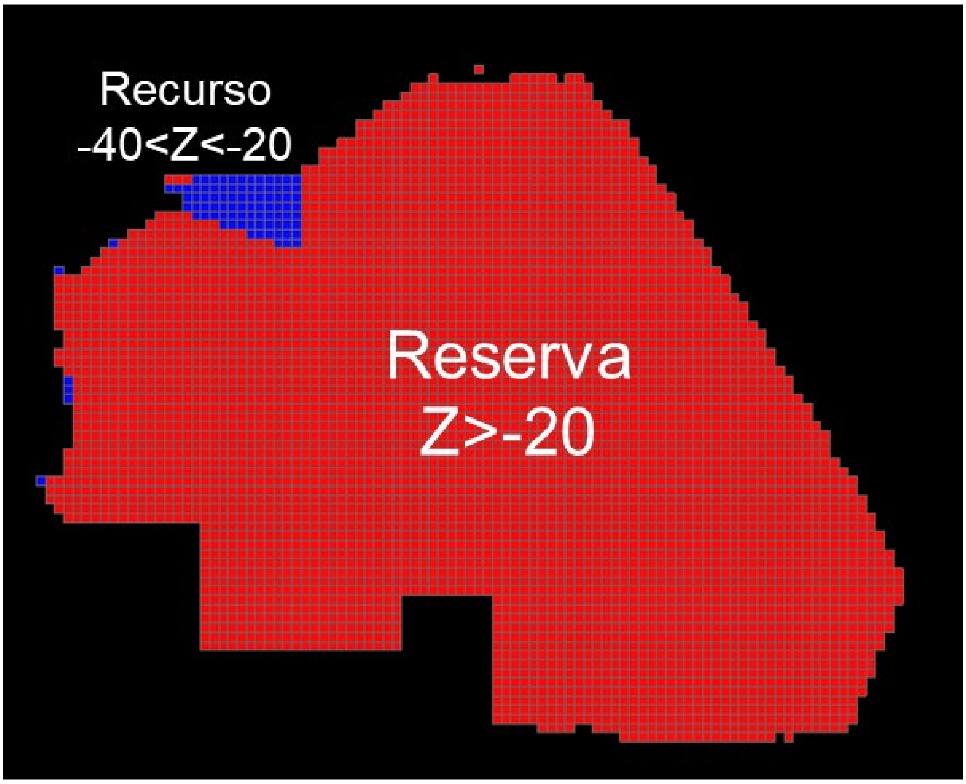
The mining activities in the mining project located in the areas of the traverses of the processes ANM 805.923/1974, ANM 840.263/1982 and ANM 840.120/1983 were started in the late 1980s by the former owner Cimento Poty S.A. From 2007 onwards, the undertaking began to be operated by Votorantim Cimentos N/NE S.A., and only from 2010 onwards did the Lafarge Group take over the operations. It should be noted that the limestone mined at the Caaporã Unit has physical and chemical characteristics suitable for the manufacture of cement.



<u>Resources, Mineral Reserves and Mine Life</u>

Through the Final Research Reports, filed under the processes ANM 805.923/1974, ANM 840.263/1982 and ANM 840.120/1983, the limestone mineral resources existing in the deposit were cubed. Therefore, the table below presents the remaining limestone mineral resources, taking into account both the values calculated in the research work already carried out, and the annual production of Mina Miramar over the last few years. These volumes are presented in the figure below, broken down by mine, taking into account both the values cubed in the research work already carried out, and the technical evaluations for the determination of proved reserves. The consolidated useful lives of reserves and resource + reserves are also reported.

Caaporã Plant		Limestone M(t)
Miramar	Proven Reserve	96,1
	Resource Measured + Indicated	16
	Total (Reserve + Resource)	112,1
	Mine Life (years) - Reserve	46,8
	Mine Life (years) - Reserve + Resource	54,7

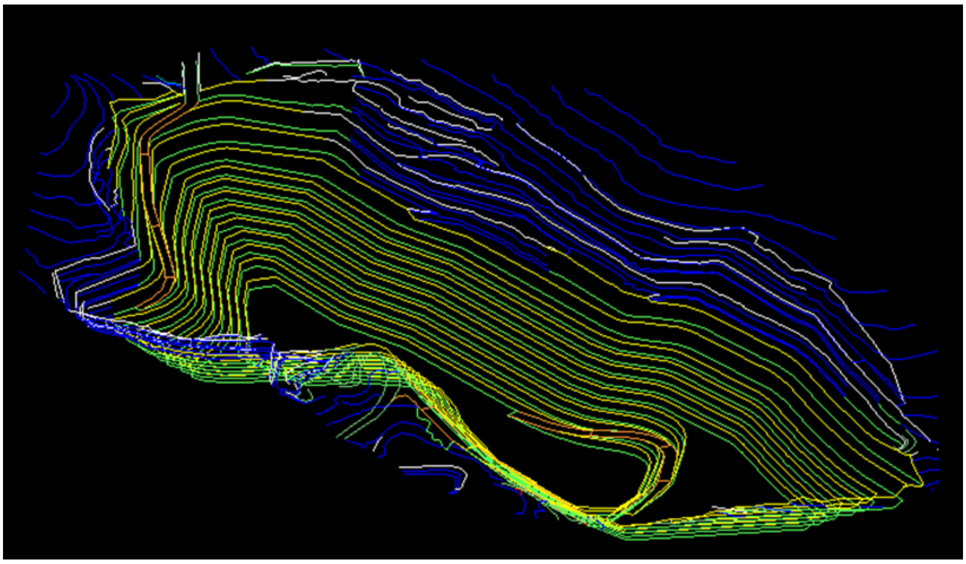


Montes Claros Plant

The Montes Claros mining complex owned by CSN Cimentos Brasil S.A. it is located in an area adjacent to the plant area of the factory. All cubed resources and reserves are CSN's property and their environmental licenses have been regularized. Access to the areas is via internal roads in the plant. The undertaking target of this study corresponds to the mining grouping nº 930.063/1998, process started on 05/12/1998 The Grouping is composed of 8 Mining Rights, namely: ANM-007.914/1964; ANM-831.062/1986; ANM-831.130/1982; ANM-831.304/1980; ANM-831.305/1980; ANM-831.306/1980; ANM-831,416/1983; ANM-816.483/1969.

Description of the Mining Activity

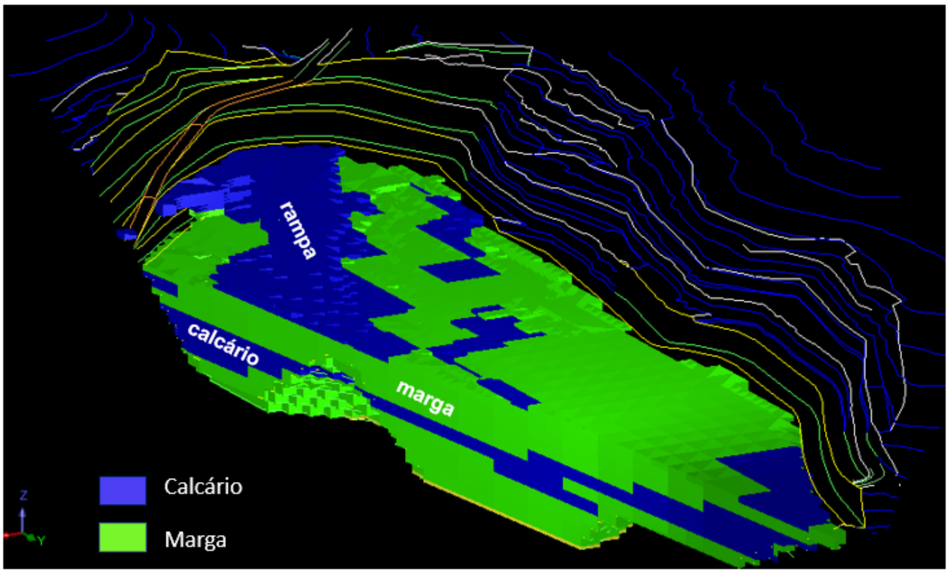
The undertaking developed in this mining group comprises a limestone pit from the Boa Vista mine and a limestone pit from the Expansão Boa Vista mine. As part of the infrastructure there is a limestone processing unit composed of a hammer crusher that supplies limestone in the granulometry necessary for the production of flour for the clinker, maintenance workshops, administrative buildings and logistical support structures have the following structures: workshop, equipment washer, warehouse, office, cafeteria and entrances. These units are licensed in the cement plant process, adjacent to the mining areas.

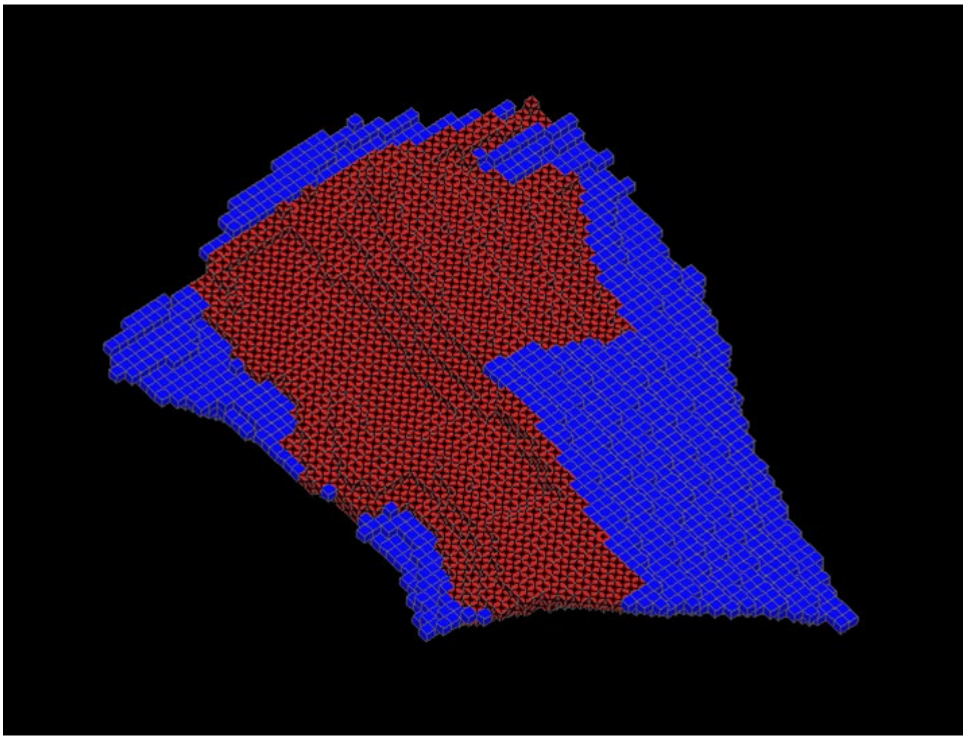


Resources, Mineral Reserves and Mine Life

The volumes are presented in the figure below, broken down by mine, taking into account both the values cubed in the research work already carried out, and the technical evaluations for the determination of proved reserves. The consolidated useful lives of reserves and resource and the reserves are also reported.

Montes Claros Plant		Limestone M(t)
Boa Vista	Proven Reserve	22
	Resource Measured + Indicated	-
	Total (Reserve + Resource)	22
Expansão Boa Vista	Proven Reserve	25,2
	Resource Measured + Indicated	12,7
	Total (Reserve + Resource)	37,9
	Mine Life (years) - Reserve	44,5
	Mine Life (years) - Reserve + Resource	56,5





Mineral Resource and Mineral Reserve Estimation Internal Controls

We are committed to applying best practices in our mineral resource and mineral reserve estimations. Our team responsible for these estimations works with global institutions, organizations and universities to maintain updated estimation processes and to document and apply these processes. Our internal controls for mineral resource and mineral reserve estimation include the following:

- Updated operational procedures for routine activities, which include:
  - geological mapping;
  - coordination of checks on drillhole collars;
  - downhole survey protocols;
  - core shed activities; and

- database management system containing collar, survey and assay files;

- Drilling with appropriate and satisfactory methods for geological logging, structural measurements and metallurgical testing by use of diamond drill core;
- Logging performed onsite using in-house geologists; and
- Sampling performed on all drill core and supervised or directly performed by in-house geologists.

In terms of quality control and quality assurance practices, we regularly inspect analytical and sample preparation laboratories and we use five certified reference materials, blanks and laboratories duplicates, which are all inserted at appropriate frequencies to the primary and secondary laboratories. In addition, we regularly check specific gravity determinations using the water immersion method or the "sand bottle" method.

We interpret our geological model using domains classified into a series of lithology codes based on a combination of grain particles (lump and fines) and chemical thresholds used directly by our mine planning and beneficiation departments.

With respect to our mineral reserve estimation, we verify the following factors that may affect our estimates and we constantly update and refine our estimates based on these factors:

- Structural factors
  - Input parameters of mineral resources;
  - Pit designs and pushbacks;
  - Geotechnical models;
  - Hydrogeological factors;
  - Land surface properties;
  - Mineral rights licenses;
  - Environmental licenses;
  - Water usage rights;
  - Regulatory licenses and authorizations to operate;
  - Physical constraints, such as:
    - Geological model boundaries;
    - Third-party areas;
    - Cultural protected sites;
    - Protected reserves; and
    - Processing plants and facilities.
- Mine Operation Factors
  - Mining recovery assumptions;
  - Production rate assumptions;
  - Load and haul fleet adopted; and
  - Dilution and mining recovery assumptions.
- Plant Operation Factors
  - Mass recovery that directly affects the volume produced of concentrates with their respective qualities;
  - Mineral process changes and plant modifications that have an impact on plant performance and product quality; and
  - Potential upgrades in mineral characterization that could modify the performance of processing plants.

- Other Factors
  - Product price changes over the years;
  - Royalties and costs associated with mining, processing, overhead and logistics; and
  - Taxes and exchange rate considerations.

We base our mineral resource and mineral reserve estimates information currently available to us, and these estimates may not represent actual production volumes in the future. We can provide no assurance that our estimates will not change or that we will be able to extract and convert all of our resources and reserves into production volumes. For more information, see “Item 3. Key Information—3D. Risk Factors—Risks Relating to Us and the Industries in Which We Operate—Our mineral reserves and mine life may prove inaccurate, market price fluctuations and cost changes may render certain ore reserves uneconomical to mine and we may face rising extraction costs or investment requirements over time as our reserves deplete.”

Production Process

Casa de Pedra Plant

Casa de Pedra facilities are located in the city of Congonhas, in the state of Minas Gerais. Casa de Pedra mine is located 350 km from the Presidente Vargas Steelworks and supplies iron ore products to our steel mill, as well as for export through the Itaguaí Port. Casa de Pedra’s equipment fleet and treatment facilities have an installed annual run of mine capacity of approximately 120 million tons and 40 million tons, respectively.

Pires and Fernandinho Beneficiation Plants

Pires plants are dry beneficiation plants that receive material from Engenho mine and Casa de Pedra mine and generate final products, such as lump ore and sinter feed.

The Fernandinho beneficiation plant receives material from stockpiled tailings piles, located in the city of Rio Acima, state of Minas Gerais, and generates sinter feed and fines as final products.

The following table sets forth the production volume of iron ore in each of our mines in the last three years:

	Production[(1)]		
	2020	**2021**	**2022**
Casa de Pedra[(2)] (Mt)	16.36	18.11	16.09
Grade[(3)] (%)	61.9%	61.6%	61.4%
Pires[(2)] (Mt)	5.36	9.20	7.41
Grade (%)	56.9%	57.4%	58.0%
Fernandinho[(2)] (Mt)	0.68	0.87	0.57
Grade (%)	64.9%	64.4%	64.7%

(1) In addition to its own production, CSN Mineração also purchased iron ore from third parties. Third-party purchase volumes were 8.6 million tons, 8.8 million tons and 9.4 million tons in 2020, 2021 and 2022, respectively.
(2) Production information considers 100% of the mines.
(3) Grade is the proportion of metal or mineral present in ore or any other host material.

The following table sets forth our consolidated sales in the periods presented:

	2020	**2021**	**2022**
Consolidated sales (Mt)	26.94	28.32	29.19

Expanding our Mining Capacity

We believe that the next few years will be transformational for our mining subsidiary CSN Mineração, as we have projects at an advanced stage of development with a robust investment plan to finance and accelerate iron ore production. CSN Mineração’s current business plan contemplates an expansion in annual production capacity from 34 million tons in 2022 to 108 million tons per year in 2033, assuming it is able to complete all of its planned expansion projects (not including ore purchases from third parties, but only proprietary production).

CSN Mineração has four projects under development that will be carried out gradually until 2033:

(i) Central Plant Expansion Projects *(Fine Tailings Central Plant and Expansion of Central Plant)*: licensed brownfield expansions to accelerate the production of pellet feed at low operating costs; increase by 6.5 million tons per year, with an estimated investment of R$1.2 billion through 2023.

(ii) Dams Tailings Recovery Projects *(Pires and Casa de Pedra Tailings Processing Plants)*: licensed brownfield expansions to generate value by recovering 180 million tons of tailings stored in dams as part of our dam de-characterization program; increase of 8.0 million tons per year, with an estimated investment of R$1.1 billion through 2025.

(iii) Itabirito Projects *(Itabirito P15, Plant P4, Itabirito P28 Mascate, Conversion of the Central Plant and Itabirito P28 Esmeril)*: mix of brownfield expansions (P15, already with an implementation license issued, quotes of equipment in progress and start of implementation scheduled for 2021) and greenfield projects, all with known technology and competitive investment per ton for the production of premium pellet feed with low impurities and high iron content (including direct reduction pellet feed); increase of 103 million tons per year, with an estimated investment of R$22.7 billion by 2032.

(iv) TECAR Expansion Projects*:* brownfield investments (the 60 million tons per year phase has already been licensed) to support mining expansions in already existing areas; capacity increase in three phases (60, 84 and 130 million tons per year), with an estimated investment of R$6.3 billion through 2030.

Iron Ore Production Capacity

CSN Mineração's recent track record includes implementation of projects with an accelerated timetable and high returns, all "on-time, on-budget and on-quality," which shows its expertise in the development and implementation of capital projects. An example of this are (i) transformation of the tailings generated from its central plant production process into a high-quality product (66% of average iron content) by means of CMAI I and II magnetic concentrators (representing a total investment of R$134 million in 2017 and 2018), (ii) central plant expansion project under execution, which includes the projects of CMAI III, recrushing and spirals (expected to be concluded in May 2021, with estimated investments of R$317 million), and (iii) pioneering initiative to implement tailings filtering plants, the largest in the world, with stages completed in August 2018 and June 2019, representing a total investment of R$250 million and total filtering capacity of nine million tons per year, therefore enabling operations that are 100% independent of tailings dams.

CSN Mineração's focus on project execution is based on three pillars (i) sustainability: 100% of its projects are independent of tailings dams, (ii) low execution risk: all projects use technologies already consolidated in the market and dominated by us, and (iii) return: low investment per ton for the production of premium products at competitive costs (maintaining current levels of operating expenses).

Dams

As a pioneer in the use of technologies that result in the possibility of stacking the tailings generated in the ore production process, CSN Mineração's production is 100% independent of tailings dams. After significant investments in recent years to increase reliability, disposal and dry stacking, 100% of CSN Mineração's tailings go through a dry filtering process and are stacked in dedicated areas. This initiative led to expertise in this technology, enabling current production and sustainable growth without the use of tailings dams.

In addition to our focus on the quality of our products and competitive costs, the environmental impact of our operations is one of our priorities. We are a pioneer in Brazil in our commitment to eliminate the use of tailings dams from our operations. The full implementation of CSN Mineração's tailings filtering plant allowed it to achieve this independence in January 2020, filtering and dry stacking 100% of the tailings generated from its production process. The following table sets forth certain information on the dams we operate:

Name of the Dam/Dike	Company / Entrepreneur	Main Use	Substance	Height (m)	Capacity (m³)	Construction Method	Last Certification	Risk	Impact	Status
Casa de Pedra[1]	CSN Mineração	Containment of mining tailings	Iron ore	84.00	6,5374,575	Downstream	Sep/22	Low	High	Active
B4	CSN Mineração	Containment of mining tailings	Iron ore	65.00	13,001,821	Upstream	Sep/22	Low	High	Under de-characterization
B5	De-characterized and unregistered.									

Name of the Dam/Dike	Company / Entrepreneur	Main Use	Substance	Height (m)	Capacity (m³)	Construction Method	Last Certification	Risk	Impact	Status
Dique Batateiro de Low	De-characterized and unregistered.									
Pilha da Vila II dike	De-characterized by ANM and under review by FEAM.									
Bichento IIIA dike	CSN Mineração	Containment of mining tailings	Gravel	19.38	116,696	Single stage	Sep/22	Low	Low	Active
Esmeril IV dike	CSN Mineração	Containment of mining tailings	Gravel	41.44	282,079	Single stage	Sep/22	Low	High	Active
Lagarto dam	CSN Mineração	Containment of mining tailings	Gravel	14.20	210,000	Single stage	Sep/22	Low	High	Active
Poço Fundo dam	De-characterized and unregistered.									
Vigia auxiliary dam	De-characterized and unregistered.									
B2 dam	Minérios Nacional	Containment of mining tailings	Iron ore	40.00	2,616,466	Upstream	Sep/22	Low	High	Inactive
B2 auxiliary dam(2)	Minérios Nacional	Containment of mining tailings	Iron ore	33.00	6,439,465	Upstream	Sep/22	Low	High	Inactive
Engenho dike	CSN Mineração	Containment of mining tailings	Gravel	12.40	8,821	Single stage	Sep/22	Low	Medium	Active
Vigia dam	CSN Mineração	Containment of mining tailings	Iron ore	28.00	812,901	Upstream	Sep/22	Low	High	Under de-characterization
Ecológica 1 Dam	Minérios Nacional	Containment of mining tailings	Gravel	18.50	41,000	Downstream	Sep/22	Low	High	Active
Ecológica 2 Dam	De-characterized and unregistered.									
B1 - Água Preta	De-characterized and unregistered.									
B2 - Água Preta	De-characterized and unregistered.									
B2 dam	CSN Cimentos	Water storage and catchment	Dolomite	11.00	240,000	Center line	Sep/22	Low	High	Inactive
B3 dam	CSN Cimentos	Containment of limestone	Limestone	11.00	900,000	Single stage	Sep/22	Low	High	Inactive
PIT-01	De-characterized and unregistered.									
Taboquinha 01 - Crente	Estanho de Rondônia	Containment of mining tailings	Deposit of tin	18.00	2,941,251	Upstream	Sep/22	Low	Medium	Under de-characterization
Taboquinha 02 - Serra Azul	Estanho de Rondônia	Containment of mining tailings	Deposit of tin	19.00	1,983,201	Upstream	Sep/22	Low	Medium	Under de-characterization
Taboquinha 03	Estanho de Rondônia	Containment of mining tailings	Deposit of tin	16.00	1,708,100	Single stage	Sep/22	Medium	Medium	Under de-characterization
Taboquinha 04	Estanho de Rondônia	Containment of mining tailings	Deposit of tin	16.00	2,253,100	Single stage	Sep/22	Medium	Medium	Under de-characterization
Igarapava	Aliança Geração de Energia S.A.	Hydroelectric	Water	49.90	241,840,000	Soil – concrete face rockfill	Sep/22	Low	High	Active
Itá (dam)	Engie Brasil	Hydroelectric	Water	125.00	5,100,000,000	Concrete face rockfill	Feb/22	Low	High	Active
Itá (dike 1)	Engie Brasil	Hydroelectric	Water	22.00		Compressed soil, upstream protection with riprap rock and downstream protection with grass	Feb/22	Low	High	
Itá (dike 2)	Engie Brasil	Hydroelectric	Water	22.00		Compressed soil, upstream protection with riprap rock and downstream protection with grass	Feb/22	Low	High	
Itá (dike 3)(3)	Engie Brasil	Hydroelectric	Water	29.00		Compressed soil, upstream protection with riprap rock and downstream protection with grass	Feb/22	Low	High	
Blang	CEEE-G	Hydroelectric	Water	20.70	50,000,000	Cyclopean concrete	Dec/22	Low	High	Active
Canastra	CEEE-G	Hydroelectric	Water	25.40	242,000	Reinforced concrete	Dec/22	Low	High	Active
Capigui I (Regularização)	CEEE-G	Hydroelectric	Water	20.50	42,058,000	Conventional concrete	Dec/22	Low	High	Active
Capigui II (Auxiliar)	CEEE-G	Hydroelectric	Water	6.10	10,000	Wooden Buttress	Dec/22	Low	Medium	Active
Capigui III (Captação)	CEEE-G	Hydroelectric	Water	5.20	30,000	Conventional concrete	Dec/22	Medium	Low	Active
Divisa	CEEE-G	Hydroelectric	Water	27.50	16,240,000	Conventional concrete	Dec/22	Low	High	Active
Ernestina	CEEE-G	Hydroelectric	Water	22.69	258,350,000	Rockfill	Dec/22	Low	High	Active
Ernestina 1 Dike	CEEE-G	Hydroelectric	Water	5.00	-	Homogeneous embankment	Dec/22	Low	High	Active

Name of the Dam/Dike	Company / Entrepreneur	Main Use	Substance	Height (m)	Capacity (m³)	Construction Method	Last Certification	Risk	Impact	Status
Ernestina 2 Dike	CEEE-G	Hydroelectric	Water	5.00	-	Homogeneous embankment	Dec/22	Low	High	Active
Forquilha	CEEE-G	Hydroelectric	Water	6.50	48,000	Stone masonry	Dec/22	Low	Low	Active
Guarita	CEEE-G	Hydroelectric	Water	8.75	60,000	Cyclopean concrete	Dec/22	Low	Low	Active
Herval	CEEE-G	Hydroelectric	Water	11.85	153,000	Reinforced concrete	Dec/22	Low	Low	Active
Ijuizinho	CEEE-G	Hydroelectric	Water	6.90	56,000	Cyclopean concrete	Dec/22	Low	Low	Active
Itaúba	CEEE-G	Hydroelectric	Water	97.00	620,000,000	Earthfill	Dec/22	Low	High	Active
Itaúba - Vertedouro	CEEE-G	Hydroelectric	Water	28.10	-	Conventional concrete	Dec/22	Low	High	Active
Ivaí	CEEE-G	Hydroelectric	Water	7.10	38,000	Cyclopean concrete	Dec/22	Low	Low	Active
João Amado	CEEE-G	Hydroelectric	Water	11.50	10,600,000	Cyclopean concrete	Dec/22	Low	High	Active
João Amado - Left dike	CEEE-G	Hydroelectric	Water	4.50	-	Homogeneous embankment	Dec/22	Low	High	Active
Maia Filho	CEEE-G	Hydroelectric	Water	24.45	28,300,000	Conventional concrete	Dec/22	Low	High	Active
Passo do Inferno	CEEE-G	Hydroelectric	Water	8.00	200,000	Stone masonry	Dec/22	Low	Low	Active
Passo Real	CEEE-G	Hydroelectric	Water	58.00	3,645,000,000	Earthfill	Dec/22	Low	High	Active
Salto	CEEE-G	Hydroelectric	Water	10.00	13,970,000	Cyclopean concrete	Dec/22	Low	High	Active
Santa Rosa	CEEE-G	Hydroelectric	Water	7.20	65,000	Stone masonry	Dec/22	Low	Low	Active
Toca	CEEE-G	Hydroelectric	Water	4.50	10,000	Stone masonry	Dec/22	Low	Low	Active
Quebra Queixo	CEC	Hydroelectric	Water	70.00	136,630,000	Concrete face rockfill dam	Jul/22	Low	High	Active
Santa Ana	Santa Ana Energética S.A.	Hydroelectric	Water	3.35	3,000	Conventional concrete	Jan/22	Low	Low	Active
Sacre 2	Brasil Central Energia Ltda.	Hydroelectric	Water	N/A	No reserve	River diversion	Jan/22	N/A	N/A	Active
Barroso containment dike	CSN Cimentos Brasil S/A	Containment of mining tailings	Gravel	5.00	29,000,000	Rockfill		Low	Low	Active
PCH Macacos	CSN Cimentos Brasil S/A	River dam	Water	-	-	-	-	-	-	-

(1) The Casa de Pedra dam comprises B2, B3 and B6 underwater dams, flooded by its reservoir.
(2) In regard to B2 auxiliary dam, which stability was not assured and declared in the last report, dated March 2021, Minérios Nacional clarifies that it has been meeting the works schedule regarding the structure's stabilization, as determined by the designer and independent external audits, and has been carrying out the measures issued by the Minas Gerais State Prosecutor's Office, as confirmed by an expert report issued by the analyst of the Minas Gerais State Prosecutor's Office.
(3) The dam and dikes (1, 2 and 3) comprise the reservoir of Itá hydroelectric.

Since the accident in 2015 in the city of Mariana, in the state of Minas Gerais, involving the breaking of an upstream mining dam operated by another mining company, we changed our processes to reduce tailings deposits. In addition, following another accident involving the breaking of an upstream mining dam operated by another mining company in January 2019 in the city of Brumadinho, in the state of Minas Gerais, we have continued to execute our plan for the decommissioning or de-characterization of our six inactive tailings dams pursuant to a timeline that is, as of the date of this annual report, being developed by our ESG and engineering teams.

Since 2020, we no longer dispose tailings in our dams, using dry stacking to stock this material. Casa de Pedra dam is used only for water recirculation and we do not operate any active upstream tailings dams.

Distribution

Transportation costs are a significant component of our steel and iron ore production costs and are a factor in our price competitiveness in the export market. Railway is the main means of transport by which we convey raw materials from our mines to the Presidente Vargas Steelworks and steel and iron ore products to ports for shipment overseas. Iron ore, limestone and dolomite from our two mines located in the state of Minas Gerais are transported by railroad to the Presidente Vargas Steelworks for processing into steel. The distances from our mines to the Presidente Vargas Steelworks are 328 km and 455 km. The distances from our mines to the ports are 440 km and 160 km. Imported coal and coke bought from foreign suppliers are unloaded at the port of Itaguaí, 90 km west of the city of Rio de Janeiro, and shipped 109 km by train to the Presidente Vargas Steelworks. Our finished steel products are transported by train, truck and ships to our customers throughout

Brazil and abroad. Our most important local markets are the cities of São Paulo (335 km from the Presidente Vargas Steelworks), Rio de Janeiro (120 km) and Belo Horizonte (429 km).

Until recently, Brazil's railway system (including railcars and tracks) was principally government-owned and in need of repair, but it has now been largely privatized. In an attempt to increase the reliability of our rail transportation, we hold interests in companies that hold concessions for the main railway systems we use. For further information on our railway concessions, see "—Our Logistics Segment—Railways."

We export iron ore and import coal and coke through the Itaguaí Port, in the state of Rio de Janeiro. We have operated the coal and container terminals since August 1997 and 1998, respectively.

Our Cement Segment

Our cement segment comprises seven integrated cement plants, six grinding and mixing plants and 15 distribution centers throughout the Southeast, Northeast and Midwest of Brazil.

Production

Our cement production in the Southeast region of Brazil takes place in the states of Rio de Janeiro (Volta Redonda) and Minas Gerais (Arcos, Barroso, Pedro Leopoldo, Montes Claros and others) and begins with the influx of raw materials comprising clinker, limestone, gypsum and slag. Clinker is produced in our plant in Arcos, where limestone, clay and other correctives such as iron ore and bauxite are ground in a raw mill and calcined inside the kiln. Clinker and limestone are stored in silos and warehouses and come in part from Arcos to Volta Redonda by rail. Slag is a by-product of iron and steel, produced in the blast furnace and is stored in a warehouse, arriving at our cement plant by road. We use natural gypsum, which arrives at the plant by truck and is stored in a warehouse. Our cement production in the Northeast region of Brazil takes place in Alhandra in a similar clinker production process as in Arcos. All transportation of raw materials within the plant is carried out by conveyor belts, placing inputs in scales according to a predefined formula and delivering them to the mills. There are two grinding lines in each of our Volta Redonda, Arcos and Alhandra plants. The total annual capacity of our seven cement plants is 17 million tons. The cement grinding process in Volta Redonda and Arcos is by vertical mills. The mills have a hydraulic roller system, which uses pressure to grind the layer of material on the turntable. In Volta Redonda, hot gas, derived from the combustion of natural gas or petroleum coke, is used in the mills to dry materials. In Alhandra, the cement grinding process is by ball mills. The materials are ground to a fine powder, in rotating, cylindrical ball mills containing a charge of steel grinding balls.

We produce clinker in each of our seven integrated cement plants. The main raw materials for the production of clinker are limestone, clay and other correctives (iron ore, bauxite, etc.). These materials undergo grinding and are then dosed, forming the so-called "raw meal." After the homogenization of this raw meal, the mixture is taken to a kiln where it is heated to high temperatures. As a result of this procedure, we obtain clinker, which is the base material for our cement. We add gypsum and other ingredients to the clinker mix that are dosed and fed into the cement mills until we reach a granulometry suitable for the type of cement products.

In addition to our integrated plant mills, we have independent grinding stations in strategic locations that receive our clinker or clinker purchased in small volumes from third parties.

The portfolio of cement products we offer in bagged and bulk forms includes the following: (i) CP II (Composite Portland Cement), (ii) CPIII (Blast Furnace Portland Cement) and (iii) CP V ARI (High Initial Strength Portland Cement). We produce these different types of cement with the addition of different elements in the composition, as well as filler (calcium carbonate), slag and pozzolan.

Our Energy Segment

Our energy segment comprises our generation plants, which support reduction of our production costs and exposure to fluctuations or availability of certain energy sources and generate revenue though our commercialization of the energy surplus. Following is an overview of our energy segment related assets.

Thermoelectric Co-Generation Power Plant

We have a 245 MW thermoelectric co-generation power plant at the Presidente Vargas Steelworks. Aside from operational improvements, the power plant supplies our strip mills with electric energy, processed steam and forced air from the blast furnaces, benefiting the surrounding environment through the elimination of flares that burn steel-processing gases into the atmosphere. In addition, we have a turbine generator, which adds 22 MW to our installed capacity. This turbine is located near our blast furnace no. 3 and uses the outlet gases from the iron making process to generate energy. The total annual capacity of our thermoelectric co-generation power plant is 267 MW.

Itá Hydroelectric Facility

We hold a 29.50% equity interest in the Itá hydroelectric facility, as we and Engie Brasil each own 48.75% of ITASA, a special-purpose company formed to own and operate, under a 30-year concession granted in 2000, 60.5% of the Itá hydroelectric facility on the Uruguay River in Southern Brazil. Itambé owns the remaining 2.5% of ITASA. Engie Brasil directly owns the remaining 39.5% of the Itá hydroelectric facility, which has an installed capacity of 1,450 MW.

Igarapava Hydroelectric Facility

We own 17.92% of a consortium that built and has the right to operate for 30 years, until September 2031, the Igarapava hydroelectric facility. Other consortium members are Aliança, L.D.R.S.P.E. Geracão de Energia e Participações Ltda. and AngloGold. The facility has an installed capacity of 210 MW.

Santa Ana Hydroelectric Facility

CSN Cimentos and our energy subsidiary CSN Energia own 100% of Santa Ana Energética S.A., which holds the concession for the hydroelectric power plant of Santa Ana that has an installed capacity of 6.5 MW.

Sacre II Hydroelectric Facility

CSN Cimentos and our energy subsidiary CSN Energia own 100% of Topázio Energética S.A., which holds, through its subsidiary Brasil Central Energia Ltda., the concession for the hydroelectric power plant of Sacre II that has an installed capacity of 30 MW.

Quebra-Queixo Hydroelectric Facility

CSN Mineração and our energy subsidiary CSN Energia own 100% of CEC, which holds the concession for the hydroelectric power plant Quebra-Queixo that has an installed capacity of 120MW.

CEEE-G

CFB owns 98.96% of CEEE-G, which holds several concessions for hydroelectric power plants and greenfield wind power plant projects that represent, in the aggregate, an installed capacity of 1,275 MW.

Our Logistics Segment

Our logistics segment comprises railway and port facilities.

Railways

Southeastern Railway System

MRS has a 30-year concession to operate, through 2026 and renewable for an additional period of 30 years, Brazil's Southeastern railway system. As of December 31, 2022, we held 37.27% (18.64% directly and 18.63% through CSN Mineração) of MRS's total capital. For more information, see "Item 5. Operating and Financial Review and Prospects—5B. Liquidity and Capital Resources—Off-Balance Sheet Arrangements—"Take-or-Pay" Contractual Obligations." The Brazilian Southeastern railway system, with 1,643 km of track, serves the São Paulo – Rio de Janeiro – Belo Horizonte industrial triangle in Southeast Brazil, and links our mines located in the state of Minas Gerais to the ports located in the states of São Paulo and Rio de Janeiro and to the steel mills of CSN, Companhia Siderúrgica Paulista and Gerdau Açominas. In addition to serving other customers, the railway transports iron ore from our mines at Casa de Pedra in the state of Minas Gerais and coke and coal from Itaguaí Port in the state of Rio de Janeiro to the Presidente Vargas Steelworks and transports our exports to the ports of Itaguaí and Rio de Janeiro. The railway system connects the Presidente Vargas Steelworks to the container terminal at Itaguaí Port, which handles most of our steel exports.

Northeastern Railway System

We hold interest in companies that have concessions to operate the Northeastern railway system, which operates in the states of Maranhão, Piauí, Ceará and Pernambuco, and connects with the region's leading ports, offering an important competitive advantage through opportunities for intermodal transportation solutions and made-to-measure logistics projects.

In 1997, we were awarded a concession granting the exclusive right to operate cargo transportation at the railway that belonged to Rede Ferroviária Federal S.A., or RFFSA, which we currently call Northeastern Railway System I, effective January 1, 1998, and the preference to operate cargo railway transportation in any new tracks of the Northeastern Railway System that the Brazilian government elected to build.

In 2005, we executed a letter of intent with the Brazilian government (the grantor of this concession) to enable the development of new tracks and certain other improvements of the Northeastern Railway System, in a project called "Nova Transnordestina." The Nova Transnordestina project discussions resulted in the execution, in 2013 and 2014, of a TAC that settled all claims of non-compliance by us with the original concession agreement until 2012, and multiple agreements, including an investment agreement (discussed below) and a new concession, pursuant to which we were granted the right to develop and operate new tracks and the Northeastern Railway System management was divided in two sub-railway systems:

- *Northeastern Railway System I*, which is in operation by our subsidiary FTL, encompasses the RFFSA network, covering the stretches between the cities of São Luís – Altos, Altos – Fortaleza, Fortaleza – Souza, Souza – Recife/Jorge Lins, Recife/Jorge Lins – Salgueiro, Jorge Lins – Propriá, Paula Cavalcanti – Cabedelo and Itabaiana – Macau, with 4,238 km of railways, of which 1,191 km are operational, and we are negotiating with the National Agency for Ground Transportation (*Agência Nacional de Transportes Terrestres*), or ANTT, to return the remainder. As of December 31, 2022, we held 92.71% of the capital stock of FTL and its concession extends until 2027, renewable for an additional 30 years. As of December 31, 2022, R$66.9 million in concession payments were outstanding over the remaining five years of the concession.
- *Northeastern Railway System II*, which is under construction by our jointly controlled investee TLSA, will encompass the new network, covering the stretches between the cities of Eliseu Martins – Trindade, Trindade – Salgueiro, Salgueiro – Porto Suape, Salgueiro – Missão Velha and Missão Velha – Porto de Pecém, with an expected extension of 1,753 km that will connect the interior of Northeast Brazil to Pecém and Suape Ports. As of December 31, 2022, we held 48.03% of the capital stock of TLSA and its concession extends until the earlier of 2057 or the date when TLSA recovers its invested equity at an annual rate of return of 6.75%.

In September 2013, we entered into an investment agreement, or the TLSA Investment Agreement, with Valec Engenharia, Construções e Ferrovias S.A., or Valec, and the Northeast National Development Fund (*Fundo Nacional de Desenvolvimento do Nordeste*), or FDNE, two Brazilian government entities focused on infrastructure and the development of the northeastern region and our partners in TLSA. Under the TLSA Investment Agreement, we and our partners agreed on a budget of R$7.5 billion to complete the construction of the Northeastern Railway System II. A revised budget of approximately R$13.2 billion is under review by the partners of TLSA and subject to revision of the TLSA Investment Agreement, which, as of the date of this annual report, has not been formalized.

The TLSA Investment Agreement also provides for indicative terms and conditions, including amounts, under which the Brazilian National Economic and Social Development Bank (*Banco Nacional de Desenvolvimento Econômico e Social*), or BNDES, agreed to provide long-term financing for the completion of Northeastern Railway System II. Although we have received indicative terms, the financing is subject to several conditions, including the satisfactory completion of internal and credit approval processes by lenders. If any of the conditions are not met, including final credit approval by the lenders in terms and costs reasonable to us, we may not be able to obtain the financing. The other long-term financing from FDNE and the Constitutional Financing Fund of the Northeast (*Fundo Constitucional de Financiamento do Nordeste*), or FNE, has already been received by TLSA.

In 2016, the Federal Court of Accounts (Tribunal de Contas da União), or TCU, initiated a proceeding questioning the legality of certain aspects of the concession contract for the Northeastern Railway System II, which has contributed to a slow pace of construction of the new tracks, and the ANTT has initiated a proceeding claiming TLSA did not comply with the terms of the concession contract for the Northeastern Railway System I.

Valec's non-compliance with material obligations under the TLSA Investment Agreement has also contributed to a slow pace of construction of the new tracks and caused revision of the budget.

In the end of 2019, ANTT recommended the expiry of the concession contract for the Northeastern Railway System I, and, in first half of 2020, ANTT recommended the expiry of the concession contract for the Northeastern Railway System II. Both decisions were subject of requests to amend the decision by the concessionaires and, as of the date of this annual report, we await a final decision by ANTT.

ANTT's decisions do not take immediate effect and will only take effect once they have been considered and decreed by the President of Brazil, as well as decided in all final instances. For more information, see "Item 8. Financial Information—8A. Consolidated Statements and Other Financial Information—Legal and Administrative Proceedings—Northeastern Railway System Proceedings."

In December 2022, we entered into an amendment to the concession agreement of TLSA, pursuant to which, among other things, there was a change to the railroads granted to TLSA and we agreed to certain mandatory investments and to the conditions for the return of the Salgueiro – Porto de Suape's grid. This amendment represents an important step in the evolution of TLSA's operations, which will support our operations and the transportation of our products across the Northeast region of Brazil.

Port Facilities

Solid Bulks Terminal

We operate an integrated and modern logistics structure. Part of this structure includes the operation of TECAR through a concession renewed in 2015 and expiring in 2047.

TECAR is connected to road and rail systems across Southeast Brazil and is one of the four port terminals that make up the Port of Itaguaí facilities. With a strategic location and a total area of 740,761 m², the terminal consists of a concrete molded berthing pier superposed on jacketed stilts connected to the mainland by an access bridge perpendicular to the berthing pier. Its backyard includes conveyor belts, an internal road system, bulk storage yards and a railway looping, as well as industrial and administrative facilities.

Container Terminal

We indirectly own almost the entirety of TECON, which has a concession to operate the container terminal at Itaguaí Port for a 25-year term expiring in 2026, which is renewable for an additional 25 years. As of December 31, 2022, approximately R$143.1 million of the cost of the concession was outstanding and payable over the remaining four years of the concession.

The Itaguaí Port is located in Brazil's Southeast region, with all major exporting and importing areas in the states of São Paulo, Minas Gerais and Rio de Janeiro within 500 km. In 2020, this area represented 50% of the Brazilian GDP, according to the IBGE.

Favorable natural conditions, like natural deep waters and a low urbanization rate around the Port of Itaguaí, allow large vessels to operate and also allow for highly competitive prices for services rendered. After TECON's investments in infrastructure and equipment, which increased our capacity to 440,000 containers (660,000 TEUs) per year, new improvements were achieved from 2019 to 2021, which increased the terminal's service level and productivity, including maritime access and berths achieving certification for 15.4 meters in draft, including tides, which is the deepest in the East coast of South America, as well as the acquisition of new equipment. In 2022, we continued to invest in updating our operating facilities and complying with regulatory requirements. In addition, in 2022, we bought nine new rubber tyred gantries.

In 2023, we will begin operating nine new rubber tyred gantry cranes and we expect to acquire six new forklifts, improving our operational capacity. TECON will keep investing in the project expansion in order to increase its capacity by approximately 40%, which would make it one of the largest port terminals in Brazil, with a nominal capacity of 1,000,000 TEUs per year. This expansion project, which is under discussion with regulatory agencies, includes a quay extension of 273 meters, with a total resulting length of 1,083 meters, acquisition of two new gantry cranes (ship-to-shore) for larger container carriers, acquisition of additional yard civil works and equipment, and dredging of the access channel and maneuvering basin.

In 2022, TECON moved 62,000 containers, 1.3 million tons of steel products, 42,000 tons of general cargo and 918,000 tons of solid bulk, as compared to 120,000 containers, 705,000 tons of steel products, 110,000 tons of general cargo and 1,472,000 tons of solid bulk in 2021. The decrease in the container volume in 2022 is mainly due to the verticalization of port operations by container shipowners that concentrate their operations in proprietary terminals. In order to mitigate the effects of this decrease in container volume in 2022, TECON sought new markets and began operating wood shipments, as well as new steel cargo, and increasing the volume of other cargo also handled in 2021, including billets, wire rods, plates, tubes, transformers, locomotives and solid bulk, such as soda ash, gypsum and pellets.

Marketing, Organization and Strategy

Flat Steel

Our steel products are sold both domestically and abroad as a raw material for several manufacturing industries, including the automotive, home appliance, packaging, construction and steel processing industries.

Our sales approach involves establishing brand loyalty and achieving a reputation for quality products by developing relationships with our customers, focusing on their specific needs and providing tailor-made solutions.

Our commercial area is responsible for sales of all our products. This area is divided into two major teams, one focused on sales in international markets and the other on sales in the domestic market. The domestic market sales team covers seven market divisions: packaging, distribution network, automotive industry (automakers and auto parts), home appliances, general industry, construction and pipes. We also have a team responsible for selling all process residues, which include blast furnace slag, pitch and ammonia, which are widely used as inputs in chemical and cement industries.

The distribution network division is responsible for supplying large steel processors and distributors. In addition to independent distributors, we count with our own distributor, Prada Distribuição. The pipes division supplies oil and gas pipe manufacturers as well as industries that produce small diameter pipe and light profiles. The packaging division acts in an integrated way with suppliers, representatives of the canning industry and distributors to respond to customer needs for finished products. We supply the automotive division from a specialized mill, CSN Porto Real, and also by a portion of the galvanized material produced at Presidente Vargas Steelworks, thereby benefitting from a combined sales strategy.

Historically, our sales in international markets were primarily through international brokers. However, as part of our strategy to establish direct, longer-term relationships with end-users, we have decreased our reliance on these brokers and have instead focused on direct sales to more profitable international markets.

All of our sales are on an order basis and have an average delivery time of 45 days. As a result, our production levels closely reflect our order log book status. We forecast sales trends in both the domestic and international markets based on historical data and general economic outlooks. We have our own data systems to remain informed of worldwide and Brazilian market developments. Our management believes that a key to our success is maintaining our presence in international markets, which provide us flexibility to shift between domestic and international markets depending on how favorable conditions are.

Unlike other commodity products, steel is not traded on an exchange, nor is there uniform pricing, due to wide differences in size, quality and specifications. In general, we price exports based on international spot prices of steel at the time of sale in U.S. dollars or euros, depending on the destination. Sales are normally paid up front, or within 14 or 28 days, and, in the case of exports, usually backed by a letter of credit and an insurance policy. Sales are made primarily on cost and freight terms.

Sales by Geographic Region

In 2022, we sold steel products to customers in Brazil and in 18 other countries. The fluctuations in the portion of total sales assigned to domestic and international markets, which are presented in the table below, reflect our ability to adjust our sales in light of variations in the domestic and international markets, as well as domestic and international steel demand and prices.

The two main export markets for our products are Europe and North America, representing approximately 78% and 18%, respectively, of our export sales volume in 2022. The following table sets forth the geographic break-down of our steel product exports by destination:

Sales of All Steel Products by Destination

	2020				2021				2022			
	Tons	% of Total	Net Operating Revenues	% of Total	Tons	% of Total	Net Operating Revenues	% of Total	Tons	% of Total	Net Operating Revenues	% of Total
	(in thousands of tons and millions of R$)											
Brazil	3,204	69%	11,721	71%	3,176	69%	21,400	71%	3,075	70%	20,588	70%
Export	1,447	31%	4,882	29%	1,427	31%	8,691	29%	1,315	30%	8,753	30%
Total	**4,651**	**100%**	**16,603**	**100%**	**4,602**	**100%**	**30,091**	**100%**	**4,389**	**100%**	**29,341**	**100%**
Exports by Region												
North America(1)	221	15%	922	19%	285	20%	2,276	26%	241	18%	2,018	23%
Latin America	73	5%	328	7%	68	5%	356	4%	46	4%	382	4%
Europe	1,152	80%	3,627	74%	1,089	76%	6,060	70%	1,028	78%	6,352	73%
All others	1	0%	4	0%	0	0%	0	0%	0	0%	1	0%

(1) Sales to Mexico are included in North America.

Sales by Product

The following table sets forth our sales breakdown by product in Brazil in the periods indicated:

	2020	2021	2022
Domestic Sales Breakdown			
Hot-rolled products	33%	41%	41%
Cold-rolled products	18%	14%	14%
Galvanized products	31%	28%	29%
Tin plates products	10%	10%	9%
Long steel	7%	7%	7%

Sales by Industry

We sell our steel products to manufacturers in several industries. The following table sets forth our breakdown by market segment of domestic volume shipped in the periods indicated:

	2020	2021	2022
Sales Breakdown	*(in percentages of total domestic volume shipped)*		
Distribution network	36%	32%	30%
Industrial	16%	17%	21%
Packaging	11%	11%	9%
Automotive	10%	12%	12%
Home appliances	10%	11%	7%
Construction	18%	17%	21%

We believe we have a particularly strong domestic and export position in the sale of tin plates products used for packaging in Latin America. Our customers for these products include some of the world's largest food processing companies, as well as many small and medium-sized entities. We also maintain a strong position in the sale of galvanized products for use in the automobile manufacturing, construction and home appliance industries in Brazil and abroad, supplied by CSN Porto Real and CSN Paraná. No single customer accounts for more than 10% of our net operating revenues.

For further information on steel sales, see "Item 5. Operating and Financial Review and Prospects—5A. Operating Results—Overview—Steel Market—Product Mix and Prices" and "—Results of Operations—Year 2022 Compared to Year 2021—Net Operating Revenues."

Seasonality

Although steel demand is stronger in the second quarter of each year and weaker in the last quarter, our production is continuous throughout the year.

Long Steel – SWT

Our long steel products are sold both in Germany (approximately 30%) and other countries, mainly in Europe (approximately 60%), for use in industrial, infrastructure, civil construction and engineering industries.

Our sales approach is to establish brand loyalty and to maintain our reputation of high quality products and excellent delivery performance by developing long-term relationships with our customers. SWT focuses on meeting specific customer needs, developing solutions for both low temperature and high temperature resistant applications, as well as optimized section shapes for special applications.

Our commercial area is responsible for sales of all of our products worldwide. This area is divided into the direct sales team which is organized in 13 agencies located in Germany and in our core markets in Europe, the commercial back office department (order management from entry via tracking to the final delivery and invoicing), logistics contracting (truck, rail, vessel, maritime, inventory worldwide) and a rail logistics department.

SWT does not possess its own distribution network, instead cooperating with the big steel distributors and traders in Europe and other countries. All of our sales are on an order-by-order basis. The delivery time is related to the logistics chain and varies between two to six weeks depending on the relevant Incoterms and section type. As a result, our production levels closely reflect our order log book status. We forecast sales trends in both the European and export markets based on the historical data available from the last two years and the general economic outlook for the near future. We believe that our presence in the export market outside of Europe gives us more flexibility to optimize production and maximize our profitability.

Sections are not sold based on uniform pricing in Europe, as wide differences exist in terms of size, quality and specifications. In general, exports are priced based on international spot prices of steel at the time of sale in U.S. dollars or euros, depending on the destination. Sales are normally paid within 30 days and, in the case of exports, usually backed by a letter of credit and an insurance policy. SWT's businesses are 100% covered by Euler Hermes risk insurance, a bank guarantee or a letter of credit. Sales are made primarily on cost and freight terms.

Long Steel – Volta Redonda

In 2013, we started the production of long steel in Volta Redonda. This plant has production capacity of 500 kt/year when fully operational, providing the domestic market with products for civil and industrial construction.

Divided in wire rod, rebar CSN 50 and rebar CSN 25, we developed our products using high technology and in accordance with the highest quality and sustainability standards.

Our commercial team has its own sales force dedicated to meet all the needs of the long steel market: small customers as well as large wholesalers. We count with strategically located distribution centers to deliver our products throughout Brazil. In order to provide a wide range of products for the civil construction segment, we include in our product portfolio, in addition to cement and structural section products derived from flat steel, products such as tiles and tubes, among others.

Iron Ore

Iron ore products are commercialized by our teams located in Brazil, Portugal and Hong Kong. These three marketing units allow us to maintain close relations with our customers worldwide, understand the environment where they operate, monitor their requirements and provide all necessary assistance in a short period of time. Market intelligence analysis, planning and administration of sales are handled from Brazil by the staff in our São Paulo office, while our domestic commercial team is located at Casa de Pedra mine, in the state of Minas Gerais.

We supply our iron ore to the steel industry, and our main destinations are Brazil, Europe and Asia. Prevailing and expected levels of demand for steel products directly affect demand for iron ore. Demand for steel products is correlated to many factors, including GDP, global manufacturing production, urbanization, construction and infrastructure spending.

We believe our competitiveness has been improved by our customer service and market intelligence. It is paramount for us to have a clear understanding of our customers' businesses in order to address their needs, surpass their expectations and build long-term relationships. We have a customer-oriented marketing policy and specialized local personnel in direct contact with our customers in order to help determine the product mix that best suits each particular customer.

We first entered the international iron ore market in February 2007, upon completion of the first phase of the expansion of our coal seaport terminal in Itaguaí, in the state of Rio de Janeiro, which enabled us to handle and export iron ore and to load from our own facilities the first shipment of our iron ore products.

In 2022, our iron ore sales reached 33.3 million tons, of which 29.2 million tons were sales to third parties and 4.1 million tons were sales to our steel mills, which represents an increase of 0.3% compared to 2021. Total mining net revenue decreased 30.6% in 2022, mainly due to the lower volumes of iron ore produced and lower prices in the international market. The share of mining segment revenue in our total net revenue, however, decreased from 37.7% in 2021 to 28.2% in 2022.

In 2022, 87.1% of our iron ore export sales went to the Asian market, mainly China, and 12.9% were sold in the European market. Of our total sales volume to third parties, 95.6% were sinter feed and 4.4% lump ore.

As global iron ore markets are highly competitive, we focus on our flexibility, reliability and efficient manner of supplying iron ore to the world market.

Through our marketing offices, we have long-term relationships with most players in the steel industry in China, Japan, Taiwan, South Korea, Europe and Brazil.

Cement

We have a diverse customer base of approximately 25,000 customers, including construction material stores, home centers, concrete producers, construction companies, mortar industries and cement artifact producers.

The focus of our cement sales strategy is on the retail segment, in which we have a strong presence in sales points where we reinforce the quality of our product to final customers. The retail segment operates with a low level of inventory, and a significant percentage of repurchase, which highlights the competitive advantage of our distribution centers.

Insurance

We maintain several types of insurance policies as part of our risk management for each of our businesses and seek to follow industry practice regarding best coverage, which encompasses domestic and international (import and export) cargo transportation (road, rail, sea or air), life insurance, personal accidents, health, automobile, directors and officers, general liability, CAR (construction and erection risks), trade credit insurance, surety, named perils, ports and terminal liabilities.

We also have an insurance policy covering the operational risks, material damages and loss of profits of our following branches and subsidiaries: Presidente Vargas Steelworks, CSN Mineração and TECON. We annually renew this policy with domestic and foreign insurers and reinsurers. Our current policy, valid until June 2023, provides for limited indemnity of US$600 million (for an insured amount of US$14.9 billion) and a deductible of US$385 million for material damages and 45 days to loss of profits.

The coverage obtained in our insurance policies may not be sufficient to cover all risks or the extent of the risks we are exposed to. For more information, see "Item 3. Key Information—3D. Risk Factors—Risks Relating to Us and the Industries in Which We Operate—Our insurance policies may not be sufficient to cover all our losses."

Intellectual Property

We maintain a dedicated team to manage our intellectual property portfolio, which includes trademarks, patents, know-how, trade secrets and industrial designs. This team ensures adequate protection for our intellectual assets, the pursuit of best knowledge management practices and explores the possibility of new business generation through technology transfer agreements, among others.

Our intellectual property team also supports our innovation agenda through CSN Inova and provides the legal framework needed for the partnership agreements negotiated with third parties (including universities and research institutes) that are essential to strengthen our knowledge generation and foster technical cooperation for the development of new, improved and more sustainable processes, products and operations.

ESG – Environmental, Social and Governance Matters

We are committed, in particular by means of our integrated sustainability policy, to enhance the sustainability of our businesses ethically, transparently and through continuous improvement in our management mechanisms to protect the environment and prevent the occurrence of pollution and accidents. Our initiatives consider all applicable laws and regulations and include employee training to foster a common vision of sustainable development and social responsibility. We aim to promote a positive relationship and engagement with the local communities where our operations are located.

In furtherance of this commitment, we continuously evolve our ESG practices and invest in sustainability initiatives to mitigate the risks inherent in our business activities, present opportunities to enhance our processes and respond to the demands of an increasingly ESG-concerned market. These investments include processes and equipment that offer modern and reliable technologies for monitoring and control of environmental, health and safety risks.

The last couple of years were marked by important initiatives toward the growth and expansion of our operations and the development of our ESG agenda. In February 2021, we installed our ESG committee, which is a non-statutory advisory committee to our board of directors. Our ESG committee is responsible for (i) defining our ESG strategies, (ii) identifying ESG risks and opportunities, (iii) developing projects to further our innovation agenda and (iv) monitoring corporate projects in the following action pillars: sustainable finance, social practice, technology and operational sustainability, governance and diversity and inclusion.

We disclose detailed sustainability measures and data on our ESG webpage and in our annual integrated report on sustainability, which is available on our ESG webpage. The information on our ESG webpage and in our annual integrated report on sustainability is not part of, or incorporated by reference in, this annual report.

Environmental Matters

We continuously seek to transform natural resources into sources of economic prosperity through sustainable projects. In 2022, we continued our sustainability initiatives to mitigate and offset the environmental impacts of our activities by allocating R$492.2 million to environmental initiatives. Our investments in environmental sustainability in 2022 were mainly related to: (i) operation, maintenance and retrofitting of environmental control equipment mainly related to air and water protection; (ii) development of environmental studies for permit applications; and (iii) environmental management system.

Climate Change

Since 2013, we have conducted an inventory of greenhouse gas emissions, following the guidelines of the GHG Protocol. We have aimed to optimize our carbon management, risk mitigation and adaptation to climate change and, in 2022, for the eighth consecutive year, we received the Gold Seal for having reported the emissions from all our units and submitting them to external verification. Moreover, we annually report to the Carbon Disclosure Project − CDP, an international non-profit organization that seeks to further transparency of the environmental impact of companies' operations, specific information related to climate change, supply chain and water security.

In 2022, we announced our climate goal to deliver carbon-neutral essential materials by 2050. We invest efforts and resources to reduce greenhouse gas emissions to mitigate risks and impacts related to climate change. We were the first Brazilian company in the steel industry to publish targets for reducing greenhouse gas emissions.

In 2022, we also sought to further develop our strategy for management of climate-related risks and opportunities by building marginal abatement cost – MAC – curves to assess projects that could improve our production efficiency and technologies available for our operations and the possible contributions that each could make to reducing our greenhouse gas emissions. With this data, we were able to consider greenhouse gas reduction targets and we will be able to calculate our internal carbon price.

Our greenhouse gas reduction targets (measured as tCO_2e / ton of production) considering our Scope 1 and Scope 2 greenhouse gas emissions contemplate: (i) CSN's Mineração's aggregate reduction of 30% by 2035 and carbon neutrality by 2050; (ii) in our steel production, an aggregate reduction of 20% by 2035; and (iii) in our cement production, an aggregate reduction of 28% by 2030. We expect these reductions in greenhouse gas emissions will result from our existing expansion and efficiency projects, and therefore do not foresee that we will require any specific investments in order to meet these targets.

Water Resources

Water is one of the primary natural resources for our production processes, especially for our steel and mining segments. Based on risk assessment methodologies of the World Wildlife Fund's Water Risk Filter and the World Resources Institute's Aqueduct, over the last few years, we began to analyze our exposure to water risks in all our production plants, considering our processes and nearby watersheds. We develop specific action plans for sites located at high risk of water scarcity.

Materials

In our integrated sustainability and health, safety and environment policy, we set forth the importance of our environmental management through principles to reduce, reuse and recycle materials in our processes in order to optimize the use of natural resources. These principles are inherent in our processes as a fully integrated company. For example, we reuse all of our blast furnace slag in our production of cement and all of our metal scrap in our production of long steel. In 2022, CSN Inova spun off Circula+, which is a marketplace for the sale of waste, scrap and unserviceable assets. Circula+ combines consulting and technology in a complete circular solution to generate greater liquidity, profitability and transparency in the sales process.

Through our acquisition of LafargeHolcim (Brasil) S.A., we now own the Geocycle platform, which is responsible for managing industrial and urban waste that can be used as an alternative fuel in cement kilns. The Geocycle platform leverages our existing co-processing initiatives and strengthens our sustainable operations.

Biodiversity

We protect approximately 81,000 hectares of natural areas representing approximately four times the area occupied by our operations. In addition, for more than 20 years we have carried out programs for monitoring fauna and flora in the areas potentially impacted by our operations.

Our ESG committee has biodiversity as one of its priority agenda items and has formed a working group to develop action plans to protect the biomes where our operations are conducted. In 2022, our ESG committee developed the following projects: geoprocessing and land use recognition, forest diagnosis, benchmarking and an assessment of the impact and dependence of our operations related to ecosystem services and natural resources.

Tailings Dams

Our environmental guidelines and management include monitoring our tailings dams, which are inactive and subject to our ongoing decommissioning or de-characterization plans. In addition, on an annual basis, all of our tailings dams are audited by independent audit companies following technical standards and relevant legislation. For more information on the dams we operate, see "—Our Mining Segment—Dams."

We have been a global leader in the mining industry in mining waste management, having invested approximately R$541 million in technologies to reduce tailings deposits. Since 2020, we no longer dispose tailings in our dams, using dry stacking to stock this material. We use the Casa de Pedra dam only for water recirculation and we do not operate any active tailings dams.

Social Matters

Human Rights

In 2020, we became a signatory of the Global Compact, pursuant to which we committed to abide by its principles to support and respect the protection of internationally proclaimed human rights and to ensure that we are not complicit in human rights abuses.

In 2021, we conducted an extensive benchmark and internal analysis focused on the development of a new human rights policy, which we will launch in 2022 when we implement our first formal human rights diligence process based on principles set forth by the United Nations.

Gender Balance

We promote a zero-tolerance commitment to any type of discrimination, as set forth in our Code of Ethics. We believe that an inclusive and diverse environment is critical to stimulate innovation and guarantee the continuity of our business. We also believe that an inclusive approach is essential to eliminate barriers in hiring and retaining women employees and executives and to reap the improved performance generated by gender diversity. In 2022, we also increased the female representation at our executive level at each of CSN Mineração and CSN Cimentos, which now have two women members on their board of directors.

Local Communities

We monitor the social impacts of our operations in the communities where they are located. The socio-environmental impact studies we carry out allow us to identify the intensity, duration and actions necessary to minimize or mitigate social risks and impacts, considering the characteristics of each community and of our operations. We implement tailored action plans to reduce the identified impacts.

Additionally, through our proprietary foundation, we partner with local communities to promote social, educational and cultural development. In 2022, we invested R$26.0 million in social responsibility projects. We granted scholarships, which benefited 4,643 young people and reached 246,916 people considering public presentations of our several programs.

Safety and Health

Safety is a top priority for us and, in 2022, we achieved our lowest frequency rate of injuries since 2013 with or without lost time: 1.79 accidents / million hours worked, which represented a decrease of 25% as compared to 2021, the highest percentage of reduction since the beginning of our data compilation. In 2022, CSN Cimentos began its adaptation process to comply with ISO 45.001:2018. Lusosider in Portugal and SWT in Germany hold Health Management System and Occupational Safety certifications by ISO 45.001:2018.

Governance Matters

We continuously seek to develop mechanisms that improve our governance. In 2020, we instituted a sustainability, environment, health and safety executive department, which reports directly to our chief executive officer and focuses on implementing consistent governance throughout our corporate group.

Compliance

We have a Code of Ethics that reinforces our ethical standards and the values that apply to all of our employees, including executive officers and directors. Instances of non-compliance with our Code of Ethics or with other policies, whether by employees, executive officers, directors, suppliers or service providers, are subject to disciplinary measures, ranging from verbal or written warnings to suspension or dismissal or, in the case of third parties, termination of the relationship. We maintain a whistleblower channel for reports of suspected instances of non-compliance with our Code of Ethics or with other policies. In 2022, 83% of our employees were trained in compliance, covering our Code of Ethics and Anti-Corruption Policy.

For more information on our Code of Ethics, see "Item 16. Reserved—16B. Code of Ethics."

Regulatory Matters

Environmental Regulation

We are subject to Brazilian federal, state and municipal environmental laws and regulations governing air emissions, water waste discharges, solid and hazardous waste handling and disposal, wildlife management, forest maintenance, dangerous products transportation and preservation of traditional communities. We are committed to controlling the substantial environmental impact caused by our steelmaking, mining, cement, energy and logistics operations, in accordance with international standards and in compliance with environmental laws and regulations in Brazil. We believe we are in material compliance with applicable environmental requirements. While the Brazilian government has authority to promulgate environmental regulations setting forth minimum standards of environmental protection, state and local governments have the power to enact more stringent environmental regulations.

We are subject to regulation and supervision by the Brazilian Ministry of Environment (*Ministério do Meio Ambiente* – MMA), the environmental national council (*Conselho Nacional do Meio Ambiente*), which is responsible for enacting technical regulations and environmental protection standards, and the Brazilian Institute of Environment and Renewable Natural Resources (*Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis* – IBAMA), which is responsible for enforcing environmental laws at the federal level. The environmental regulations of the state of Rio de Janeiro, in which the Presidente Vargas Steelworks and Cantagalo cement plant are located, are enforced by the state government of Rio de Janeiro and municipalities, and supervised by the state environment institute (*Instituto Estadual do Ambiente*), or INEA, and the municipal environmental secretariat of each of Volta Redonda and Cantagalo.

In the state of Minas Gerais, where our main mining operations and certain of our cement operations are located, we are subject to regulations and supervision by the Environmental Policy Council (*Conselho Estadual de Política Ambiental* – COPAM), the Regional Superintendent of Environment and Sustainable Development (*Superintendência Regional de Meio Ambiente* – SUPRAM), the Superintendency of Priority Projects (*Superintendência de Projetos Prioritários* – SUPPRI), the Water Management Institute of Minas Gerais (*Instituto Mineiro de Gestão das Águas* – IGAM), the State Forestry Institute (*Instituto Estadual de Florestas* – IEF) and the State Environmental Foundation (*Fundação Estadual do Meio Ambiente* – FEAM), which are the competent bodies of the Secretary of State for the Environment and Sustainable Development of Minas Gerais (*Secretaria de Estado de Meio Ambiente e Desenvolvimento Sustentável* – SEMAD). We are also subject to local regulators, including the municipal environmental secretariats of Congonhas and Belo Vale, Ouro Preto and Rio Acima for our mining operations, and Arcos, Barroso, Montes Claros and Pedro Leopoldo, for our cement operations.

We are exposed to laws and regulations such as the law the state of Rio de Janeiro, through INEA, issued which requires steelmaking and cement facilities to present action plans to reduce greenhouse gas emissions when renewing or applying for operational licenses. At the federal level, the environmental national council (*Conselho Nacional do Meio Ambiente*), which is responsible for enacting technical regulations and environmental protection standards, issued Resolution No. 436/2011 to address air emissions that obliged steel companies to comply with certain emission standards as of December 2018, including adjustments in the filters of plant chimneys. Moreover, the Brazilian government has established a national policy for solid waste (*Política Nacional de Resíduos Sólidos*), which provides for strict guidelines for solid waste management and industry targets for reverse logistics as part of the environmental licensing process. Finally, a new regulatory framework for mining operations was issued in June 2018, which has imposed regulations on our mining operations, including requests for environmental recovery of areas and investments for the granting of mining concessions.

In the second half of 2022, we initiated cement operations in certain Brazilian states, and consequently, new regional environmental agencies started to regulate our activities, such as: superintendence of environmental administration (*Superintendência de Administração do Meio Ambiente*) and the executive water management agency (*Agência Executiva de Gestão das Águas do Estado da Paraíba*) in the State of Paraíba; institute of the environment and water resources (*Instituto do Meio Ambiente e Recursos Hídrico*) in the State of Bahia; secretary of state for environment and sustainable development (*Secretaria de Estado de Meio Ambiente e Desenvolvimento Sustentável*) in the State of Goiás; environmental company of the State of São Paulo (*Companhia Ambiental do Estado de São Paulo*); department of water and electric energy of the department of sanitation and water resources (*Departamento de Águas e Energia Elétrica da Secretaria de Saneamento e Recursos Hídricos*) in the State of São Paulo; institute of environment and water resources (*Instituto de Meio Ambiente e Recursos Hídricos*) and state water resources agency (*Agência Estadual de Recursos Hídricos*) in the State of Espírito Santo.

Specific goals and standards are established in operating permits or environmental accords issued to each company or plant. These specific operational conditions complement the standards and regulations of general applicability and are required to be observed throughout the duration of the permit or accord. The terms of such operating permits are subject to change and are likely to become stricter. All of our facilities currently have or are in the process of obtaining or renewing their operating permits.

Considering the current mining environment in Brazil following recent accidents of other mining companies in the cities of Mariana and Brumadinho, in the state of Minas Gerais, involving the breaking of upstream mining dams, changes in applicable laws or regulations could require us to modify our technologies and operations and to make unexpected capital expenditures. Capital expenditures that we have already made may not generate the returns we expected, if any. In addition, new or more stringent environmental licensing requirements for our project operations, specifically for our dams, could be imposed on us and we may encounter delays in obtaining environmental or other operating licenses, or not be able to obtain or renew them. These events and additional costs may have a negative impact on us and the return from our projects and may render certain projects economically or otherwise unfeasible. For more information, see "Item 3. Key Information—3D. Risk Factors—Risks Relating to Us and the Industries in Which We Operate—Our activities depend on authorizations, concessions, licenses and permits, and changes in applicable laws, regulations or government measures could adversely affect us" and "—We are subject to environmental, health and safety incidents and current, new or more stringent regulations may result in liability exposure and increased capital expenditures."

Mining Regulation

Under the Brazilian Federal Constitution of 1988, or the Brazilian Constitution, all mineral resources in Brazil belong to the federal government. The Brazilian Constitution, the Brazilian Mining Code (*Código de Mineração*) enacted through Decree Law 227/1967, or the Mining Code, and mining regulations enacted through Decree 9,406/2018 impose various regulatory restrictions on mining companies relating to, among other things:

- manner in which mineral deposits must be exploited;
- health and safety of workers and the safety of residential areas located near mining operations;
- protection and restoration of the environment;
- prevention of pollution; and
- support of local communities where mines are located.

The Mining Code also imposes certain notifications and reporting requirements.

Mining companies in Brazil can only prospect and mine pursuant to prospecting authorizations or mining concessions granted by the ANM. The ANM grants prospecting authorizations to a requesting party for an initial period of one to three years. These authorizations are renewable at the ANM's discretion, provided that the requesting party is able to show that the renewal is necessary for proper conclusion of prospecting activities. Upon completion of prospecting activities and geological exploration at the site, the holder of the prospecting authorization must submit a final report to the ANM. If the geological exploration reveals the existence of a mineral deposit that is technically and economically exploitable, the grantee has one year (which the ANM may extend) from approval of the report by the ANM to apply for a mining concession by submitting an economic exploitation plan or to transfer its right to apply for a mining concession to an unrelated party. When a mining concession is granted, the holder of such mining concession must begin on-site mining activities within six months. The ANM grants mining concessions for an indeterminate period of time lasting until the exhaustion of the mineral deposit. After extraction, the mineral products that are specified in the concession belong to the holder of the concession. With the prior approval of the ANM, the holder of a mining concession can transfer it to an unrelated party that is qualified to own concessions. Under certain circumstances, unrelated parties may challenge mining concessions.

After accidents involving the breaking of upstream mining dams operated by other mining companies in the cities of Mariana and Brumadinho in the state of Minas Gerais, the ANM and Brazilian environmental regulatory authorities have applied more stringent environmental licensing requirements for mining project operations, specifically for dams. For more information, see "Item 3. Key Information—3D. Risk Factors—Risks Relating to Us and the Industries in Which We Operate—Our activities depend on authorizations, concessions, licenses and permits, and changes in applicable laws, regulations or government measures could adversely affect us" and "—We are subject to environmental, health and safety incidents and current, new or more stringent regulations may result in liability exposure and increased capital expenditures."

Mining Concessions

We operate our iron ore mining activities at Casa de Pedra mine under a mining concession known as *Manifesto de Mina* under Brazilian regulations, which gives us the right to extract the iron ore deposits existing within our property limits. Our iron ore mining activities at Engenho and Fernandinho mines are based on a concession by the MME, which grants us the right to exploit mineral resources from the mine for an indeterminate period of time lasting until the exhaustion of the mineral deposit. Our limestone and dolomite mining activities at Bocaina mine and our tin mining activities at Ariquemes (ERSA mine) are based on concessions under similar conditions.

The Manifesto de Mina for Casa de Pedra mine and the Engenho mining concession are held by CSN Mineração, while the Fernandinho mining concession and the mining rights of Cayman and Pedras Pretas are held by Minérios Nacional.

For further information on our concessions, see "—4D. Property, Plant and Equipment."

Mineral Rights and Ownership

Our mineral rights for Casa de Pedra mine include the mining concession, a beneficiation plant, roads, a loading yard and a railway branch, and are duly registered with the ANM. We have also been granted by the ANM easements in 19 mine areas located in the surrounding region. These areas are needed to expand our operations and as operating support areas. In addition, we have obtained and are in compliance with all environmental licenses and authorizations for our operations and projects at Casa de Pedra mine.

Quality requirements (chemical and physical) are the key "modifying factors" in the definition of ore reserves at Casa de Pedra and were properly accounted for by our mine planning department.

The Brazilian government charges us a royalty known as CFEM, which calculation considers gross revenue, excluding taxes on sales. The ANM is responsible for auditing mining companies and enacting regulations to ensure proper payment of CFEM.

Current CFEM rates vary between 1% and 3.5%, as follows:

- 1%: rocks, sand, gravel, clay and other minerals used in civil construction; ornamental rocks and mineral and thermal water;
- 1.5%: gold;
- 2%: diamond and other minerals;
- 3%: bauxite, manganese, niobium and rock salt;
- 3.5%: iron ore.

The Mining Code and ancillary mining laws and regulations also impose other financial obligations. For example, mining companies must compensate landowners for the damages and loss of income caused by the use and occupation of the land (either for exploitation or exploration) and must also share with landowners the results of their exploration (at a rate of 50% of the applicable CFEM). Mining companies must also enter into agreements with the Brazilian government to use public lands and eventually compensate the government for damages caused to such public lands. A substantial majority of our mines and mining concessions are on lands owned by us or on public lands for which we hold mining concessions.

Antitrust Regulation

We are subject to various laws in Brazil which seek to maintain a competitive commercial environment. Competition law and practice in Brazil are governed by Law No. 12,529, dated November 30, 2011, which came into force on May 30, 2012, and provided for significant changes in the Brazilian antitrust system's structure, including the creation of the Brazilian antitrust authority (*Conselho Administrativo de Defesa Econômica*), or CADE. This law introduced a mandatory pre-merger notification system, as opposed to the post-merger review system previously in force. CADE comprises an Administrative Tribunal of Economic Defense (*Tribunal Administrativo de Defesa Econômica*), a General-Superintendence (*Superintendência-Geral*) and a Department of Economic Studies (*Departamento de Estudos Econômicos*).

CADE is responsible for the control of anti-competitive practices in Brazil. If CADE determines that certain companies have acted collusively to raise prices, it has the authority to impose fines on the offending companies, prohibit them from receiving loans from Brazilian government sources and bar them from bidding on public projects. In addition, CADE has the authority to prevent, or impose certain conditions or restrictions to, mergers and acquisitions transactions (for instance, require a company to divest assets or adopt other measures that CADE deems appropriate to guarantee a competitive environment) should it determine that the relevant industry is insufficiently competitive or that the transaction creates a market concentration that can affect competition. For further antitrust-related information, see “Item 8. Financial Information—8A. Consolidated Statements and Other Financial Information—Legal and Administrative Proceedings.”

Protectionist Measures

Over the past several years, exports of steel products from various countries and companies, including Brazil and us, have been the subject of anti-dumping, countervailing duty and other trade related investigations from importing countries. These investigations resulted in duties that limit our access to certain markets.

In Brazil, we are subject to regulation and supervision by the Special Secretary of Foreign Trade and International Business (*Secretaria de Comercio Exterior e Negócios Internacionais* – SECINT), the Secretary of Foreign Trade (*Secretaria de Comércio Exterior* – SECEX) and the Subsecretary of Trade Defense and Public Interest (*Subsecretaria de Defesa Comercial e Interesse Público* – SDCOM). Worldwide, our exports are subject to the protectionist measures summarized below.

United States: Anti-dumping (AD) and Countervailing Duties (CVD)

In the United States, we are subject to regulation and supervision by the U.S. Department of Commerce, or DOC, the ITC, the International Trade Administration, or ITA, and the Import Administration, or IA.

Cold-Rolled Products

In July 2015, AK Steel Corporation, ArcelorMittal USA LLC, Nucor Corporation, Steel Dynamics, Inc. and United States Steel Corporation filed antidumping and countervailing duty, or AD/CVD, petitions with respect to certain cold-rolled flat steel products from Brazil, China, India, Japan, Korea, Russia, and the United Kingdom with the ITC and the DOC. In August 2015, the DOC initiated both AD/CVD investigations with respect to cold-rolled steel from Brazil. The final determination for AD and CVD orders regarding cold-rolled steel was issued in July 2016, imposing a rate of 11.31% for CVD and a rate of 19.56% for AD with a cash deposit of 15.49%.

In June 2021, the five year “sunset review” of the AD/CVD orders on cold-rolled steel from Brazil was initiated. In July 2022, the ITC announced the revocation of the AD and CVD orders for cold-rolled products imported from Brazil.

Hot-Rolled Products

In August 2015, AK Steel Corporation, ArcelorMittal USA LLC, Nucor Corporation, SSAB Enterprises, LLC, Steel Dynamics, Inc., and United States Steel Corporation filed AD/CVD petitions with respect to certain hot-rolled steel products from Australia, Brazil, Japan, the Republic of Korea, the Netherlands, Turkey, and the United Kingdom. In September 2015, the DOC initiated both AD/CVD investigations with respect to hot-rolled steel from Brazil and the ITC announced affirmative preliminary injury determinations with respect to hot-rolled steel imports from Brazil.

The final determination for hot-rolled products was issued in July 2016, imposing a rate of 11.31% for CVD and a rate of 19.56% for AD with a cash deposit of 15.49%. The final determination for hot-rolled products was issued in August 2016, imposing a rate of 11.31% for CVD and a rate of 33.14% for AD with a cash deposit of 29.07%.

In 2021, the ITC initiated the five year “sunset review” of the AD and CVD orders on hot-rolled steel products from Brazil. In September 2022, the ITC announced the revocation of the AD and CVD orders regarding hot-rolled steel products imported from Brazil.

In April 2017, the President of the United States, Donald Trump, requested an investigation under Section 232 of the U.S. Trade Expansion Act to determine if steel imports were harming U.S. national security. As a result of this investigation, in March 2018, the U.S. government implemented Section 232 measures and imposed an ad valorem tariff of 25% on imported steel. Brazil obtained a temporary suspension of the measure until the end of April 2018, which was extended to the end of May 2018. After the suspension, Brazil entered into an agreement with the United States, which established quotas for semi-finished steel products based on average exports between 2015 and 2017 and quotas for finished steel products based on average exports between 2015 and 2017 with a reduction of 30%. Section 232 subjects us to a quota for exports of slabs, cold and hot-rolled steel sheets, pre-painted corrosion resistant, Al-Zn and tin mill products. However, because our cold and hot-rolled products are already subject to AD duties and CVD tariffs, these exports are unaffected by Section 232 measures. While we do not believe Section 232 measures have materially affected our exports because the quotas are not always reached, we would expect that a lifting of these measures would result in increased exports to the United States depending on demand.

European Union: Anti-dumping

In the European Union, we are subject to regulation and supervision by the European Commission.

Hot-Rolled Products

In July 2016, the European Commission initiated an AD investigation concerning imports of certain hot-rolled flat steel products originating from Brazil, Iran, Russia, Serbia and Ukraine. The investigation was limited to a reasonable number of exporting producers by using a sample in accordance with Article 17(1) of Regulation (EU) 2016/1036 of the European Parliament. The criteria used to select the sample was the volume of the product concerned exported to the European Union during the investigation period. As a result, three companies, CSN, Usiminas and Arcelor Mittal, collectively responsible for 97% of total steel exports from Brazil to the European Union, were chosen as part of the sample subject to investigation.

In January 2017, the European Commission issued a regulation establishing that imports of hot–rolled flat steel products originating from Brazil and Russia be subject to customs registration, meaning that all imports cleared after January 7, 2017 would be exposed to the risk of retroactive collection of duties against Brazil at the end of the investigation.

The preliminary determination was issued in April 2017 by the European Commission, which opted not to impose provisional duties on the imports of hot-rolled products from Brazil into the European Union. In October 2017, the European Commission issued a final determination imposing definitive AD duties for the exports of hot-rolled steel products into the European Union from Brazil. The duties imposed were a tariff rate of 53.4 euros/ton for CSN, 63 euros/ton for Usiminas, 54.5 euros/ton for Arcelor Mittal and 55.8 euros/ton for Gerdau.

In October 2022, the European Commission initiated the five year "sunset review" of AD duties on imports of certain hot-rolled flat steel products originating from, among other countries, Brazil. We expect the results of the review for the last quarter of 2023.

Tin Free Steel

In September 2021, the European Commission initiated an AD investigation concerning imports of electrolytic chromium coated steel (tin free steel) products originating from Brazil and China. The European Commission issued a preliminary determination in May 2022, opting not to impose provisional duties on the imports of hot-rolled products from Brazil into the European Union. In October 2022, the European Commission issued a final determination imposing definitive AD duties for the exports of electrolytic chromium coated steel products into the European Union from Brazil. The duties imposed were a tariff rate of €348.39/ton for CSN.

Prompted by the United States' adoption of Section 232 measures, the European Union initiated, in April 2018, an investigation into safeguards for imports of 26 categories of steel products. In February 2019, a definitive E.U. regulation imposed safeguard measures on imports of hot-rolled, cold-rolled and tin mill products and imposed quotas for the next three years. The quota system is divided into specific quotas for countries which participation in exports is above 5% on all European Union imports, and global quotas for the countries which participation is below 5% of European Union imports. Unlike the U.S. quotas pursuant to Section 232, the E.U. quotas provide for imports above the quota, subject to a 25% tariff. Because our hot-rolled products are already subject to AD duties, these exports are unaffected by the E.U. quotas. In the case of our cold-rolled and tin mill products, because the E.U. quotas have not been reached since implemented, these exports have also been unaffected. In June 2021, the European Commission decided to extend the E.U. safeguard measures on certain steel products.

In December 2021, the European Commission published in the E.U. Official Journal a notice of initiation concerning a review of the safeguard measures applicable to imports of certain steel products, such review was concluded in 2022. In December 2022, the European Commission initiated a review to determine whether to terminate the steel safeguard measures one year earlier than its current end date in June 2024. Following its review, the European Commission will submit the proposal to the vote of E.U. member states.

For more information, see "Item 3. Key Information—3D. Risk Factors—Risks Relating to Us and the Industries in Which We Operate—Protectionist and other measures adopted by foreign governments could adversely affect our export sales."

Canada

In Canada, we are subject to regulation and supervision by the Canadian International Trade Tribunal, the Canada Border Services Agency and the Anti-dumping and Countervailing Directorate.

Since 2001, Canada has had an anti-dumping order in place relating to hot-rolled sheets and coils from Brazil. However, we are not currently affected by this anti-dumping order since we do not export hot-rolled sheets or coils to Canada.

Overview of Steel Industry

Global Steel Industry

The global steel industry comprises hundreds of steelmaking facilities divided into two major categories: integrated steelworks and non-integrated steelworks, depending on the method used for producing steel. Integrated plants, which accounted for approximately two-thirds of worldwide crude steel production in 2013, typically produce steel by smelting in blast furnaces the iron oxide found in ore and refining the iron into steel, mainly through the use of basic oxygen furnaces or, more rarely, in electric arc furnaces. Non-integrated plants (sometimes referred to as mini-mills), which accounted for approximately one-third of worldwide crude steel production in 2013, produce steel by melting scrap metal, occasionally complemented with other metallic materials, such as direct reduction iron or hot-briquette iron, in electric arc furnaces. Industry experts expect that a lack of a reliable and continuous supply of quality scrap metal, as well as the high cost of energy, may restrict the growth of mini-mills.

Steel continues to be the material of choice in the automotive, construction, machinery and other industries. Notwithstanding potential threats from substitute materials such as plastics, aluminum, glass and ceramics, especially for the automotive industry, steel continues to demonstrate its economic advantage.

In 2021, global crude steel production was 1,960 million tons, which represented an increase of 86 million tons, or 3.7%, as compared to 2020, due to an increase in crude steel production in all countries except China, Malaysia, Indonesia and Iran.

In 2022, global crude steel production was 1,879 million tons, which represented a decrease of 81 million tons, or (4.2)%, as compared to 2021, due to a decrease in the crude steel production of the main steel producing countries, including China, Japan, United States, Russia and Ukraine.

Brazilian Steel Industry

Since the 1940s, steel has been of vital importance to the Brazilian economy. During the 1970s, significant government investments were made to provide Brazil with a steel industry able to support the country's industrialization boom. After a decade of investment scarcity in the sector in the 1980s, the government selected the steel sector as the first for privatization commencing in 1991, resulting in a more efficient group of companies operating today.

Privatization

During almost 50 years of state control, the Brazilian flat steel sector was coordinated on a national basis under the auspices of Siderbrás, the national steel monopoly. The state had far less involvement in the non-flat steel sector, which has traditionally been made up of smaller private sector companies. The larger integrated flat steel producers operated as semi-autonomous companies under the control of Siderbrás and were each individually privatized between 1991 and 1993. We believe that the privatization of the steel sector in Brazil has resulted in improved financial performance, as a result of increased efficiencies, higher levels of productivity, lower operating costs and an increase in investment.

Domestic Demand

Historically, the Brazilian steel industry has been affected by substantial fluctuations in domestic demand for steel. Although national per capita consumption varies with GDP, fluctuations in steel consumption tend to be more pronounced than changes in economic activity. Crude steel consumption per capita in Brazil has decreased from 147 kilograms in 2010 to 110 kilograms in 2019. It is considered low when compared to the levels of developed countries such as the United States and Germany.

According to the IBGE, Brazil's GDP sharply contracted by 4.1% in 2020 due to global effects of developments relating to the COVID-19 pandemic and grew by 4.6% in 2021. Crude steel production was 34.0 million tons in 2022, representing a decrease of 5.8% as compared to 2021, and domestic sales decreased 9.3% in 2022 to 20.2 million tons, mainly due to production cost and supply chain challenges deriving primarily from developments relating to the conflict between Russia and Ukraine.

In 2022, Brazil's GDP grew by 2.9% and crude steel production decreased 5.8%, in each case as compared to 2021. The Brazilian flat steel sector is shifting production to the higher value-added consumer durable sector, which is highly dependent on domestic consumer confidence that, in turn, is affected by economic policies and certain expectations of the current government administration. Over the past years, automobile manufacturers made significant investments in Brazil. In 2022, the apparent consumption of steel in Brazil decreased 10.9% compared to 2021 (representing an increase of 11.9% compared to 2020).

Market Participants and Competition

Both the worldwide and the Brazilian steel markets are intensely competitive. The primary competitive factors in these markets are quality, price, payment terms and customer service. Further, continuous advances in materials, sciences and resulting technologies have given rise to improvements in products such as plastics, aluminum, ceramics, glass and concrete, permitting them to serve as substitutes for steel for certain purposes.

Competition in the Global Steel Industry

In 2022, Brazil maintained its place as the largest producer of crude steel in South America, with a production output of 34 million tons and a 1.86% share of total global production, according to data from the World Steel Association, or WSA. In 2022, Brazil maintained the ninth position in the global steel production ranking, accounting for 78.5% of total production in South America.

We compete on a global basis with the world's leading steel manufacturers. We have positioned ourselves in the world market with a product mix characterized by high margins and strong demand, such as tin plate and galvanized products. We have relatively low-cost, and sufficient availability of, labor and energy resources, and own high-grade iron ore reserves. These global market advantages are partially offset by costs of transporting steel throughout the world, usually by ship. Shipping costs, which protect the domestic steel market, put pressure on our export prices. To maintain our position in the world steel market in light of the highly competitive international environment with respect to price, we must maintain our product quality and customer service at a high level. See "—Regulatory Matters—Protectionist Measures" for a description of protectionist measures adopted by steel-importing countries that could adversely affect our competitive position in the global steel industry.

Competition in the Brazilian Steel Industry

Brazil's principal competitive advantages are its abundant supply of low-cost, high-grade iron ore and energy resources. Brazil also benefits from a vast internal market with large growth potential; a privatized industry making investments in plant and equipment; and deep-water ports that permit the operation of large ships and facilitate access to export markets.

According to IABr, the Brazilian steel industry comprises 31 mills managed by 12 corporate groups, with an aggregate installed annual capacity of approximately 51 million tons, producing a full range of flat, long, carbon, stainless and specialty steel.

The following table sets forth the production of crude steel by Brazilian companies in the periods indicated:

	2020	2021
	(*in millions of tons*)	
Production		
Flat Steel		
Gerdau	6.2	6.9
Usiminas	2.8	3.2
ArcelorMittal Tubarão	5.0	7.1
CSN	3.8	4.3
Long Steel		
Ternium Brasil	4.1	4.5
Other	9.5	10.1
Total	**31.4**	**36.1**

Source: IABr
* 2022 data was not available as of the date of this annual report.

Capacity Utilization

Installed capacity in Brazil in 2022 was estimated at 51.5 million tons.

Exports/Imports

Brazil has been playing an important role in the export market, primarily as an exporter of semi-finished products. The Brazilian steel industry has taken several steps towards expanding its capacity to produce value-added products. The Brazilian steel industry has experienced periods of overcapacity, cyclicality and intense competition during the past several years. Demand for finished steel products, as measured by domestic apparent consumption, has consistently fallen short of total supply (defined as total production plus imports). In 2020, steel imports reached 2.0 million tons, which represented a decrease of 17.7% as compared to 2019, and steel exports decreased 2.2 million tons, or 13.8%, as compared to 2019. In 2021, steel imports reached 4.9 million tons, which represented an increase of 144% as compared to 2020, and steel exports increased 0.5 million tons, or 4.0%, as compared to 2020. In 2022, steel imports reached 3.3 million tons, which represented a decrease of 32.4% as compared to 2021, and steel exports reached 11.9 million tons, or an increase of 8.8%, as compared to 2021.

For information on the production by the largest Brazilian steel companies, see "—Market Participants and Competition—Competition in the Brazilian Steel Industry."

Overview of Mining Industry

The Brazilian mining industry is focused on the extraction of iron, copper, gold, aluminum, nickel and niobium, which provides a surplus in Brazil's trade balance, seizing vast natural mineral reserves and creating a high number of direct and indirect jobs. In 2022, the Brazilian mining industry accounted for 12% of Brazil's total exports and 49% of Brazil's trade balance. In 2022, iron ore exports represented 69%, or US$28.9 billion, of the Brazilian mining industry's total exports.

According to The Commodity Exchange Inc. – COMEX, in 2022, China was the country that most imported from the Brazilian mining industry, having imported a total of US$17.94 billion. Of the total exports of the Brazilian mining industry in 2022, 69.3% were related to iron, 6.6% to copper, 11.8% to gold, 4.9% to niobium and 7.4% to others.

Brazil is well-positioned as a supplier of the world's iron ore demand. In 2022, Brazil accounted for 16.7% of the global production of iron ore, with a production of 399.34 million metric tons, in each case according to the global research and consulting firm Wood Mackenzie.

In addition, according to the MME, Brazil's total iron ore reserves represented a volume of 34 billion metric tons in 2022, which accounted for approximately 18.9% of global iron ore reserves, evidencing the importance of Brazil to the global iron ore extraction sector.

Brazilian iron ore is considered to be high quality and contains a low level of contaminants in its composition. Due to these characteristics, exported iron ore has gained ground in international markets, particularly in China, where recent regulatory changes have led Chinese steel producers to turn to higher quality iron ore.

Furthermore, as a result of the depreciation of the *real*, iron ore prices have become more competitive due to the increased purchasing power of international players that purchase Brazilian iron ore. This sets a favorable scenario for us since most of our mining production costs are denominated in *reais* while our mining revenues are mostly denominated in U.S. dollars, which increases the margin of our products.

Extracted iron ore can be used to manufacture several types of steel, so there is a strong correlation between steel production and the consumption of iron ore.

Overview of Cement Industry

Cement is one of the main inputs used in construction and, as a result, the cement industry is affected by trends and dynamics in the civil construction market, which is, in turn, acutely subject to macroeconomic developments. In particular, GDP growth and decreased interest rates result in increased credit availability, which fuels demand in the civil construction market.

The civil construction market in Brazil is affected by infrastructure and affordable housing projects, which account for a significant portion of Brazilian civil construction demand. The Green and Yellow Housing Program (*Programa Casa Verde e Amarela*), led by the Brazilian federal government to address Brazil's housing deficit, is directed at affordable housing projects, which account for a significant portion of civil construction in Brazil. As of December 31, 2022, there was a deficit of approximately 8.0 million residential units in Brazil, according to the Union of Real Estate Purchase, Sale and Administration Companies (*Sindicato das Empresas de Compra, Venda e Administração de Imóveis*), or SECOVI.

In addition, infrastructure in Brazil presents ample room for development. Although Brazil was the twelfth largest economy in the world in 2022, in terms of GDP and according to the World Bank, significant infrastructure bottlenecks present an important opportunity for civil construction and, consequently, for demand for cement.

4C. Organizational Structure

We conduct our business directly and through subsidiaries. For more information on our organizational structure, see note 10 to our audited consolidated financial statements included elsewhere in this annual report.

4D. Property, Plant and Equipment

Our principal executive offices are located in the city of São Paulo, state of São Paulo, and our main production operations are located in the city of Volta Redonda, state of Rio de Janeiro. Presidente Vargas Steelworks, our steel mill, is an integrated facility covering approximately four square km and is located in the city of Volta Redonda, state of Rio de Janeiro. Our iron ore, limestone and dolomite mines are located in the state of Minas Gerais, which borders the state of Rio de Janeiro to the north. Each of these mines lies within 500 km of, and is connected by rail and paved road to, the city of Volta Redonda.

The table below sets forth certain material information regarding our properties as of December 31, 2022. For more information, see note 11 to our audited consolidated financial statements included elsewhere in this annual report.

Description		Activity	Country	State	City	Title
CSN	Presidente Vargas Steelworks	Steel Mill	Brazil	Rio de Janeiro	Volta Redonda	Owned
CSN	CSN Paraná	Galvanized and Pre-Painted Products	Brazil	Paraná	Araucária	Owned
CSN	CSN Porto Real	Galvanized Steel Producer	Brazil	Rio de Janeiro	Porto Real	Owned
CSN	Service Center	Distributor	Brazil	São Paulo	Mogi das Cruzes	Owned
CSN	Service Center	Distributor	Brazil	Bahia	Camaçari	Owned
CSN	Thermoelectric Plant	Energy	Brazil	Rio de Janeiro	Volta Redonda	Owned
CSN	Long Steel Plant	Long steel Manufacturer	Brazil	Rio de Janeiro	Volta Redonda	Owned

Description		Activity	Country	State	City	Title
CSN	Distribution Center	Distributor	Brazil	Rio Grande do Sul	Canoas	Third Parties
CSN	Steel Distribution Center	Distributor	Brazil	Minas Gerais	Contagem	Third Parties
CSN	Distribution Center	Steel Distributor	Brazil	Rio Grande do Sul	Caxias do Sul	Third Parties
CSN	Distribution Center	Steel	Brazil	São Paulo	Jacareí	Third Parties
CSN	Distribution Center	Steel Distributor	Brazil	Bahia	Camaçari	Third Parties
CSN	Distribution Center	Steel Distributor	Brazil	Santa Catarina	Joinville	Third Parties
CSN	Distribution Center	Distributor	Brazil	São Paulo	Vargem G. Paulista	Third Parties
CSN	Office	Office	Brazil	São Paulo	São Paulo	Third Parties
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	São Paulo	Mogi das Cruzes	Owned
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	Minas Gerais	Uberlândia	Owned
CSN Cimentos	Arcos Mine	Limestone Mine	Brazil	Minas Gerais	Arcos	Owned
CSN Cimentos	Clinker and Cement Plant	Cement Manufacturer	Brazil	Minas Gerais	Arcos	Owned
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	São Paulo	Mauá	Third Parties
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	São Paulo	Ribeirão Preto	Third Parties
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	São Paulo	Americana	Third Parties
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	São Paulo	São José dos Campos	Third Parties
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	São Paulo	Osasco	Third Parties
CSN Cimentos	Cement Plant	Cement Manufacturer	Brazil	Rio de Janeiro	Volta Redonda	Third Parties
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	Rio de Janeiro	Rio de Janeiro (Arará)	Third Parties
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	Rio de Janeiro	Rio de Janeiro (Campo Grande)	Third Parties
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	Rio de Janeiro	Queimados	Third Parties
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	Rio de Janeiro	Itaboraí	Third Parties
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	Rio de Janeiro	Barra Mansa	Third Parties
CSN Cimentos	Distribution Center	Cement Distributor	Brazil	Minas Gerais	Arcos	Third Parties
CSN Cimentos	Mine	Limestone Mine	Brazil	Paraíba	Pitimbu	Owned
Companhia Metalúrgica Prada	Service Center	Distributor	Brazil	São Paulo	Mogi das Cruzes	Owned
Companhia Metalúrgica Prada	Service Center	Distributor	Brazil	São Paulo	Bebedouro	Owned
Companhia Metalúrgica Prada	Steel Can Manufacturer	Packaging	Brazil	São Paulo	São Paulo	Owned
Companhia Metalúrgica Prada	Steel Can Manufacturer	Packaging	Brazil	Minas Gerais	Uberlândia	Owned
Companhia Metalúrgica Prada	Metallic Packaging Plant	Packaging	Brazil	Rio de Janeiro	Resende	Third Parties
Companhia Metalúrgica Prada	Metallic Packaging Plant	Packaging	Brazil	Rio Grande do Sul	Pelotas	Third Parties
Companhia Metalúrgica Prada	Metallic Packaging Plant	Packaging	Brazil	Rio de Janeiro	Barão de Juparanã	Owned
Companhia Metalúrgica Prada	Distribution Center	Steel Roll	Brazil	São Paulo	Salto	Third Parties
Companhia Metalúrgica Prada	Distribution Center	Distributor	Brazil	São Paulo	Piracicaba	Third Parties
Companhia Metalúrgica Prada	Distribution Center	Distributor	Brazil	Minas Gerais	Contagem	Third Parties

Description		Activity	Country	State	City	Title
CSN Mineração	Iron Ore Mine	Iron Ore Mine	Brazil	Minas Gerais	Congonhas	Owned and Third Parties
CSN Mineração	Ouro Preto Mine	Iron Ore Mine	Brazil	Minas Gerais	Ouro Preto	Owned
CSN Mineração	TECAR	Iron Ore Shipment	Brazil	Rio de Janeiro	Itaguaí	Third Parties
Minérios Nacional	Fernandinho Mine	Iron Ore Mine	Brazil	Minas Gerais	Rio Acima	Third Parties
ERSA	ERSA Office	Tin Mine	Brazil	Rondônia	Ariquemes	Owned
ERSA	ERSA Mine	Tin Mine	Brazil	Rondônia	Itapuã do Oeste	Owned
Companhia Siderúrgica Nacional, LLC	CSN LLC Office	Office	USA	Illinois	Chicago	Third Parties
Lusosider	Lusosider	Flat Steel Producer	Portugal	Seixal	Seixal	Owned
SWT	SWT	Steel Profile	Germany	Saalfeld-Rudolstadt	Unterwellen born	Owned
Consórcio Usina Hidrelétrica de Igarapava	Hydroelectric Facility	Energy	Brazil	São Paulo	Igarapava	Owned
Itá Energética S.A.	Hydroelectric Facility	Energy	Brazil	Rio Grande do Sul	Aratiba	Owned
TECON	TECON - Terminal de Containers	Logistics	Brazil	Rio de Janeiro	Itaguaí	Third Parties
MRS	Railway	Railway Logistics	Brazil	Several	Several	Third Parties
FTL	Railway	Railway Logistics	Brazil	Several	Several	Third Parties
TLSA	Railway	Railway Logistics	Brazil	Several	Several	Third Parties
Elizabeth Cimentos S.A.	Cement Plant	Cement Manufacturer	Brazil	Paraíba	Alhandra	Owned
Elizabeth Cimentos S.A.	Distribution Center	Cement Distributor	Brazil	Bahia	Salvador	Third Parties
CSN Cimentos Brasil	Cargo Terminal	Cargo Terminal	Brazil	São Paulo	Ribeirão Preto	Owned
CSN Cimentos Brasil	Cargo Terminal	Cargo Terminal	Brazil	Pernambuco	Recife	Third Parties
CSN Cimentos Brasil	Cargo Terminal	Cargo Terminal	Brazil	Rio Grande do Norte	Macaíba	Third Parties
CSN Cimentos Brasil	Rio Blender e Cargo Terminal	Rio Blender e Cargo Terminal	Brazil	Rio de Janeiro	Rio de Janeiro	Owned
CSN Cimentos Brasil	Cement plant and limestone mine	Cement plant and limestone mine	Brazil	Rio de Janeiro	Cantagalo	Owned
CSN Cimentos Brasil	Cargo Terminal	Cargo Terminal	Brazil	Minas Gerais	Barbacena	Owned
CSN Cimentos Brasil	Cement plant Mine Capoeira Grande	Cement plant Mine Capoeira Grande	Brazil	Minas Gerais	Barroso	Owned
CSN Cimentos Brasil	Small hydroelectric power plant Macacos	Small hydroelectric power plant Macacos	Brazil	Minas Gerais	Sacramento	Owned
CSN Cimentos Brasil	Cement plant and limestone mine	Cement plant and limestone mine	Brazil	Minas Gerais	Montes Claros	Owned
CSN Cimentos Brasil	Cement plant and Matozinhos Mine	Cement plant and Matozinhos Mine	Brazil	Minas Gerais	Pedro Leopoldo	Owned
CSN Cimentos Brasil	Clay mine	Clay mine	Brazil	Minas Gerais	Matozinhos	Owned
CSN Cimentos Brasil	Limestone extraction	Limestone extraction	Brazil	Minas Gerais	Prados	Owned
CSN Cimentos Brasil	Cement plant	Cement plant	Brazil	Paraíba	Caaporã	Owned
CSN Cimentos Brasil	Cement grinding	Cement Grinding	Brazil	Bahia	Candeias	Owned
CSN Cimentos Brasil	Cement grinding and limestone mine	Cement grinding and limestone mine	Brazil	Goiás	Cocalzinho de Goiás	Owned
CSN Cimentos Brasil	Cement grinding	Cement grinding	Brazil	Espírito Santo	Serra / Vitória	Owned

Description		Activity	Country	State	City	Title
CSN Cimentos Brasil..................	Cement grinding and aggregate	Cement grinding and aggregate	Brazil	São Paulo	Sorocaba	Owned
CSN Cimentos Brasil..................	Aggregate	Aggregate	Brazil	São Paulo	Mairiporã	Owned
CSN Cimentos Brasil..................	Aggregate	Aggregate	Brazil	São Paulo	Cajamar	Owned
CSN Cimentos Brasil..................	Aggregate	Aggregate	Brazil	São Paulo	Barueri	Owned
CSN Cimentos Brasil..................	Concrete plant	Concrete plant	Brazil	São Paulo	São José dos Campos	Third Parties
CSN Cimentos Brasil..................	Concrete plant	Concrete plant	Brazil	São Paulo	São Vicente	Owned
CSN Cimentos Brasil..................	Concrete plant	Concrete plant	Brazil	São Paulo	Guarujá	Owned
CSN Cimentos Brasil..................	Cargo Terminal and Concrete plant	Cargo Terminal and Concrete plant	Brazil	São Paulo	Santo André	Owned
Metalgráfica Iguaçu....................	Manufacture of metal packaging	Manufacture of metal packaging	Brazil	Paraná	Ponta Grossa	Owner
Metalgráfica Iguaçu....................	Manufacture of metal packaging	Manufacture of metal packaging	Brazil	Goiás	Goiânia	Third Parties
CEEE-G.....................................	PCH Capigui	Energy	Brazil	Rio Grande do Sul	Marau	Third Parties
CEEE-G.....................................	PCH Forquilha	Energy	Brazil	Rio Grande do Sul	Maximiliano de Almeida	Third Parties
CEEE-G.....................................	PCH Guarita	Energy	Brazil	Rio Grande do Sul	Erval Seco	Third Parties
CEEE-G.....................................	PCH Herval	Energy	Brazil	Rio Grande do Sul	Santa Maria do Herval	Third Parties
CEEE-G.....................................	PCH Ijuizinho	Energy	Brazil	Rio Grande do Sul	Eugênio de Castro	Third Parties
CEEE-G.....................................	PCH Ivaí	Energy	Brazil	Rio Grande do Sul	Júlio de Castilhos	Third Parties
CEEE-G.....................................	PCH Passo do Inferno	Energy	Brazil	Rio Grande do Sul	São Francisco de Paula	Third Parties
CEEE-G.....................................	PCH Santa Rosa	Energy	Brazil	Rio Grande do Sul	Santa Rosa	Third Parties
CEEE-G.....................................	PCH Toca	Energy	Brazil	Rio Grande do Sul	São Francisco de Paula	Third Parties
CEEE-G.....................................	UHE Canastra / PCH Bugres	Energy	Brazil	Rio Grande do Sul	Canela	Third Parties
CEEE-G.....................................	UHE Ernestina	Energy	Brazil	Rio Grande do Sul	Tio Hugo	Third Parties
CEEE-G.....................................	UHE Itaúba	Energy	Brazil	Rio Grande do Sul	Pinhal Grande	Third Parties
CEEE-G.....................................	UHE Jacuí (Leonel Brizola - Maia Filho)	Energy	Brazil	Rio Grande do Sul	Salto do Jacuí	Third Parties
CEEE-G.....................................	UHE Passo Real	Energy	Brazil	Rio Grande do Sul	Salto do Jacuí	Third Parties
CEEE-G.....................................	Reservatório Blang	Energy	Brazil	Rio Grande do Sul	São Francisco de Paula	Third Parties
CEEE-G.....................................	Reservatório Divisa	Energy	Brazil	Rio Grande do Sul	São Francisco de Paula	Third Parties
CEEE-G.....................................	Reservatório João Amado	Energy	Brazil	Rio Grande do Sul	Três Passos	Third Parties
CEEE-G.....................................	Reservatório Salto	Energy	Brazil	Rio Grande do Sul	São Francisco de Paula	Third Parties
CEEE-G.....................................	Sede administrativa Salto do Jacuí	Office	Brazil	Rio Grande do Sul	Salto do Jacuí	Third Parties
CEC...	Hydroelectric Plant	Hydroelectric Plant	Brazil	Santa Catarina	Ipuaçu	Third Parties
Brasil Central Energia	Small Hydroelectric Power Station	Small Hydroelectric Power Station	Brazil	Mato Grosso	Brasnorte	Third Parties
Santa Ana Energética..................	Small Hydroelectric Power Station	Small Hydroelectric Power Station	Brazil	Santa Catarina	Angelina	Third Parties

For information on environmental matters with respect to certain of the facilities described above, see "Item 8. Financial Information—8A. Consolidated Statements and Other Financial Information—Legal and Administrative Proceedings." In addition, for information on our plans to construct, expand and improve our facilities, see "—4B. Business Overview—Investments and Divestitures—Acquisition Activity" and note 21 to our audited consolidated financial statements included elsewhere in this annual report.

Item 4A. Unresolved Staff Comments

None.

Item 5. Operating and Financial Review and Prospects

The following discussion should be read in conjunction with our audited consolidated financial statements included elsewhere in this annual report.

5A. Operating Results

Overview

Brazilian Macroeconomic Scenario

As a company with most operations and a large portion of its sales in Brazil, we are affected by the general macroeconomic conditions in Brazil. The rate of economic growth in Brazil is important in determining our own growth capacity and results of operations.

The following table sets forth select Brazilian macroeconomic indicators for the periods indicated:

	Year ended December 31,		
	2020	**2021**	**2022**
GDP growth (contraction) rate	(4.1)%	4.6%	2.1%
Inflation (IPCA)[1]	4.5%	10.06%	5.79%
Inflation (IGP-M)[2]	23.1%	23.14%	17.78%
CDI[3]	2.8%	4.4%	12.4%
Appreciation (depreciation) of the *real* against the U.S. dollar (end of period)	(28.9)%	(7.3)%	10.1%
Exchange rate at the end of period (US$1.00)	R$5.197	R$5.580	R$5.217
Average exchange rate (US$1.00)	R$5.158	R$5.340	R$5.160
Unemployment rate[4]	13.1%	12.6%	9.3%

Sources: IBGE, Fundação Getúlio Vargas, Central Bank and CETIP.

(1) The IPCA is measured by the IBGE.

(2) The IGP-M is measured by the Fundação Getúlio Vargas.

(3) The Interbank Deposit Rate, or CDI, represents the average interbank deposit rate performed during a given day in Brazil (accrued as of the last month of the period, annualized).

(4) The unemployment rate (*Pesquisa Nacional por Amostra de Domicílios*) is measured by the IBGE.

Effects of Exchange Rate Fluctuations

Our export revenues are substantially denominated in U.S. dollars and our domestic revenues are denominated in Brazilian *reais*.

A significant portion of our cost of products sold is commoditized raw materials, the prices of which are denominated in U.S. dollars. The balance of our cost of products sold and our cash operating expenses (*i.e.*, operating expenses apart from depreciation and amortization) are denominated in *reais*.

The depreciation of the *real* against the U.S. dollar has the following effects on our results of operations:

- domestic revenues tend to be lower (in comparison with prior years), partially offset by an increase in foreign market sales;
- the impact of *real* denominated costs of products sold and operating costs tends to be lower; and
- financial expenses increase to the extent our exposure to U.S. dollar-denominated debt is not protected.

However, to the extent our future export transactions are hedged by our U.S. dollar denominated debt, we recognize our foreign exchange variation generated from debt used as a hedge instrument directly in net equity as other comprehensive income, which we charge against income at the time the future export transactions occur.

The appreciation of the *real* against the U.S. dollar has the following effects on our results of operations:

- foreign revenues tend to be lower (in comparison with prior years), partially offset by an increase in domestic market sales;
- the impact of *real* denominated costs of products sold and operating costs tends to be higher; and
- financial expenses decrease to the extent our exposure to U.S. dollar-denominated debt is not protected. However, to the extent our future export transactions are hedged by our U.S. dollar denominated debt, we recognize our foreign exchange variation generated from debt used as a hedge instrument directly in net equity as other comprehensive income, which we charge against income at the time the future export transactions occur.

The impact of fluctuations in the exchange rate of the *real* against other currencies on our results of operations can be seen in the "foreign exchange and monetary gain (loss), net" line in our income statement, although that amount is partially offset by the net financial income (expenses) attributable to the profit (or loss) on the derivative transactions of our foreign currency-denominated debt. In order to minimize the effects of exchange rate fluctuations, we may use derivative transactions, including currency swap and foreign currency option agreements. For a discussion on the possible impact of exchange rate fluctuations on our principal financial instruments and positions, see "Item 11. Quantitative and Qualitative Disclosures About Market Risk."

Effects of Inflation and Interest Rates

Inflation measured by the IPCA index was 4.5%, 10.1% and 5.8% in 2020, 2021 and 2022, respectively, and was 23.1%, 23.1% and 17.8%, respectively, as measured by the IGP-M index.

Inflation affects our financial performance by increasing our costs and expenses denominated in *reais* that are not linked to the U.S. dollar. Our cash costs and operating expenses are substantially denominated in *reais* and have tended to follow the Brazilian inflation ratio, because our suppliers and service providers generally increase or decrease prices to reflect Brazilian inflation. In addition, certain of our *real*-denominated debt is indexed to consider the effects of inflation. Under this debt, the principal amount is generally adjusted with reference to inflation indices. A significant portion of our *real*-denominated debt bears interest based on the CDI rate, which is partially adjusted for inflation. The CDI rate as of December 31, 2020, 2021 and 2022 was 2.8%, 4.4% and 12.4%, respectively.

Steel Market

In 2020, 2021 and 2022, our steel segment represented 55.2%, 62.8% and 66.1% of our net revenues, respectively, and 22.2%, 45.3% and 45.7% of our gross profit, respectively. In 2022, 70.2% of our steel revenues were from domestic sales in Brazil and 29.8% were from sales abroad, as compared to 71.1% and 28.9%, respectively, in 2021.

According to the WSA, global crude steel production was 1.83 billion tons in 2022, representing a decrease of 4.3% compared to 2021 and a decrease of 1.7% compared to 2020. In 2022, China was responsible for 1,013 million tons, or about 55%, of the global output, representing a decrease of 2.1% compared to 2021. India's crude steel production in 2022 was 124.7 million tons, representing an increase of 5.5% compared to 2021. In the European Union, production was 136.7 million tons in 2022, representing a decrease of 10.5% compared to 2021. In the United States, crude steel production was 80.7 million tons in 2022, representing a decrease of 5.9% compared to 2021.

According to IABr, domestic crude steel production was 34 million tons in 2022, or a 5.8% decrease as compared to 2021, while rolled steel output was 23.4 million tons in 2022, or a 9.2% decrease as compared to 2021.

Domestic steel product consumption in Brazil was 23.4 million tons in 2022, or a 10% increase compared to 2021, and domestic sales decreased 9.1% to 20.3 million tons. Annual imports to Brazil were 3.3 million tons, or a 32.9% decrease as compared to 2021, and exports increased 8.8%, from 11.0 million tons in 2021 to 11.9 million tons in 2022.

The WSA estimates that global steel demand, including China, totaled 1.797 billion tons in 2022, which represents a decrease of 2.3% as compared to 2021. Crude steel production decreased in 2022 in all regions of the world: South America by 5.0%, North America by 5.5%, European Union by 10.5% and Asia by 2.3%, in each case as compared to 2021.

Mining Market

In 2020, in the midst of the COVID-19 pandemic, China implemented a strong fiscal stimulus policy, principally in the infrastructure and housing sectors, which had a positive impact on the steel and iron ore market despite the otherwise struggling global company. In 2021, as developed countries began to see recovering macroeconomic conditions amid large stimulus packages, iron ore prices reached their highest level in more than ten years in the first half of 2021. Chinese annual iron ore imports decreased to 1.109 billion tons in 2022, as compared to 1.126 billion tons in 2021, while the global seaborne iron ore market decreased to 1.092 billion tons in 2022, as compared to 1.110 billion tons in 2021.

For more information regarding updates in the Chinese market, see “Item 3. Key Information—3D. Risk Factors—Risks Relating to Us and the Industries in Which We Operate—Adverse economic conditions in China and an increase in global iron ore production capacity could materially and adversely affect us.”

In 2020, 2021 and 2022, our mining segment represented 42%, 38% and 28% of our net revenues, respectively, and 65%, 47% and 41% of our gross profit, respectively. In 2022, 86% of our mining revenues came from exports and 14% from the domestic market, as compared to 83% and 17%, respectively, in 2021.

Cement Market

In 2020, 2021 and 2022, our cement segment represented 2.9%, 3.0% and 6.4% of our net revenues, respectively, and 1.9%, 2.4% and 6.4% of our gross profit, respectively.

Logistics and Energy Markets

The performance of our logistics and energy segments is directly related to the performance of our steel and mining segments. In 2020, 2021 and 2022, these segments represented an aggregate of 6.4%, 5.0% and 6.6% of our net revenues, respectively, and an aggregate of 4.6%, 3.4% and 6.7% of our gross profit, respectively. A material portion of the revenues in these segments is derived from our steel and mining operations, which utilize our logistics network and energy output.

Steel Market

Supply and Demand

Prices of steel are sensitive to (i) changes in worldwide and local demand, which in turn are affected by worldwide and country-specific economic cycles, and (ii) available production capacity. While the export price of steel (which is denominated in U.S. dollars or euros, depending on the export destination) is the spot price, there is no exchange trading of steel or uniform pricing. Unlike other commodity products, steel is not completely fungible due to wide differences in terms of size, chemical composition, quality and specifications, all of which impact prices. Many companies (including us) discount their list prices for regular customers, making actual transaction prices difficult to determine.

Historically, export prices and margins have been lower than domestic prices and margins because of the logistics costs, taxes and tariffs involved in exports, not all of which we can pass onto customers. The portion of our production that we export depends on domestic demand, exchange rate fluctuations and how favorable the prices that can be charged in the international markets are.

Product Mix and Prices

Our steel products fall into four categories: hot-rolled, cold-rolled, galvanized, coated (zinc coated, Al-Zn or painted) and tin mill (tin free steel and steel plate).

We forecast sales trends in both domestic and foreign markets monthly based on data from preceding months. We rely on our own information system to keep up with market developments in order to respond swiftly to fluctuations in demand.

We consider our flexibility in shifting between domestic and foreign markets, and our ability to monitor and optimize inventory levels in light of changing demand, as key to our success. The following table sets forth a break-down of our sales volume by product:

	Sales Volumes								
	Tons			% of Sales Volumes					
				In Market*			Total		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Domestic sales									
Hot-rolled	1,079	1,312	1,266	34%	41%	41%	23%	29%	29%
Cold-rolled	589	444	421	18%	14%	14%	13%	10%	10%
Galvanized	996	872	887	31%	27%	29%	21%	19%	20%
Tin plate	314	327	274	10%	10%	9%	7%	7%	6%
Long steel	225	221	227	7%	7%	7%	5%	5%	5%
Subtotal	**3,204**	**3,176**	**3,075**	**100%**	**100%**	**100%**	**69%**	**69%**	**70%**
Sales abroad									
Slabs	43	-	8	3%	0%	1%	1%	0%	0%
Hot-rolled	54	95	68	4%	7%	5%	1%	2%	2%
Cold-rolled	31	32	36	2%	2%	3%	1%	1%	1%
Galvanized	483	481	418	33%	34%	32%	10%	10%	10%
Tin plate	71	79	65	5%	6%	5%	2%	2%	1%
Long steel	765	740	719	53%	52%	55%	16%	16%	16%
Subtotal	**1,447**	**1,427**	**1,315**	**100%**	**100%**	**100%**	**31%**	**31%**	**30%**
Total sales									
Slabs	43	-	8				1%	0%	0%
Hot-rolled	1,134	1,407	1,334				24%	31%	30%
Cold-rolled	620	476	457				13%	10%	10%
Galvanized	1,479	1,353	1,305				32%	29%	30%
Tin plate	385	406	339				8%	9%	8%
Long steel	991	960	946				21%	21%	22%
Total	**4,651**	**4,603**	**4,389**				**100%**	**100%**	**100%**

*% of sales volume in the market means the participation of each product line in domestic sales and sales abroad.

As part of our strategy, we seek to increase the portion of our sales attributable to higher value-added coated products, particularly galvanized flat steel and tin plate products. Galvanized products are directed at the automotive, construction and home appliance industries. Tin plate products are used by the steel packaging market.

	Net Operating Revenues								
				% of net operating revenues					
				In Market*			Total		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
				(in thousands of R$)					
Domestic sales									
Hot-rolled	3,217	7,676	7,122	27%	36%	35%	19%	26%	24%
Cold-rolled	1,880	2,930	2,518	16%	14%	12%	11%	10%	9%
Galvanized	3,977	6,349	6,531	34%	30%	32%	24%	21%	22%
Tin plate	1,766	2,956	2,910	15%	14%	14%	11%	10%	10%
Long steel	611	1,126	1,065	5%	5%	5%	4%	4%	4%
Other products	270	362	441	2%	2%	2%	2%	1%	2%
Subtotal	**11,721**	**21,400**	**20,588**	**100%**	**100%**	**100%**	**71%**	**71%**	**70%**
Sales abroad									
Slabs	85	-	25	2%	0%	0%	1%	0%	0%
Hot-rolled	156	633	379	3%	7%	4%	1%	2%	1%
Cold-rolled	96	190	212	2%	2%	2%	1%	1%	1%
Galvanized	1,877	3,495	3,030	38%	40%	35%	11%	12%	10%
Tin plate	324	528	604	7%	6%	7%	2%	2%	2%
Long steel	2,245	3,699	4,371	46%	43%	50%	14%	12%	15%
Other products	98	147	132	2%	2%	2%	1%	0%	0%
Subtotal	**4,882**	**8,691**	**8,753**	**100%**	**100%**	**100%**	**29%**	**29%**	**30%**

	Net Operating Revenues								
				% of net operating revenues					
				In Market*			Total		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
	(in thousands of R$)								
Total sales									
Slabs	85	0	25	1%	0%	0%	1%	0%	0%
Hot-rolled	3,373	8,309	7,501	20%	28%	26%	20%	28%	26%
Cold-rolled	1,976	3,120	2,731	12%	10%	9%	12%	10%	9%
Galvanized	5,853	9,843	9,561	35%	33%	33%	35%	33%	33%
Tin plate	2,091	3,485	3,515	13%	12%	12%	13%	12%	12%
Long steel	2,856	4,824	5,436	17%	16%	19%	17%	16%	19%
Other products	369	510	573	2%	2%	2%	2%	2%	2%
Total	**16,603**	**30,091**	**29,341**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

*% of sales volume in the market means the participation of each product line in domestic sales and sales abroad.

Accounting for Mining Production Used in Our Steel Production

We are currently self-sufficient for the iron ore used in our steel production, except for pellets. We extract iron ore from our mines owned by CSN Mineração, which mines, in 2022, provided approximately 4.1 million tons of iron ore. We sell the remainder of our iron ore production to third parties in Brazil and abroad.

We record the cost of iron ore for our steel production on our income statement in cost of products sold at its extraction cost plus transport cost from the mine. In 2020, 2021 and 2022, these costs were R$1,430 million, R$2,939 million and R$1,488 million, respectively.

Critical Accounting Policies

We prepare our consolidated financial statements in accordance with IFRS, as issued by the IASB. In preparing our consolidated financial statements, we make estimates concerning a variety of matters, some of which are highly uncertain, and our estimates involve judgments we make based on the information available to us. For more information, see note 2.d to our audited consolidated financial statements included elsewhere in this annual report.

Recently Issued Accounting Pronouncements Not Adopted by Us

The standards, amendments to standards and IFRS interpretations issued by the IASB that are not yet effective and were not early adopted by us for the year ended December 31, 2022 are described in note 2.e. to our audited consolidated financial statements included elsewhere in this annual report.

Results of Operations

The following table presents certain financial information with respect to our results of operations for each of the years ended December 31, 2020, 2021 and 2022:

	Year ended December 31,			
	2020	2021	2022	2022(1)
	(in millions of R$, except per share data)			*(in millions of US$, except per share data)*
Net operating revenues	**30,064**	**47,912**	**44,362**	8,502
Cost of products sold	(19,125)	(25,837)	(31,054)	(5,952)
Gross profit	**10,939**	**22,075**	**13,308**	**2,550**
Operating expenses				
Selling	(2,004)	(2,372)	(2,576)	(494)
General and administrative	(505)	(588)	(674)	(129)
Equity in results of affiliated companies	72	183	238	46
Other expenses	(3,270)	(1,716)	(2,908)	(557)
Other income	482	2,958	253	48
Total	**(5,225)**	**(1,535)**	**(5,666)**	**(1,086)**
Operating income	**5,714**	**20,540**	**7,642**	**1,464**
Non-operating income (expenses), net				
Financial income	1,803	1,167	(78)	(15)

	Year ended December 31,			
	2020	2021	2022	2022[(1)]
	(in millions of R$, except per share data)			(in millions of US$, except per share data)
Financial expenses	(2,599)	(3,111)	(3,437)	(659)
(Loss) income before taxes	**4,918**	**18,596**	**4,127**	**790**
Income tax				
Current	(2,052)	(4,241)	(1,538)	(295)
Deferred	1,427	(759)	(421)	(81)
Net income (loss) for the period	**4,293**	**13,596**	**2,168**	**414**
Net income (loss) attributable to noncontrolling interest	**498**	**1,337**	**614**	117
Net income (loss) attributable to CSN	**3,794**	**12,259**	**1,554**	**297**
Basic earnings per common share	2.74926	8.90654	1.17108	0.22444
Diluted earnings per common share	2.74926	8.90654	1.17108	0.22444

(1) Translated solely for the convenience of the reader at the rate of R$5.218 to US$1.00, which was the U.S. dollar selling rate as of December 31, 2022, as reported by the Central Bank.

Year 2022 Compared to Year 2021

We maintain integrated operations in five business segments: steel, mining, logistics, cement and energy. We manage and control the performance of our various business segments considering our proportional interest in our jointly controlled entity, MRS, reflected in the figures presented below.

Our consolidated results for the years ended December 31, 2021 and 2022 by business segment are presented below:

	Year ended December 31, 2021							
	Steel	Mining	Port	Railway[(1)]	Energy	Cement	Corporate Expenses/ Elimination	Consolidated
	(in millions of R$)							
Net revenue								
Domestic market	21,400	3,114	311	1,839	223	1,430	(5,084)	23,234
Foreign market	8,691	14,929	-	-	-	-	1,058	24,678
Total net revenue	**30,091**	**18,043**	**311**	**1,839**	**223**	**1,430**	**(4,026)**	**47,912**
Cost of sales and services	(20,081)	(7,706)	(220)	(1,266)	(146)	(893)	4,475	(25,837)
Gross profit	**10,010**	**10,338**	**91**	**573**	**76**	**537**	**449**	**22,075**
Selling, general and administrative expenses	(1,159)	(351)	(34)	(135)	(32)	(191)	(1,057)	(2,959)
Other operating (income) expenses, net	(405)	(288)	(8)	58	41	(64)	1,907	1,242
Equity in results of affiliated companies	-	-	-	-	-	-	183	183
Operating result before net financial income (expenses) and taxes	**8,446**	**9,699**	**49**	**496**	**85**	**282**	**1,482**	**20,540**

(1) Railway logistics in our segment break-down includes our investee MRS, which is not consolidated in our audited consolidated financial statements and is reflected only in equity in results of affiliated companies.

	Year ended December 31, 2022							
	Steel	Mining	Port	Railway[(1)]	Energy	Cement	Corporate Expenses/ Elimination	Consolidated
	(*in millions of R$*)							
Net revenue								
Domestic market	20,588	1,700	308	2,312	293	2,820	(4,064)	23,957
Foreign market	8,753	10,825					827	20,405
Total net revenue	**29,341**	**12,525**	**308**	**2,312**	**293**	**2,820**	**(3,237)**	**44,362**
Cost of sales and services	(23,256)	(7,105)	(221)	(1,507)	(287)	(1,974)	3,296	(31,054)
Gross profit	**6,085**	**5,420**	**87**	**805**	**6**	**846**	**59**	**13,308**
Selling, general and administrative expenses	(1,314)	(352)	(33)	(153)	(44)	(386)	(967)	(3,250)
Other operating (income) expenses, net	(778)	(450)	(14)	34	39	(105)	(1,380)	(2,654)
Equity in results of affiliated companies							238	238
Operating result before net financial income (expenses) and taxes	**3,993**	**4,618**	**40**	**685**	**1**	**355**	**(2,051)**	**7,642**

(1) Railway logistics in our segment break-down includes our investee MRS, which is not consolidated in our audited consolidated financial statements and is reflected only in equity in results of affiliated companies.

Net Operating Revenues

Net operating revenues decreased R$3,549.9 million, or 7.4%, from R$47,912.0 million in 2021 to R$44,362.1 million in 2022, due to lower prices and a decrease in sales volume, mainly in our mining segment.

Net domestic operating revenues remained relatively stable at R$23,957.5 million in 2022, compared R$23,233.8 million in 2021.

Net revenues of exports and sales abroad decreased R$4,273.6 million, or 17.3%, from R$24,678.2 million in 2021 to R$20,404.6 million in 2022, due mainly to lower iron ore prices and a decrease in sales volume in our steel and mining segments.

Steel

Steel net operating revenues decreased R$750.4 million, or 2.5%, from R$30,091.4 million in 2021 to R$29,341.0 million in 2022. Sales volume decreased 4.6%, from 4,603.1 million tons in 2021 to R$4,391.7 million tons in 2022, which effects were partially offset by the increase of 2.4% in average steel prices. Steel net domestic operating revenues decreased by R$812.1 million, or 3.8%, from R$21,400.3 million in 2021 to R$20,588.2 million. Steel net revenues of exports and sales abroad remained relatively stable at R$8,752.8 million in 2022, as compared to R$8,691.3 million in 2021.

Mining

Mining net operating revenues decreased R$5,518.3 million, or 30.6%, from R$18,043.4 million in 2021 to R$12,525.1 million in 2022, due to a decrease of 24.7% in average iron ore prices. Sales volume remained stable, from 33.2 million tons in 2021 to 33.3 million tons in 2022. In 2022, iron ore production reached 33.7 million tons, which represented a 6.8% decrease over the same period in 2021, mainly due to heavy rain in the first quarter of 2022 and certain extraordinary maintenance measures, each of which affected our operations.

Logistics

In 2021, net operating revenues from railway logistics were R$1,839.3 million and net operating revenues from port logistics were R$311.0 million, while in 2022, net operating revenues from railway logistics were R$2,311.8 million and net operating revenues from port logistics were R$308.0 million. In 2022, port logistics handled 1,322 tons of steel products, 42 tons of general cargo, 62,000 containers and 918 tons of bulk. In 2022, average prices remained relatively stable, as compared to 2021.

Energy

Our net operating revenues from the energy segment increased R$70.2 million, or 31.5%, from R$222.8 million in 2021 to R$293.0 million in 2022, mainly due to a decrease in the volume of traded energy.

Cement

Our net operating revenues from the cement segment increased R$1,389.4 million, or 97.2%, from R$1,430.2 million in 2021 to R$2,819.6 million in 2022, mainly due to a 53.9% increase in sales volume. A portion of this increase in sales volume was due to our consolidation of LafargeHolcim (Brasil) S.A.'s operations as of September 2022.

Cost of Products Sold

Cost of products sold increased R$5,216.5 million, or 20.2%, from R$25,837.5 million in 2021 to R$31,054.0 million in 2022, mainly due to an increase in the prices of certain raw materials in our steel and cement segments, which effects were partially offset by a decrease in iron ore prices in our mining segment.

Steel

Steel costs of products sold increased R$3,175.3 million, or 15.8%, from R$20,081.0 million in 2021 to R$23,256.3 million in 2022, mainly due to an increase in the prices of certain raw materials, mainly coal and coke, which effects were partially offset by a decrease in iron ore prices.

The following table sets forth a breakdown of our steel production costs in the periods presented. Except for coal and coke, which we import, and certain metals (such as aluminum, zinc and tin) with domestic prices linked to international prices, our production costs are mostly denominated in *reais*.

	2021		**2022**		**Variation 2022 v. 2021**	
	(in millions of R$)	*(in R$/ton)*	*(in millions of R$)*	*(in R$/ton)*	*(in millions of R$)*	*(in R$/ton)*
Raw materials	**12,982**	**3,080**	**13,410**	**3,596**	**428**	**516**
Iron ore	2,939	697	1,488	399	(1,451)	(298)
Coal	1,279	303	2,433	652	1,154	349
Coke	3,518	835	4,367	1,171	849	336
Metals	891	211	988	265	98	54
Outsourced slabs	956	227	840	225	(117)	(2)
Pellets	2,461	584	2,120	596	(341)	(15)
Scrap	219	52	221	59	2	7
Other	718	170	952	255	234	85
Labor	**943**	**224**	**987**	**265**	**44**	**41**
Other production costs	**3,853**	**914**	**4,691**	**1,258**	**837**	**344**
Energy / fuel	1,364	324	1,768	474	404	150
Services and maintenance	813	193	930	249	117	56
Tools and supplies	500	119	633	170	133	51
Depreciation	774	184	966	259	192	75
Other	402	95	394	106	(8)	11
Total	**17,778**	**-**	**19,088**	**-**	**1,310**	**-**

Mining

Our mining costs of products sold decreased R$600.4 million, or 7.8%, from R$7,705.8 million in 2021 to R$7,105.4 million in 2022, mainly due a decrease in iron ore prices, which decreased the cost of iron ore purchased from third parties and other costs indexed to these prices, such as the Brazilian government's royalty (*compensação financeira pela exploração mineral* – CFEM) and port logistics.

Logistics

Cost of services attributable to our logistics segment increased R$240.9 million, or 16.2%, from R$1,486.6 million in 2021 to R$1,727.5 million in 2022, mainly due to adjustments in fuel prices.

Energy

Cost of products sold attributable to our energy segment increased R$141.0 million, or 96.3%, from R$146.3 million 2021 to R$287.3 million in 2022, mainly due to an increase of 20 MWavg in the volume of contracted energy and to contractual readjustments applied to purchase prices.

Cement

Cost of products sold attributable to our cement segment increased R$1,081.5 million, or 121.1%, from R$892.9 million in 2021 to R$1,974.4 million in 2022, mainly due to an increase in raw material costs and a 53.9% increase in sales volume.

Gross Profit

Gross profit decreased R$8,766.5 million, or 39.7%, from R$22,074.6 million in 2021 to R$13,308.1 million in 2022, due to a decrease in our net operating revenues and an increase in our cost of products sold, as discussed above.

Steel

Gross profit in the steel segment decreased R$3,925.7 million, or 39.2%, from R$10,010.4 million in 2021 to R$6,084.7 million in 2022, due to the reasons discussed above.

Mining

Gross profit in the mining segment decreased R$4,917.8 million, or 47.6%, from R$10,337.6 million in 2021 to R$5,419.7 million in 2022, due to the reasons discussed above.

Logistics

Gross profit in the logistics segment increased R$228.5 million, or 34.4%, from R$663.7 million in 2021 to R$892.2 million in 2022, due to the reasons discussed above.

Energy

Gross profit in the energy segment decreased R$70 million, or 1,166.7%, from R$76.4 million in 2021 to R$5.7 million in 2022, due to the reasons discussed above.

Cement

Gross profit in the cement segment increased R$308 million, or 36.4%, from R$537.3 million in 2021 to R$845.1 million in 2022, due to the reasons discussed above.

Selling, General and Administrative Expenses

Selling, general and administrative expenses increased R$290.5 million, or 9.8%, from R$2,959.4 million in 2021 to R$3,249.9 million in 2022. Selling expenses increased R$203.5 million, or 8.6%, from R$2,372.3 million in 2021 to R$2,576.8 million in 2022, mainly due to a decrease in volume sold pursuant to cost, insurance and freight – CIF agreements, which effects were partially offset by an increase in average freight rates. General and administrative expenses increased R$87.0 million, or 14.8%, from R$587.1 million in 2021 to R$674.1 in 2022.

Other Operating Income (Expenses)

Other operating income (expenses) varied R$3,896.9 million, from a net operating income of R$1,242.3 million in 2021 to a net operating expense of R$2,654.8 million in 2022.

Other operating income decreased R$2,705.2 million, from R$2,958.4 million in 2021 to R$253.2 million in 2022, mainly due to R$2,472.5 million in proceeds from our sale of part of our equity interest in CSN Mineração in the context of its initial public offering in 2021.

Other operating expenses increased R$1,191.8 million, or 69.5%, from R$1,716.0 million in 2021 to R$2,907.8 million in 2022, mainly due to R$925.6 million in realization of hedge accounting, R$84.4 million in idle capacity in our mining segment, R$205.7 million in demurrage in our steel segment, R$184.3 million in write-offs relating to certain legal proceedings and R$88.2 million in inventory losses, which effects were partially offset by R$388.0 million in fair value reversal of an impairment relating to TLSA.

Equity in Results of Affiliated Companies

Equity in results of affiliated companies increased R$55 million, or 23.1%, from a gain of R$183 million in 2021 to a gain of R$238 million in 2022, mainly due to an increase in the net income of our investee MRS.

Operating Income

Operating income decreased R$12,898.5 million, or 62.8%, from R$20,540.0 million in 2021 to R$7,641.5 million in 2022, due to the reasons discussed above.

Net Financial Income (Expenses)

Net financial expenses increased R$1,570.8 million, or 80.8%, from R$1,944.2 million in 2021 to R$3,515.0 million in 2022, mainly due to (i) R$1,583.5 million in losses on our shares in Usiminas, (ii) R$501.0 million in interest expense on borrowings, financing and debentures, and (iii) R$317.8 million in interest expenses on drawn/forfaiting risk operations, which effects were partially offset by (x) an increase of R$737.7 million in foreign exchange results and (y) an increase of R$483.8 million in gains on financial investments.

Income Taxes

Income tax expense in Brazil refers to federal income tax and social contribution. The statutory rates for these taxes applicable to the periods presented were 25% for federal income tax and 9% for social contribution. Adjustments are made to income in order to reach the effective tax expense or benefit for each fiscal year. As a result, our effective tax rate is volatile among fiscal periods.

At statutory rates, we had an expense for income tax and social contribution of R$6,322.6 million in 2021 and R$1,403.0 million in 2022, which represents 34% of our income before taxes. After adjustments to meet the effective income tax rates, we recorded an expense for income tax and social contribution of R$5,000.2 million in 2021 and R$1,978.8 million in 2022. Expressed as a percentage of pretax income, our effective income tax rate was 26.9% in 2021 and 47.5% in 2022. In 2022, in order to meet the effective income tax rate, we had a negative net adjustment of R$555.7 million, mainly due to a negative impact of R$338.3 million in tax on the results of subsidiaries at different rates or not taxed and R$195.1 million in transfer pricing adjustments and profits outside of Brazil.

It is not possible to predict future adjustments to federal income tax and social contribution statutory rates, as they depend on interest on shareholders' equity, tax incentives and non-taxable factors, including income from offshore operations and tax losses from offshore operations.

For further information, see note 18.a to our audited consolidated financial statements included elsewhere in this annual report.

Net Income for the Year

In 2022, we recorded net income of R$2,167.7 million, as compared to R$13,595.6 million in 2021. The decrease of R$11,428 million, or 527.1%, was due to the reasons discussed above.

Year 2021 Compared to Year 2020

For this discussion, see our annual report on Form 20-F for the fiscal year ended December 31, 2021, filed with the SEC on May 17, 2022.

Reconciliation of Net Income for the Year to EBITDA

	Year ended December 31,			
	2020	**2021**	**2022**	**2022[1]**
		(in millions of R$)		*(in millions of US$)*
Net income	4,292.6	13,595.6	2,167.7	415.4
Depreciation/amortization/depletion	2,421.5	2,114.7	2,792.8	535.2
Income tax and social contribution	625.5	5,000.1	1,958.7	375.4
Net financial income	796.3	1,944.2	3,515.0	673.6
EBITDA[2]	**8,135.9**	**22,654.6**	**10,434.2**	**1,999.7**

(1) Translated solely for the convenience of the reader at the rate of R$5.218 to US$1.00, which was the U.S. dollar selling rate as of December 31, 2022, as reported by the Central Bank.

(2) We calculate EBITDA as net income (loss) for the period *plus* net financial income (expenses), income tax and social contribution, depreciation and amortization and results from discontinued operations.

For more information on our presentation of the non-IFRS measure of EBITDA, see "Presentation of Financial and Other Information—Non-IFRS Financial Measure."

5B. Liquidity and Capital Resources

Overview

Our main uses of funds are capital expenditures and debt repayments. We have historically met these requirements with cash generated by our operating activities and through the issuance of short and long-term debt instruments. In 2022, we met our cash needs primarily through a combination of operating cash flow, cash and cash equivalents on hand and newly issued long-term debt instruments in order to repay the portion of our total debt maturing in 2022.

In addition, we periodically review acquisition and investment opportunities and, if a suitable opportunity arises, we conduct selected acquisitions and investments to implement our business strategy. We generally make our investments directly or through subsidiaries, jointly controlled entities or affiliated companies, and fund these investments through internally generated funds, the issuance of debt or a combination of these.

Sources of Funds and Working Capital

Cash Flows

Cash and cash equivalents decreased to R$11,991 million as of December 31, 2022, as compared to cash and cash equivalents of R$16,646 million as of December 31, 2021.

Operating Activities

Cash provided by operating activities decreased R$12,750.5 million, or 624.1%, from R$14,793.3 million in 2021 to R$2,042.7 million in 2022, mainly due to the R$11,427.9 million decrease in our net income, adjusted by R$2,945.1 million in certain reconciling items that do not represent cash receipts or disbursements, such as the positive change of R$1,788.3 million in the fair value of our Usiminas shares, reflected in our net income that did not affect our cash provided by operating activities, as well as depreciation and amortization expenses, deferred income taxes, foreign exchange variations and minor other changes that, in the aggregate, amount to R$1,315.7 million. In addition, in 2021, we adjusted by R$2,472.5 million the gains on our sale of part of our interest in CSN Mineração in the context of its initial public offering.

Additionally, we had net changes in certain operating assets and liabilities, including a decrease of R$2,613.8 million in trade receivables, a decrease of R$213.2 million in taxes recoverable, a decrease of R$3,726.9 million in taxes payable, a decrease of R$177.8 million in interest payments and a decrease of R$4,199.7 million in suppliers, which effects were partially offset by an increase of R$5,617.1 million in inventories and an increase of R$476.0 million in advance of customers, as well as a decrease of R$77.0 million as settlement of our Platts iron ore index hedge and our receipt of R$370.0 million pursuant to a compulsory loan.

Investing Activities

Cash used in investing activities was R$11,455.5 million in 2022 and cash provided by investing activities was R$447.9 million in 2021. The increase of R$11,902.5 million in cash used in investing activities was mainly due to payments of R$8,547.3 million to acquire equity interests in certain companies (see "Item 4. Information on the Company—4B. Business Overview—Investments and Divestitures—Acquisition Activity"), R$487.5 million to acquire certain property, plant and equipment and R$366.4 million in the context of other acquisitions. These effects were partially offset by our receipt of cash and equivalents in the amount of R$1,205.7 million in the context of these acquisitions. Additionally, in 2021, we received R$3,164.6 million in gains on our sale of part of our equity interest in CSN Mineração in the context of its initial public offering.

Financing Activities

Cash provided by financing activities was R$4,747.0 million in 2022 and cash used by financing activities was R$8,529.8 million in 2021. This increase of R$13,277 million in cash provided by financing activities was mainly due to (i) a decrease of R$6,856.3 million in debt amortization payments in 2022, as compared to 2021 and (ii) an increase of R$7,342.4 million in new borrowings, financing and debentures. These effects were partially offset by (x) an increase of R$466.2 million in dividends and interest on shareholders' equity paid in 2022, as compared to 2021 and (y) R$1,347.9 million in cash provided by financing activities in 2021 in the context of CSN Mineração's initial public offering.

Trade Accounts Receivable Turnover Ratio

Our trade accounts receivable turnover ratio, which is the ratio between our trade accounts receivable and our net operating revenues, measured in days of sales, was 23 days, 20 days and 23 days as of December 31, 2020, 2021 and 2022, respectively.

Inventory Turnover Ratio

Our inventory turnover ratio, which we measure by dividing our inventories by our annualized cost of products sold, measured in days of cost of products sold, was 64 days, 140 days and 143 days as of December 31, 2020, 2021 and 2022, respectively.

Trade Accounts Payable Turnover Ratio

Our trade accounts payable turnover ratio, which we measure by dividing our trade accounts payable by our cost of products sold, measured in days of cost of products sold, was 94 days, 134 days and 119 days as of December 31, 2020, 2021 and 2022, respectively. This extension in payment terms reflects our renegotiation of commercial terms with our suppliers and contractors.

Liquidity Management

Given the capital intensive and cyclical nature of our industry and the generally volatile Brazilian macroeconomic environment, we retain cash on hand to run our operations and to meet our short-term financial obligations. As of December 31, 2022, cash and cash equivalents were R$11,991 million, as compared to R$16,646 million as of December 31, 2021 and R$9,945 million as of December 31, 2020.

As of December 31, 2022, our short-term and long-term indebtedness accounted for 12.7% and 87.3%, respectively, of our total debt, and the average life of our existing debt was equivalent to approximately 63 months.

Capital Expenditures and Investments

In 2022, we had capital expenditures and investments of R$3,413 million, mainly as follows:

- R$1,425 million in our steel segment: productivity and modernization projects to improve performance, including major overhauls of coke batteries, automation and efficiency improvements, maintenance and spare parts across all of our steel facilities.
- R$1,275 million in our mining segment: mining expansion projects, investments in tailings filtering and expansion of the Itaguaí port.
- R$400 million in our cement segment: sustaining projects in our Volta Redonda, Arcos, Alhandra, Pedro Leopoldo and Barroso units.
- R$313 million in our logistics and energy segments.

Debt and Derivative Instruments

As of December 31, 2021 and 2022, our total debt (composed of current and non-current portions of borrowings and financings) was R$32,508 million and R$40,919 million (including transactions costs), respectively, which represents and 139.1% and 187.6% of shareholders' equity as of December 31, 2021 and 2022, respectively. As of December 31, 2022, our short-term debt (comprising current borrowings and financings, which includes the current portion of long-term debt) was R$5,194 million and our long-term debt (comprising non-current borrowings and financings) was R$35,725 million.

As of December 31, 2022, approximately 38.3% of our debt was denominated in *reais* and substantially all of the remaining balance was denominated in U.S. dollars. Our policy is to protect ourselves against foreign exchange losses and interest rate losses on our debt, which we do through hedge accounting.

The following table sets forth our borrowings, financing and debentures, which we record at amortized cost:

	As of December 31, 2022	
	Current liabilities	**Non-current liabilities**
	(in thousands of R$)	
Debt agreements in the international market		
Variable interest:		
US$		
Prepayment	1,571	5,474
Fixed interest:		
US$		
Bonds, perpetual bonds, facility, CCE and ACC	1,190	16,790
EUR		
Facility	62	166
	2,823	**22,431**
Debt agreements in Brazil		
Variable interest:		
R$		
BNDES/FINAME, debentures, NCE and CCB	2,447	13,740
Total borrowings and financing	**5,270**	**36,171**
Transaction costs and issue premiums	(76)	(446)
Total borrowings and financing + transaction costs	**5,194**	**35,725**

For more information, see notes 13 and 14 to our audited consolidated financial statements included elsewhere in this annual report.

Debt Maturity Profile

In February 2022, CSN Resources S.A. issued US$500.0 million in aggregate principal amount of 5.875% senior notes due 2032, guaranteed by us. We used part of the proceeds from this issuance in our repurchase of US$300.0 million in aggregate principal amount of 2026 notes. In May 2022, CSN Mineração obtained a US$375.0 million syndicated loan, secured by the Italian export credit agency *Servizi Assicurativi del Commercio Estero* – SACE, with a 10-year maturity schedule. In June 2022, CSN Mineração issued non-convertible debentures in an aggregate principal amount of R$1,400.0 million. In the nine months ended September 30, 2022, CSN Cimentos obtained financings in an aggregate principal amount of R$2,500.0 million in order to complete its acquisition of LafargeHolcim (Brasil) S.A.

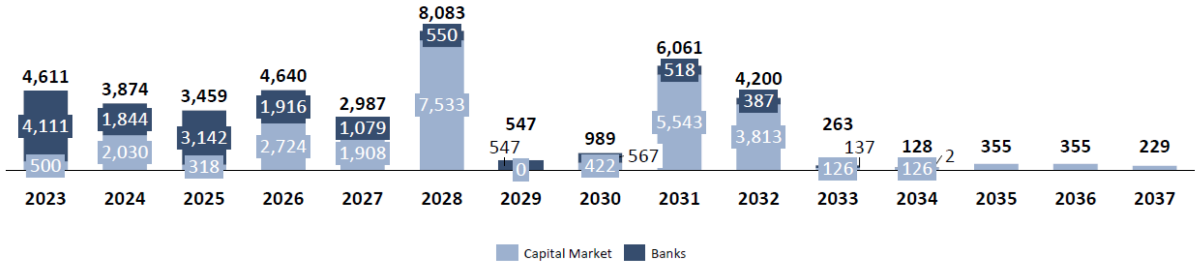
In October 2022, we issued non-convertible debentures, in a single series, in an aggregate principal amount of R$1,500.0 million. The debentures have a 62-month term and accrue interest at a rate of 100% of the average daily interbank rate (*depósito interfinanceiro*) *plus* 2.50% *per annum*. We used the net proceeds from this issuance to repay certain bank credit notes and for working capital.

In addition, in November 2022, we issued non-convertible debentures, in a single series, in an aggregate principal amount of R$460.0 million. The debentures have a five-year term and accrue interest at a rate of 100% of the average daily interbank rate (*depósito interfinanceiro*) *plus* 1.90% *per annum*. We used the net proceeds from this issuance in our acquisition of CEEE-G (see "Item 4. Information on the Company—4B. Business Overview—Investments and Divestitures—Acquisition Activity").

In December 2022, CEEE-G issued non-convertible debentures in an aggregate principal amount of R$1,900.0 million. The debentures have a two-year term and accrue interest at a rate of 100% of the average daily interbank rate (*depósito interfinanceiro*) *plus* 2.35% *per annum*. The debentures are fully guaranteed by us.

In December 2022, our subsidiary Companhia Metalúrgica Prada issued non-convertible debentures in an aggregate principal amount of R$130.0 million. The debentures have a two-year term and accrue interest at a rate of 100% of the average daily interbank rate (*depósito interfinanceiro*) *plus* 2.35% *per annum*. The debentures are fully guaranteed by us.

The following chart sets forth our debt maturity profile as of December 31, 2022 (amounts do not consider accrued interest, transaction costs or premiums on issuance):



The following table sets forth the maturity profile of our long-term debt as of December 31, 2022, gross of transaction costs and premiums on issuance:

Maturity	Principal Amount
	(in thousands of R$)
2023	5,270
2024	3,875
2025	3,459
2026	4,640
2027	2,988
After 2027	21,209
Total	**41,441**

We expect to fully pay, using cash flows from operating activities or new financings, or refinance the portions of our indebtedness due in 2023 to 2025.

For information on recent developments relating to our debt maturity profile, see "Item 4. Information on the Company—4A. History and Development of the Company—Recent Developments—Pre-Payment Export Financing Agreement."

Contractual Obligations

The following table presents our long-term contractual obligations as of December 31, 2022:

	Payment due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
			(in millions of R$)		
Contractual Obligations					
Long-term accrued finance charges[1]	14,3131,317	3,000,215	6,842,040	2,982,543	1,488,519
Taxes payable in installments	465	281	131	34	19
Long-term debt[2]	35,725,106	3,798,759	10,956,817	8,843,225	12,126,304
"Take-or-pay" contracts	7,305	3,112	3,838	277	78
Derivatives swap agreements[3]	169	0	11	0	158
Leasing agreements[4]	517	93	170	90	164
Purchase Obligations					
Raw materials[5]	9,138	7,978	1,160	-	-
Maintenance[6]	1,564	1,088	430	45	1
Utilities/fuel[7]	1,135	853	234	46	2
Total	**50,058,715**	**6,812,378**	**17,803,673**	**11,826,260**	**13,615,245**

(1) These accrued finance charges refer to the cash outflow related to the contractual interest expense of our long-term debt and were calculated using the contractual interest rates taken forward to the maturity dates of each contract.
(2) These amounts were presented net of transaction costs and issue premiums.
(3) Derivative swap agreements were calculated based on market prices as of December 31, 2022.
(4) Refers to TECON, TECAR and FTL concessions agreements.
(5) Refers mainly to purchases of coal, tin, aluminum and zinc, which comprise part of the raw materials for steel manufacturing and take-or-pay contracts.

(6) We have outstanding contracts with several contractors in order to maintain our plants in good operating condition; due to the strong demand for specialized maintenance service, the term of some of these contracts is for more than one year.
(7) Refers mainly to natural gas, power supply and cryogenics, which are provided by limited suppliers and with some of whom we maintain long-term contracts.

Off-Balance Sheet Arrangements

In addition to the debt that is reflected on our balance sheet, we have the following guarantees of debt of other companies and "take-or-pay" contractual obligations:

Guarantees of Debt

We guarantee 100% of the loans granted by BNDES and Banco do Nordeste/FNE to TLSA and 50.97% of the debentures held by FDNE and issued by TLSA. The aggregate principal amount outstanding under the loans and debentures guaranteed by us as of December 31, 2022 was R$3.6 million.

Under the TLSA Investment Agreement we and our partners, Valec and FDNE, agreed that if the construction of Northeastern Railway System II requires funds in addition to the budget agreed on, they will be provided by us or third parties under trackage right agreements.

"Take-or-Pay" Contractual Obligations

The following table sets forth our payment obligations under our "take-or-pay" agreements for the years presented:

	Payments in the period					
	2022	**2023**	**2024**	**2025**	**After 2025**	**Total**
			(*in thousands of R$*)			
Type of service						
Transportation of iron ore, coal, coke, steel products, cement and mining products	1,569	1,621	1,646	1,659	1,306	6,232
Supply of power, natural gas, oxygen, nitrogen, argon and iron ore pellets	2,191	1,618	1,424	331	741	4,113
Processing of slag generated during pig iron and steel production	84	54	8	-	-	62
Manufacturing, repair, recovery and production of ingot casting machine units	-	-	-	-	-	-
Oil storage and handling	3	3	1	-	-	4
Labor and consultancy services	33	34	34	26	130	224
Total	**3,880**	**3,330**	**3,112**	**2,016**	**2,177**	**10,635**

MRS

Following is a description of our take-or-pay contractual obligations under our outstanding agreements with MRS:

Transportation of Iron Ore, Coal and Coke to Volta Redonda

In 2022, the volume set for iron ore and pellets was 6.8 mkt and the volume set for coal, coke and other smelter products was 3.2 mkt, with a guarantee of payment of at least 85% of forecast annual revenue.

Transportation of Iron Ore for Export from Itaguaí

In 2022, the volume set for iron ore was 38.8 mkt, with a guarantee of payment of at least 85%. We may increase by up to 10% or decrease by up to 15% the volume set in the agreement every year, considering the volume informed in the previous year.

Transportation of Steel Products

The agreement covers the transportation of steel products from the Presidente Vargas Steelworks to third-party terminals and customers. In 2022, the volume set for steel products was 1.8 mkt, with a guarantee of payment of at least 80%.

Cement Transportation

This agreement covers transportation of bagged cement from the cement plant at Presidente Vargas to our terminals. In 2022, the volume set was 633.6 kt, with a guarantee of payment of at least 80%.

Ferrovia Centro Atlântica

Following is a description of our take-or-pay contractual obligations under our outstanding agreements with Ferrovia Centro Atlântica. The calculation of "take-or-pay" contracts with Ferrovia Centro Atlântico considers the total volume performed in clinker and limestone contracts, regardless of the percentage transported of each.

Transportation of Limestone

This agreement covers transportation of limestone from the city of Arcos to the city of Volta Redonda. In 2022, the volume set under this agreement was 1.8 mkt, with 100% of performance volume guaranteed.

Transportation of Clinker

This agreement covers transportation of clinker products from the city of Arcos to the city of Volta Redonda. In 2022, the volume set under this agreement was 660 kt, with 100% of performance volume guaranteed.

The calculation of amounts under our "take-or-pay" contracts with Ferrovia Centro Atlântico considers the total volume transported of clinker and limestone, regardless of the percentage transported of each.

Supply of Energy, Natural Gas, Oxygen, Nitrogen, Argon and Iron Ore Pellets

We also consume significant amounts of oxygen, nitrogen, hydrogen, argon and other gases at the Presidente Vargas Steelworks. These gases are supplied by a third party under a long-term contract from its gas production facilities located on the Presidente Vargas Steelworks site. To secure gas supply (oxygen, nitrogen and argon), in 1994, we signed a 22-year "take-or-pay" agreement with White Martins under which we are committed to acquire at least 90% of the gas volume guaranteed in the contract. Under the terms of the agreement, we are not required to advance funds raised against future processing charges if White Martins is unable to meet its financial obligations. Although the original term of the agreement ended in November 2016, White Martins continues to supply gas until we negotiate a new agreement.

5C. Research and Development, Patents and Licenses, Etc.

We have more than 70 years of research, development and innovation experience and were the first Brazilian steelmaker to produce coated and pre-painted steels. Innovation is a fundamental part of our strategy as a pioneer in process, product and commercial solutions in the businesses in which we operate. We remain committed to quality and a continuous search for initiatives that deliver greater added value to our customers and stakeholders.

CSN Inova, created in 2018, is our innovation-focused subsidiary and we also have an active research and development center. CSN Inova is responsible for systematizing and leading the innovation process in an organized and broad manner in each of our business segments, including by hiring startups and connecting with universities and innovation hubs. Following are CSN Inova's innovation pillars: (i) process optimization and operational efficiency; (ii) new revenue sources; and (iii) culture and sustainability. Together with each business area, CSN Inova implements short-, medium- and long-term projects that introduce new methodologies to solve our challenges, including production updates and new materials, and to support our digital transformation, make the most of our assets and seize new business opportunities.

CSN Inova has four areas with integrated innovation initiatives: (i) CSN Inova Open, which diagnoses our challenges and tests and scales technology-based solutions to address them; (ii) CSN Inova Ventures, which generates shared value with investments in startups; (iii) CSN Inova Bridge, which leads the integrated management of our ESG-focused innovation initiatives; and (iv) CSN Inova Tech, which conducts our path toward decarbonization, monitors technological trends, develops relationships with leading academic, science and technology centers, and implements innovative projects in our production processes.

In 2022, CSN Inova Tech evaluated multiple technologies to apply to our project portfolio, principally for the processing of steel slag and the production of pellets and cold agglomerated briquettes that do not require the use of fossil fuels. CSN Inova Tech constantly monitors technological trends and developments in the industry sectors in which we operate.

In addition, in 2022, of the 55 ongoing initiatives of the CSN Inova's portfolio, 21 were in the planning phase, 23 were piloted and 11 were being scaled. Moreover, CSN Inova Ventures ended 2022 with eight companies in its portfolio, with investments made through contributions between R$1.0 million and R$10.0 million, with new contributions expected to be made throughout 2023. Furthermore, as of the constitution of our ESG Committee in February 2021, CSN Inova Ventures has consolidated itself as one of the first corporate venture capital vehicles in the world. The integration of CSN Inova Ventures' activities into the socio-environmental transition strategy contributes to our ability to accelerate our sustainability agenda.

5D. Trend Information

Recent global developments relating to Russia's conflict with Ukraine have generated significant uncertainty in global trade and volatility in commodities markets. As of the date of this annual report, the only impact on our operations that we have identified in 2022 has been an increase in certain raw materials prices and our ongoing search to replace Russian coal supply. Consequently, as of the date of this annual report, we have not identified risks to the continuity of our operations and have substantially maintained our operating assumptions unchanged. However, we cannot foresee the full extent of the potential impacts of this conflict or of related global developments that may significantly affect the industries in which we operate or our business.

In addition, uncertainty relating to developments in the Chinese economy has generated and we expect will continue to generate volatility in the global iron ore market in 2023. The restrictive policies imposed by the Chinese government as a measure to curb the impact of the spread of COVID-19, China's housing market crisis and energy rationing generated by a heat wave in the third quarter of 2022 affected industrial production and had a direct impact on the global price of iron ore. However, since the end of 2022, policies relating to economic stimuli and easing of restrictions relating to the global development have improved global expectations of the iron ore market.

In Brazil, despite the challenges that the rise in interest rates has brought to the real estate sector, the cement market has shown resilience, with infrastructure projects and structured construction helping to compensate for a decrease in the launch of new housing units and in informal construction projects. According to the Brazilian National Union of the Cement Industry (*Sindicato Nacional da Indústria do Cimento* – SNIC), cement sales reached 63,052 million tons in 2022, which represents a decrease of less than 3% compared to 2021. In addition, the Brazilian government elected in 2022 has expressed interest in strengthening housing programs for low income families, which we expect will provide important growth opportunities for our cement segment.

For more information, see "Item 3. Key Information—3D. Risk Factors—Risks Relating to Brazil—Developments and the perception of risk in other countries, especially other emerging market countries, may adversely affect the trading price of Brazilian securities, including our common shares and the ADSs," "Item 3. Key Information—3D. Risk Factors—Risks Relating to Us and the Industries in Which We Operate—We are exposed to substantial changes in commodities prices, including oil prices, which significantly affect the prices of our inputs and the prices of our products, and may adversely affect us" and "—Measures adopted by, or conflicts between, foreign governments could adversely affect us."

5E. Critical Accounting Estimates

Not applicable.

Item 6. Directors, Senior Management and Employees

6A. Directors and Senior Management

General

We are managed by our board of directors (*conselho de administração*), which consists of up to eleven members (one of whom is the chairperson), and our board of executive officers (*diretoria executiva*), which consists of two to nine executive officers (one of whom is the chief executive officer). In accordance with our bylaws (*estatuto social*), each director is elected for a term of two years by our shareholders at an annual shareholders' meeting. Our bylaws require our employees to be represented by one director on the board of directors. The members of our board of executive officers are appointed by our board of directors for a two-year term.

Our board of directors is responsible for setting general guidelines and policies for our business and our board of executive officers is responsible for the implementation of such guidelines and policies and for our day-to-day operations. As of the date of this annual report, our board of directors comprises one chairman and four members, and our board of executive officers comprises our chief executive officer and five executive officers.

Our board of directors holds at least six ordinary meetings per year and extraordinary meetings whenever necessary.

Our directors and executive officers as of the date of this annual report are:

Name	Position	Age(1)	First Elected on	Last Elected on
Board of Directors				
Benjamin Steinbruch	Chairman	69	April 23, 1993	April 30, 2021
Fabiam Franklin	Member	55	April 28, 2016	April 30, 2021
Yoshiaki Nakano	Member	78	April 29, 2004	April 30, 2021
Antonio Bernardo Vieira Maia	Member	63	April 30, 2013	April 30, 2021
Miguel Ethel Sobrinho	Member	76	April 26, 2019	April 30, 2021
Board of Executive Officers				
Benjamin Steinbruch	Chief Executive Officer	69	April 30, 2002	September 22, 2021
Marcelo Cunha Ribeiro	Chief Financial and Investor Relations Officer	45	September 29, 2017	September 22, 2021
David Moise Salama	Executive Officer	56	August 2, 2011	September 22, 2021
Luis Fernando Barbosa Martinez	Executive Officer	59	August 2, 2011	September 22, 2021
Alexandre de Campos Lyra	Executive Officer	61	March 2, 2023	March 2, 2023
Stephan Heinz Josef Victor Weber	Executive Officer	61	June 7, 2021	September 22, 2021

(1) Age as of the date of this annual report.

The next election for our board of directors is expected to take place in April 2023. The next election for our board of executive officers is expected to take place in September 2023.

Board of Directors

Following is a brief biography of the members of our board of directors:

Benjamin Steinbruch. Mr. Steinbruch has been a member of our board of directors since April 1993 and has held the position of chairman since April 1995 and of chief executive officer since April 2002. He is in charge of our mining, railways and institutional strategy. He also holds the position of chairman of the board of directors and executive officer of the companies that are directly or indirectly controlled by us. In the past five years, he has served as first vice president of the Federation of Industries of the state of São Paulo (*Federação das Indústrias do Estado de São Paulo*), or FIESP, member of FIESP's Superior Strategic Board, advisor to the Robert Simonsen Institute, chairman of the board of directors of Nacional Minérios S.A. (merged into CSN Mineração in 2015), TLSA and FTL. Mr. Steinbruch graduated from the Fundação Getúlio Vargas – FGV/SP Business School and specialized in marketing and finance also at Fundação Getúlio Vargas – FGV/SP.

Fabiam Franklin. Mr. Franklin is a member of our board of directors. He was a member of the board of directors of the Brazilian Association of Metallurgy and Mining (*Associação Brasileira de Metalurgia, Materiais e Mineração*) from 2015 to 2017. He also coordinated the CSN Financial Education Program from 2008 to 2017, and he has been working at the company as a production general manager since November 2002. Mr. Franklin graduated in metallurgical engineering from Universidade Federal Fluminense – UFF/RJ and specialized in reduction metallurgy at the McMaster University, Hamilton, Canada. He holds a master's in business management from Fundação Dom Cabral – Belo Horizonte/MG and a master's degree in economics from IBMEC.

Yoshiaki Nakano. Mr. Nakano has been a member of our board of directors since April 2004, and a member of our audit committee since June 2005, serving as chairman of the audit committee since October 2017. He also holds the position of member of the board of directors of the companies that are directly or indirectly controlled by us. In the past five years, Mr. Nakano was a professor of economics at Fundação Getúlio Vargas – FGV/SP and has served as director of the School of Economics of Fundação Getúlio Vargas – FGV/SP since 2003. He was also a member of the Economy Superior Council (*Conselho Superior de Economia* – COSEC) of FIESP/Instituto Roberto Simonsen and a board member of the Fundação de Amparo à Pesquisa do Estado de São Paulo – FAPESP, until 2015. Previously, Mr. Nakano served as Special Secretary for Economic Affairs in the Ministry of Finance and as Finance Secretary of the state of São Paulo. Mr. Nakano graduated in business administration from Fundação Getúlio Vargas and has a master's in business administration and a Ph.D. from Cornell University.

Antonio Bernardo Vieira Maia. Mr. Maia was elected member of our board of directors in April 2013 and has been a member of our audit committee since August 2013. He served as chairman of the audit committee from May 2014 to October 2017. He was also a member of our Financial Committee from October 2014 to December 2016. He graduated in business and public administration from Fundação Getúlio Vargas.

Miguel Ethel Sobrinho. Mr. Sobrinho has been a member of our board of directors since April 2019 and a member of our audit committee since May 2019. He also holds the position of member of the board of directors of the companies that are directly or indirectly controlled by us. He graduated in production engineering from the Polytechnical School of the University of São Paulo and holds a master's in business administration from the School of Economics and Administration of the University of São Paulo. He was a professor of project and investment analysis at the School of Economics and Administration of the University of São Paulo and member of the Curator Board and founder of the Administration Institute Foundation of the University of São Paulo.

Board of Executive Officers

Following is a brief biography of the members of our board of executive offers:

Benjamin Steinbruch. See "—Board of Directors."

Marcelo Cunha Ribeiro. Mr. Ribeiro was elected as an executive officer in September 2017, and is in charge of the treasury, controller, tax and accounting areas. He is our chief financial officer and, since March 2018, our chief investor relations officer. He is a member of the board of directors and an executive officer of the companies that are directly or indirectly controlled by us. Prior to joining us, Mr. Ribeiro was chief financial officer of St. Marche Group, vice president of finance and investor relations of Restoque Comércio e Confecções de Roupas S.A., chief financial officer of Grupo SBF (GP Investimentos Ltd.) and held other director positions at several companies. Mr. Ribeiro graduated in production engineering from the University of São Paulo and has a master's in business administration from Harvard Business School.

David Moise Salama. Mr. Salama was elected as an executive officer in August 2011 and is in charge of the real estate, insurance and credit areas. He has been with us since 2006, having acted as investor relations officer. He also holds the position of member of the board of directors and executive officer of the companies that are directly or indirectly controlled by us. Mr. Salama graduated in accounting and has a master's in business administration in finance, both from the School of Economics, Business and Accounting of the University of São Paulo. He complemented his academic education by attending the Oxford Advanced Management and Leadership Program of Saïd Business School at Oxford University, England, and the Harvard Law School Program on Negotiation at Harvard University.

Luis Fernando Barbosa Martinez. Mr. Martinez was elected as an executive officer and has been an effective member of August 2011. He is in charge of the commercial and logistics areas of the steel, cement and special sales segment. He has been with us since 2002, having previously acted as sales officer. He also holds the position of member of the board of directors and executive officer of the companies that are directly or indirectly controlled by us. Mr. Martinez graduated with a degree in Metallurgical Engineering from Instituto Mauá de Tecnologia, has a graduate degree in industrial management from the School of Production Engineering of the University of São Paulo and completed the Corporate Management Development Program at Alcan Aluminum Limited in Montreal, Canada. In addition, he is certified as an experienced board member by the Brazilian Institute of Corporate Governance (*Instituto Brasileiro de Governança Corporativa*), or the IBGC.

Alexandre de Campos Lyra. Mr. Lyra joined us as executive director in March 2023, and is responsible for the production area of our steel segment. From 1999 to 2022, Mr. Lyra held various positions at Vallourec Soluções Tubulares Brasil S.A., such as president from 2009 to 2022, vice-president from 2014 to 2022, member of the global management committee, director of operations, general manager of marketing and sales of industrial tubes and marketing superintendent. From 2016 to 2018, Mr. Lyra was president of IABr. Mr. Lyra holds a degree in metallurgical engineering and a master's degree in materials science, each from the Instituto Militar de Engenharia, and a PhD in metallurgy from the University of Aachen in Germany.

Stephan Heinz Josef Victor Weber. Mr. Weber joined us as executive officer in June 2021 and is responsible for investments. Before joining us, he served as chief executive officer of Scorpius Gold Brasil S.A., 3 Scorpius Gold Mineração S.A. and Brasil Calcarium S.A., from 2018 to 2021. He has also served, in Brazil and abroad, in companies in the steel and mining industry, including African Minerals, Anglo American and Rio Tinto. Mr. Weber holds a degree in metallurgical engineering from the Federal University of Ouro Preto and a master's degree in metallurgical engineering from the Federal University of Minas Gerais. In addition, he completed a program in global business from the Saïd Business School at Oxford University in the United Kingdom.

Indemnification of Officers and Directors

There is no provision for or prohibition against the indemnification of officers and directors under Brazilian law or our bylaws. Pursuant to Brazilian Corporate Law, officers are generally not individually liable for acts performed within the course of their duties. Subject to the terms of the indemnity agreements entered into by us and our directors and officers, we may indemnify, or maintain liability insurance covering, our directors, officers and certain key employees against liabilities incurred in connection with their respective positions with us.

6B. Compensation

In 2022, the total compensation paid by us to all members of our board of directors and board of executive officers for services in all capacities was R$43.6 million, which includes salaries, bonuses, profit sharing arrangements and benefits, such as medical care, pension plan contributions and life insurance, among others. In 2022, the aggregate compensation paid by us to all members of our fiscal council for services rendered was R$0.64 million.

See "—6D. Employees" for a brief description of our profit sharing arrangements.

6C. Board Practices

Fiscal Committee

Under Brazilian Corporate Law, shareholders may request the appointment of a fiscal committee (*conselho fiscal*), which is a corporate body independent of management and our external auditors. The primary responsibility of the fiscal committee is to monitor management's activities, review financial statements and report findings to shareholders. As of the date of this annual report, we have a fiscal committee in place, which was most recently elected by our annual shareholders' meeting in April 2022, with a term until our next annual shareholders' meeting in April 2023. Our fiscal committee comprises three effective members and three alternate members, of which one effective member and the respective alternate were appointed by our minority shareholders.

The members of our fiscal committee as of the date of this annual report are:

Name	Position	Age(1)	First Elected on	Last Elected on
Angélica Maria de Queiroz	Chairwoman	65	June 29, 2018	April 29, 2022
Valmir Pedro Rossi	Member	61	April 30, 2020	April 29, 2022
André Coji	Member	58	June 29, 2018	April 29, 2022

(1) Age as of the date of this annual report.

Following is a brief biography of the members of our fiscal committee:

Angélica Maria de Queiroz. Ms. Queiroz has been the chairwoman of our fiscal committee since February 2022 (she was an alternate member since June 2018). Initially, Ms. Queiroz held the position of alternate member and after replacement of a titular member, she become an effective member. She is an associate director of the Brazilian Public Policy Debate Center (*Centro de Debate de Políticas Públicas* – CDPP) and has been a member of the advisory board of the Brazilian Institute of Management and Turnaround (*Instituto Brasileiro de Gestão e Tecnologia* – IBGT) since 2005, a founding partner of Clear Horizon in 2002, a strategy consultant for national and international companies (focused on supply and distribution, production, sales and finance) and member of the fiscal committee of the non-governmental organization Américas Amigas. Ms. Queiroz was an independent consultant for our audit committee from 2011 to 2017. She holds a degree in economic sciences from the Pontifical Catholic University of Rio de Janeiro and a postgraduate degree in finance from Fundação Getúlio Vargas in Rio de Janeiro.

Valmir Pedro Rossi. Mr. Rossi has been a member of our fiscal committee since April 2020. In the last five years, Mr. Rossi worked as an accountant at Casfor Org. Contábeis and Bertol S.A. and as a consultant at Sebrae RS. He also worked for 30 years at Banco do Brasil S.A. and was president of Banco da Amazônia S.A., a publicly traded federal bank headquartered in Belém. Mr. Rossi graduated in accounting from the University of Passo Fundo, with a postgraduate degree in finance from the University of Caxias do Sul and in marketing from PUC Rio de Janeiro and has a Master's in business administration from the University of São Paulo and in business management from UNB-Brasília.

André Coji. Mr. Coji has been a member of our fiscal committee since June 2018. In the last five years, Mr. Coji served as an effective member of the board of directors of Via Varejo S.A. and he was treasury director for a non-profit organization, Unibes, and a member of the advisory board of several Brazilian families, responsible for asset management, fiscal planning, tax and succession planning. Mr. Coji graduated in business administration from Fundação Getúlio Vargas and in law from the University of São Paulo. He has also a board of directors' certificate from the IBGC.

Audit Committee

In June 2005, we appointed an audit committee (*comitê de auditoria*), which comprises independent members of our board of directors with a term of office of two years, with reelection permitted. Our audit committee is responsible for recommending to our board of directors the appointment of independent auditors, reporting on our auditing policies and our annual audit plan prepared by our internal auditing team, as well as monitoring and evaluating the activities of our independent auditors. Our audit committee has also been tasked with identifying, prioritizing and submitting actions to be implemented by our executive officers, analyzing our annual report and financial statements and making recommendations to our board of directors. Our audit committee comprises Mr. Yoshiaki Nakano, Mr. Antonio Bernardo Vieira Maia and Mr. Miguel Ethel Sobrinho. Our audit committee may also be assisted by an external consultant, whenever necessary. All members of our audit committee satisfy the audit committee membership independence requirements set forth by the SEC and the NYSE. All members of our audit committee have been determined by our board of directors to qualify as an "audit committee financial expert" within the meaning of the rules adopted by the SEC relating to the disclosure of financial experts on audit committees in periodic filings pursuant to the Exchange Act.

Our audit committee holds at least one ordinary meeting every three months and extraordinary meetings whenever necessary.

For information on the date of election and term of office of the members of our board of directors and board of executive officers, see "—6A. Directors and Senior Management."

Service Contract

We permit our directors to continue to participate in our employee pension plan after ceasing to be a director.

6D. Employees

As of December 31, 2020, 2021 and 2022, we had 23,196 and 24,660, 26,766 employees, respectively. As of December 31, 2022, 4,051 of our employees were members of the Metalworkers Union of Volta Redonda, affiliated with Força Sindical, which is a national union. We believe we have a good relationship with Força Sindical. We have collective bargaining agreements, renewable annually in May of each year. In addition, we have members affiliated with other unions, such as the Engineers' Union, with five members, and the Camaçari Workers' Union, with a total of seven members. In all other companies controlled by us, including ERSA, CSN Mineração, FTL and TLSA, we have a total of 257 unionized employees.

We maintain an employee profit sharing plan. All employees participate in this plan and earn bonuses based on our consolidated results, on the results of our business units.

We are the main sponsor of a non-profit entity, *Caixa Beneficente dos Empregados da CSN*, created in July 1960, whose main objective is to pay benefits that complement the government's social security benefits to our former employees. As a sponsor, we carry out transactions involving the payment of contributions and recognition of actuarial obligations determined in defined benefit plans. For more information, see note 30 to our audited consolidated financial statements included elsewhere in this annual report.

6E. Share Ownership

The Steinbruch family, which includes Mr. Benjamin Steinbruch, our chairman and chief executive officer, holds an indirect majority ownership interest in Vicunha Aços S.A. and Rio Iaco Participações S.A., our controlling shareholders.

Our executive officers and the members of our board of directors directly held an aggregate of 101,502 of our outstanding common shares as of December 31, 2022.

6F. Disclosure of a Registrant’s Action to Recover Erroneously Awarded Compensation

Not applicable.

Item 7. Major Shareholders and Related Party Transactions

7A. Major Shareholders

In March 2023, the holding companies of our controlling shareholders underwent a reorganization, which did not result in a change of control. As of March 31, 2022, our capital stock comprised 1,326,093,947 common shares, each of which entitles its holder to one vote at our shareholders’ meetings. Our major shareholders do not have different voting rights from our other shareholders. For more information, see “Item 3. Key Information—3D. Risk Factors—Risks Relating to Our Common Shares and the ADSs—Our controlling shareholder has the ability to direct our business and affairs and its interests could conflict with yours.”

The following table sets forth, as of March 31, 2022, the number of our common shares owned by our major shareholders:

	Common Shares Shares Owned	Percent of Outstanding Shares
Vicunha Aços S.A.[1]	543,617,803	40.99%
Rio Iaco Participações S.A.[1]	45,706,242	3.45%
CFL Ana Participações S.A.	135,904,451	10.25%
Others	600,865,451	45.31%
Total	**1,326,093,947**	**100.00%**

(1) Owned indirectly by the Steinbruch family, which includes Mr. Benjamin Steinbruch, the chairman of our board of directors and our chief executive officer.

7B. Related Party Transactions

Our transactions with related parties consist of (i) transactions with subsidiaries, jointly controlled entities, associates, exclusive funds and other related parties; and (ii) transactions with other unconsolidated related parties.

Following is an overview of the types of related party transactions we enter into:

- Our commercial and financial transactions with our subsidiaries, jointly controlled entities, associates, exclusive funds and other related parties are carried out at market prices and under market conditions, based on common terms and rates applicable to third parties.
- We maintain relations with other unconsolidated related parties, which include, among others, CBS Previdência, Fundação CSN, Banco Fibra, Ibis Participações e Serviços Ltda., Partifib Projetos Imobiliários Ltda., Vicunha Imóveis Ltda., Vicunha Serviços Ltda.

In addition, we guarantee certain indebtedness of related parties. For more information, see “Item 5. Operating and Financial Review and Prospects—5B. Liquidity and Capital Resources—Off-Balance Sheet Arrangements—Guarantees of Debt.”

We maintain internal controls to detect, prevent and address potential conflicts of interest in our transactions, including those with related parties, in order to ensure that all transactions are appropriately documented, characterized and accounted for. Our related party transactions are subject to approval based on our best interest and market terms and conditions. For more information on our related party transactions, see note 22 to our audited consolidated financial statements included elsewhere in this annual report.

7C. Interests of Experts and Counsel

Not applicable.

Item 8. Financial Information

8A. Consolidated Statements and Other Financial Information

See our audited consolidated financial statements included elsewhere in this annual report.

Legal and Administrative Proceedings

In the ordinary course of our business, we are party to several administrative, judicial and arbitration proceedings, which we believe are incidental and arise out of our regular course of business. We have established provisions for all amounts in dispute that represent a probable risk of loss based on the legal opinion of our internal and external legal counsel. We have not established provisions for any amounts in dispute that represent a possible or remote risk of loss based on the legal opinion of our internal and external legal counsel. For more information, see "Item 3. Key Information—3D. Risk Factors—Risks Relating to Us and the Industries in Which We Operate—We are exposed to the risks of litigation."

Labor Contingencies

As of December 31, 2022, we and our subsidiaries were defendants in 10,290 labor claims, for which we recorded a provision of R$375.4 million. Most of these claims relate to alleged subsidiary and/or joint liability with respect to our independent contractors, salary equalization, health hazard premiums and hazardous duty premiums, overtime pay, health plan, indemnity claims resulting from other alleged occupational diseases or on-the-job accidents, breaks between working hours and differences in profit sharing from 1997 to 1999 and from 2001 to 2003.

We update our provisions for labor contingencies as a result of the closing of lawsuits and our constant revision of accounting estimates, which consider, among other factors, the nature of the claims involved.

Civil Contingencies

Our civil contingencies relate mainly to indemnity claims resulting from contractual disputes and collections, claims for damages and compensation related to our commercial and industrial activities and real estate disputes. As of December 31, 2022, we had recorded a provision of R$851 million for these civil contingencies.

Tax Contingencies

Our main tax contingency relates to a tax assessment notice involving R$14,174 million (as of December 31, 2022) issued against us for an alleged failure to submit to taxation a capital gain resulting from the alleged sale of 40% of our shares in former subsidiary Namisa (merged into our subsidiary CSN Mineração as of December 31, 2015) to the Asian Consortium. In May 2017, the São Paulo regional judgment office (*Delegacia Regional de Julgamento*), which is a lower administrative court, issued a decision cancelling the tax assessment notice. This decision was reversed and the tax assessment was upheld by the second level administrative court – the Administrative Board of Tax Appeals (*Conselho Administrativo de Recursos Fiscais*), or CARF. We have challenged the merits of the tax assessment at the judicial level before and obtained an injunction against any immediate assessment. In April 2018, a federal court of tax enforcement set aside a portion of our assets, including buildings, equipment, land, vehicles, fixtures and furniture, as collateral for our potential liability under this proceeding, which we replaced with certain other assets in 2020. At the end of 2019, the court issued a decision favorable to us and cancelled the CARF judgment at the administrative level due to legal nullities and, as of the date of this annual report, the case is pending final judgment by the second level judicial court. Our assessment remains that our risk of loss is possible.

This same tax assessment notice resulted in another contingency issued against Namisa (merged into our subsidiary CSN Mineração as of December 31, 2015) involving R$3,759 million, as of December 31, 2022. This tax assessment is for income tax and social contribution not paid due to allegedly improper goodwill amortization from 2008 to 2011. In May 2013, the São Paulo regional judgment office issued a decision favorable to us and cancelled the tax assessment notice, which decision was confirmed by CARF. After an appeal filed by the Federal Prosecutor's Office, the Superior Chamber of CARF reversed the decision and reinstated the tax assessment, but there remains a pending issue to be decided by the lower administrative authorities regarding the qualified penalty. We challenged the formal requirements of the Federal Prosecutor's Office's appeal at the judicial level. In 2020, we filed an annulment lawsuit to contest the merits of the tax assessment and entered into an agreement (*negócio jurídico processual*) that was approved by the court. Following the closing of the administrative proceeding, tax enforcement was ordered and, pursuant to the agreement we entered into, we will present certain collateral and installment payments.

In December 2018, another contingency related to allegedly improper goodwill amortization from 2013 to 2014 was issued against Namisa. This tax assessment demands the payment of income tax and social contribution involving approximately R$1,160 million, as of December 31, 2022. In June 2019, we filed our appeal to CARF, which issued a decision favorable to us in December 2019. This decision is subject to appeal to the Superior Chamber of CARF and the case is pending final judgment.

In addition, we received tax assessment notices in December 2015 and December 2016 for R$1,219 million and R$1,169 million as of December 31, 2022, respectively, for an allegedly improper deduction of interest expenses in pre-payment contracts between us and Namisa. With regards to the December 2015 tax assessment, after a partially favorable decision issued by CARF that reduced the amount of the tax assessment, we filed an annulment lawsuit to challenge to remainder of the tax assessment, which is suspended until a final judgment of the annulment lawsuit is rendered. With regards to the December 2016 tax assessment, we filed an annulment lawsuit to contest the tax assessment and the Federal Prosecutor's Office filed a tax enforcement. Both are pending court decision.

Antitrust

In October 1999, we received a fine from CADE claiming that certain practices adopted by us and other Brazilian steel companies before 1997 allegedly constituted a cartel. We challenged the cartel allegation and the imposition of the fine in court and, in June 2003, obtained a partially favorable decision by a federal trial court of first instance. CADE appealed the lower trial court decision and, in June 2010, a federal appellate court in Brasília reversed the lower trial court's decision and confirmed the cartel allegation, as well as the fine imposed by CADE in the amount of R$65 million. We appealed the decision of the appellate court to the Brazilian Superior Court of Justice, which upheld the ruling in favor of CADE. We subsequently appealed the decision of the Superior Court of Justice to Brazil's Supreme Court and, as of the date of this annual report, are awaiting a final decision. We have not recorded any provision in connection with this fine, as the risk of loss is classified as possible.

In April and July 2012, CADE issued certain injunctive orders limiting our ability to, among other things, increase our equity stake in Usiminas or exercise our voting rights with respect to the shares already owned. In April 2014, CADE issued its decision and a Performance Commitment Agreement (*Termo de Compromisso de Desempenho*), or TCD, was executed between CADE and us. Under the terms of CADE's decision and the TCD, we must reduce our equity stake in Usiminas within a specified timeframe. The timeframe and reduction percentages are confidential. Furthermore, our political rights in Usiminas would continue suspended until we reach the thresholds established in the TCD.

In March 2016, we applied to CADE to partially suspend the TCD so as to exercise certain rights, namely appointing independent directors and members of the fiscal committee, which request CADE granted and following which, at Usiminas' annual general shareholders' meeting in April 2016, we appointed two independent directors and one independent member of Usiminas' fiscal committee, as well as their respective alternates. The 2016 appointments are under litigation and, although there has been no judicial order overturning or otherwise suspending their effects, since 2016 we have been unable to appoint new members to Usiminas' fiscal committee. CADE denied our request for exception in April 2018. In 2019, CADE approved an amendment to the TCD, in order to establish a new timeframe for us to reduce our equity stake in Usiminas. In April 2021, we requested an additional extension of this timeframe and, in September 2022, CADE approved our request, which terms remain confidential.

Northeastern Railway System Proceedings

The TCU initiated proceedings in 2016 questioning the legality of the governmental authorizations for the segregation of the Northeastern Railway System into two sub-railway systems: Northeastern Railway System I (in operation by FTL) and Northeastern Railway System II (under construction by TLSA). According to the claim, the Brazilian federal government should have undergone a new bidding process to grant the concession for the construction of the new tracks of the Northeastern Railway System (Northeastern Railway System II).

We are unable to anticipate the outcome of this proceeding. The consequences of an unfavorable decision may include the loss by TLSA of the concession for Northeastern Railway System II, the imposition of additional investments in developing this sub-railway system and the acceleration of loans granted to TLSA, for which we are guarantors. See "Item 5. Operating and Financial Review and Prospects—5B. Liquidity and Capital Resources—Off-Balance Sheet Arrangements—Guarantees of Debt." In addition, even if we are entitled to any indemnification in connection with a termination of the TLSA concession agreement for our investments in developing Northeastern Railway System II, this indemnification may be insufficient to cover our costs, expenses or losses and may be paid long after a decision terminating the concession, if at all.

In the course of this proceeding, the TCU approved an injunction suspending further disbursements by government agencies, including the state-owned railway company Valec and FDNE, for the development of Northeastern Railway System II, which has adversely affected the pace of construction of the new tracks.

In 2019, we revised the engineering project for the development of Northeastern Railway System II and delivered an update regarding the completed and ongoing project phases in order to validate our budget and revise our schedule, which has not been altered since then.

Additionally, in 2013, ANTT initiated proceedings claiming that FTL did not meet certain transportation targets for the Northeastern Railway System I in 2013 and seeking to terminate the TAC executed by FTL that year, which had settled all claims of non-compliance by us with respect to the original concession agreement of the Northeastern Railway System until 2012. This proceeding resulted in the reopening of the administrative proceeding which began in 2012 for ANTT to evaluate the occurrence of any relevant breach to FTL's concession agreement.

Following a valuation conducted by ANTT, ANTT concluded that FTL did not comply with the TAC regarding its failure to meet 2013 production targets. ANTT recommended that the Brazilian federal government terminate the FTL concession agreement and initiate an administrative proceeding before the Superintendence of Infrastructure and Railroad Cargo Transport Services (*Superintendência de Infraestrutura e Serviços de Transporte Ferroviário de Cargas*). FTL has appealed this conclusion and recommendation and, as of the date of this annual report, is awaiting ANTT's response.

Furthermore, in 2017, ANTT also initiated proceedings claiming that TLSA did not comply with certain of its obligations arising from its concession agreement. ANTT's technical area and board, in a unilateral opinion, concluded that TLSA breached its contractual obligations under the concession agreement and recommended that the Brazilian federal government terminate TLSA's concession to operate the Northeastern Railway System II.

In September 2020, we filed a request for reconsideration and suspension of the injunction with the TCU. We requested that the TCU's understanding be revised in order for disbursements by government agencies to be immediately released or, alternatively, that disbursements by the government agency FINOR be immediately released. These disbursements would provide reimbursement of the amounts already proved to have been applied in the project, and which we understand are not subject to suspension by the TCU.

In July 2021, the ANTT approved a regulatory budget of R$8.9 billion, which amount was revised in December 2021, following a request for reconsideration, to R$10.8 billion.

In November 2022, after TCU determined the repeal of the injunction suspending further disbursements by government agencies. TLSA required and received R$70.0 million from FINOR and is negotiating the receipt the FDNE disbursement.

In December 2022, we entered into an amendment to the concession agreement of TLSA, pursuant to which, among other things, there was a change to the railroads granted to TLSA and we agreed to certain mandatory investments and to the conditions for the return of the Salgueiro – Porto de Suape's grid. This amendment represents an important step in the evolution of TLSA's operations, which will support our operations and the transportation of our products across the Northeast region of Brazil. Our subsidiary FTL operates Northeastern Railway System I. In July 2022 FTL filed a request for an early extension of the concession contract for another 30 years, based on compliance with the legal requirements and the goals established by ANTT regarding the volume of production and security.

In November 2022, after TCU determined the repeal of the injunction suspending further disbursements by government agencies, TLSA required and received R$70MM from FINOR, and are negotiating the receipt the FDNE disbursement, what do hope to happen in 2023.

Additionally, in December 2022, after long negotiations with ANTT, TCU and federal government leaders of Brazil about the continuity of the project and effective solutions for the problems, TLSA achieved excellent results with a signature the first amendment with the grantor of this concession of Northeastern Railway System II to redefine the project scope, which resulted in a project with prevision the current 1.206 km because devolution of stretches between Salgueiro – Porto Suape and a new finish construction deadline in December 2029.

About Northeastern Railway System I, which is in operation by our subsidiary FTL, the subsidiary filed in July 2022, the request for an Early Extension of the concession contract for another 30 years, which is based on compliance with the legal requirements and the goals established by ANTT regarding the volume of production and security. With the positive environment of negotiations for the concession contract, as well as the growth of FTL, the subsidiary considers imminent the early extension of the concession contract in order to definitively resolve the ANTT aforementioned suggestion to terminate TLSA's concession in advance.

Environmental Proceedings

Our main environmental contingencies comprise: (i) notices of alleged environmental infractions; (ii) annulment lawsuits arising from fines; and (iii) public civil actions. As of December 31, 2022, we had recorded an aggregate provision of R$37.3 million relating to these environmental contingencies.

Environmental Proceedings Related to Presidente Vargas Steelworks and Volta Redonda

In September 2018, we signed a TAC with the state of Rio de Janeiro through the Secretary of State for the Environment and Sustainability (*Secretaria de Estado do Ambiente e Sustentabilidade* – SEAS), INEA and the State Environmental Control Commission (*Comissão Estadual de Controle Ambiental* – CECA), with the commitment to carry out new studies and investments to update the environmental control equipment of Presidente Vargas Steelworks, thereby maintaining its full operations. In parallel, INEA issued an AAF, valid until October 2024, that authorizes the regular operations of Presidente Vargas Steelworks during its compliance with the TAC. The TAC contemplates investments of approximately R$303 million in environmental projects and actions in the region until August 2024 and represents our commitment to the sustainability of our activities and to the communities of Volta Redonda and the surrounding region.

In July 2012, the Rio de Janeiro State Prosecutor's Office filed a public civil action against us claiming that we must (i) remove all waste disposed in an area used as an industrial landfill in the city of Volta Redonda and (ii) relocate 750 residences located in the adjacent neighborhood Volta Grande IV Residential. In August 2013, the Federal Prosecutor's Office filed a judicial civil proceeding against us based on these same claims. In both cases, the court denied these requests but ordered that we present a timetable to investigate the area and, if necessary, to remediate the potential issues raised by the Rio de Janeiro State Prosecutor's Office. We presented a timetable considering the conclusion of all studies related to our investigation, including a risk assessment and intervention plan, which were concluded in April 2014. In January 2019, the Superior Court of Justice ordered that both lawsuits be decided by the federal court. We have also received, as of the date of this annual report, 51 notices for lawsuits brought by certain homeowners at Volta Grande IV Residential, claiming indemnification for alleged moral and material damages, and, in January 2020, an additional public civil action was filed against us relating to adverse health effects allegedly caused by water contamination from our operations. We presented our defense in October 2021 and the court ordered that this public civil action be ruled upon together with the prior proceedings.

In April 2013, INEA fined us R$35 million in relation to Volta Grande IV Residential, in response to which we filed an annulment action in January 2014 to the Tenth Public Treasury Court of the Capital District (Rio de Janeiro). INEA, in response, filed a fiscal execution action in May 2014 for enforcement of the fine. The fiscal execution action is suspended until judgment is rendered in the annulment action, which in turn is also suspended until the expert examination that will be carried out as part of the public civil action filed in 2012 by the Federal Prosecutor's Office.

In addition, we are defendants, together with certain current and former members of our management, in a criminal action alleging our failure to adopt precautionary measures required by INEA regarding the risk of environmental damage in the Volta Grande IV neighborhood in the city of Volta Redonda. This criminal action was dismissed at first instance and, as of the date of this annual report, awaits judgment by the court upon the appeal of the Federal Prosecutor's Office.

In July 2018, the Federal Prosecutor's Office and the Rio de Janeiro State Prosecutor's Office filed a public civil action against us, Harsco Metals Ltda. and INEA, for immediate removal of slag piles, owned by us and operated by Harsco Metals Ltda., in the city of Volta Redonda that adjoin the Paraíba do Sul River. The plaintiffs claim inadequate environmental control measures and lack of enforcement by INEA. Relief sought includes cleaning of the entire effluent collection chute, presentation of the volume of slag stored in the area, presentation of a project to control atmospheric emissions of slag piles and partial embargo of the activity, material damages and collective moral damages.

A preliminary injunction was granted to require us, Harsco Metals Ltda. and INEA to immediately limit the amount of slag received monthly, as well as the height of the piles at four meters. Any non-compliance with the preliminary injunction may result in fines of approximately US$600,000 per month. We filed an appeal against this preliminary injunction, which is pending a final decision.

Concerning other allegedly contaminated areas in Volta Redonda, the Federal Prosecutor's Office has filed three additional public civil actions for the environmental remediation and indemnification of certain areas, as well as for moral and material damages of residents of neighboring areas. These actions are in an early stage and, following our environmental studies to determine possible environmental damage and to ensure our compliance with all applicable laws, we presented our defense in each of these public civil actions.

In June 2015, the Federal Prosecutor's Office filed a public civil action against us, INEA and the state of Rio de Janeiro in the federal court in Volta Redonda seeking (i) suspension of our sintering activities at Presidente Vargas Steelworks, (ii) to have INEA abstain from renewing or granting any license to us until we comply with applicable law and (iii) moral and material damages allegedly caused by water and atmospheric pollution deriving from noncompliant operations. As of the date of this annual report, we have presented our defense and await the next steps in the proceeding.

Other Environmental Proceedings

In the late 1980s, the Federal Prosecutor's Office, the Rio de Janeiro State Prosecutor's Office and the Macaense Association filed four public civil actions against us for alleged environmental contamination and pollution of the Paraíba do Sul River, allegedly caused by our industrial activity in the area. The court ruled against us and demanded that we compensate the environmental damage caused. We appealed this decision to the Superior Court of Justice, which upheld our appeal and returned the proceeding to its initial stage in order to carry out expert investigations, which are still ongoing.

We are also party to two public civil actions filed against us by the Federal Prosecutor's Office and the Rio de Janeiro State Prosecutor's Office in the federal court of Volta Redonda seeking moral and material damages due to alleged environmental damage caused in the 1980s and 1990s by our use of certain landfills in Volta Redonda without the appropriate environmental license. One of these claims is in the approximate amount of R$300.0 million. In December 2021, after presenting our defense, the court ordered a conciliatory session to clarify technical matters relating to the environmental management of the area with INEA, as well as suspension of the proceedings pending completion of the environmental management schedule of the area, which is expected for mid-2023.

In 2009 and 2010, we signed agreements with the Public Prosecutor's Office regarding environmental liabilities caused by coal mining in the Southern Region of Santa Catarina until the 1990s. The environmental liabilities covered by the agreements include restoration of certain areas. Our compliance with the agreement was questioned in 2015 by the Public Prosecutor's Office, which may seek to impose fines, freeze our bank accounts or initiate a criminal investigation. In June 2018, we settled a new judicial agreement in order to extend the deadlines for this restoration. We expect to enter into a third agreement with government authorities and other parties involved in this claim in order to set cost-effective and functional standards for restoration.

In December 2019, the Public Prosecutor's Office filed a public civil action against TECON and INEA to suspend the environmental licensing process of TECON's container terminal until completion of the study on the environmental support capacity of the Sepetiba Bay. In December 2019, the court rejected the preliminary injunction requested by the Public Prosecutor's Office to suspend the licensing process. As of the date of this annual report, the proceeding is pending decision by the court.

In June 2019, we filed a lawsuit to contest a notification from INEA regarding suspension of the solid bulk operations at TECON due to these operations allegedly not being within the scope of permitted activities under TECON's operating license. We also requested a preliminary injunction, which was granted, to suspend the effects of the notification and to continue operations pending final judgment of the lawsuit. As of the date of this annual report, we are awaiting the expert witness opinion on the matter. The proceeding remains in the initial phase.

As a result of an accident involving a Brazilian mining company in November 2015, the state of Minas Gerais filed judicial proceedings against several mining companies, including us, based on a State Dam Inventory disclosed in 2014. The state seeks to investigate structures that do not provide technical stability guaranteed by an external auditor or which stability has not been attested to.

In March 2016, a public civil action was filed against us by the state of Minas Gerais and the State Environmental Foundation questioning the stability of a small structure installed inside an industrial area and used for collection and filtration of iron ore. After showing the action was based on outdated information, the state of Minas Gerais dismissed it. In August 2016, we were notified of a similar public civil action regarding another structure of ours, Dique do Engenho. We presented documents to the state authorities proving the stability and security of Dique do Engenho and expect that this action will also be dismissed.

We are party to public civil actions filed by, among others, the Minas Gerais State Prosecutor's Office to compel our mining entity (Minérios Nacional) to take security measures at the Fernandinho dam complex. These public civil actions have pleaded, among other things, an injunction for us to present an emergency plan in relation to the Fernandinho dam complex and evidence of adoption of preventive structural measures, as well as definitive implementation of an emergency plan and a monthly security audit report. In December 2022, CSN Mineração entered into an agreement with the Public Prosecutor's Office to end the lawsuits.

In April 2019, the Minas Gerais State Prosecutor's Office filed a public civil action to compel us to adopt mitigating measures regarding the psychological risks and losses allegedly generated by the Casa de Pedra dam, including relocating residents and indemnifying the value of their homes, bearing rent and social assistance expenses and relocating the children who attended the daycare center and school that have been closed. The Minas Gerais State Prosecutor's Office also pleaded for the payment of collective moral damages. In November 2021, a first instance ruling ordered that we pay rent for residents to relocate and that we construct the daycare center and school that were closed. We filed an appeal, which revoked the decision and was not subsequently appealed by the Minas Gerais State Prosecutor's Office.

We are also subject to public civil investigations at the federal and state levels that monitor the regularity of our dams. In 2019, we signed a preliminary agreement term with the Federal Prosecutor's Office, referring to five of our dams, with which we have fully complied.

In October 2017, CSN Mineração entered into an agreement with the Minas Gerais State Prosecutor's Office agreeing to adopt certain measures, including some specified in the technical report prepared by the Minas Gerais State Prosecutor's Office regarding the Casa de Pedra dam complex in order to comply with the emergency plan for mining dams, as well as general recommendations on the location, works, types of dams and audits of the Casa de Pedra dam complex. We fulfilled the commitments listed in the agreement and have requested a certificate of full compliance (*Certidão de Cumprimento Integral*) and the closure of the investigation, which, as of the date of this annual report, are pending.

In February 2022, CSN Mineração and Minérios Nacional signed certain TACs with the Federal Prosecutor's Office, the Minas Gerais State Prosecutor's Office, the state of Minas Gerais, the State Environmental Foundation and the ANM in order to define the necessary security measures and the procedures and timeline required for the de-characterization of our B4, Vigia, Vigia auxiliary, B2 and B2 auxiliary dams.

Since 2021, there are a total of 251 indemnification actions filed by professional fishermen for alleged material and moral damages derived from an event that occurred in April 2021 at the Port of Itaguaí. Plaintiffs allege that TECAR and TECON dumped iron ore that interrupted fishing activities. Currently, there is a criminal investigation to verify the conduct of the plaintiffs and lawyers on these actions.

Other Environmental Liabilities

Our main environmental liabilities as of December 31, 2022 were associated with environmental recovery at former coal mines decommissioned in 1989 in the state of Santa Catarina, as well as environmental recovery due to previous operations in Presidente Vargas Steelworks.

We record a provision for remediation costs and environmental claims when a loss is probable, the amount can be reasonably estimated and we may incur a legal obligation. This provision is included in our income statements as other operating income (expenses). We do not include in our reserves environmental liabilities related to ERSA, as these are contractually supported by its former owner.

As of December 31, 2022, we had provisions for environmental liabilities in the total amount of R$172.6 million, as compared to R$173.6 million as of December 31, 2021. We believe our provisions are sufficient to cover all probable losses in environmental proceedings.

The following table sets forth our provisions for environmental liabilities as of the dates indicated:

	(*in millions of R$*)
December 31, 2021	**173.6**
Decommissioned coal mines (Santa Catarina)	0.6
Landfills and other[1]	(1.6)
December 31, 2022	**172.6**

(1) Refers to an estimated calculation of recovery costs related to landfill remediation obligations.

Arbitration

In January 2021, our subsidiary CSN Mineração was notified of the commencement of a confidential arbitration regarding its alleged default under certain iron ore supply agreements, involving the amount of US$1.0 billion. We believe the allegations are unfounded and are not aware of the basis used by the claimant to determine the amount involved in this proceeding. In addition, despite the allegations, CSN Mineração is a creditor under this agreement. We will conduct our legal defense with all available means.

Other Legal and Administrative Proceedings

We are defendants in other legal and administrative proceedings involving claims in the aggregate amount of R$47,688 million as of December 31, 2022, as compared to R$40,780 million as of December 31, 2021, of which (i) R$42,195 million relate to tax contingencies as of December 31, 2022 (R$36,418 million as of December 31, 2021), (ii) R$2,611 million relate to civil contingencies as of December 31, 2022 (R$1,776 million as of December 31, 2021), (iii) R$1,727 million relate to labor contingencies and social security contingencies as of December 31, 2022 (R$1,537 million as of December 31, 2021) and (iv) R$969 million relate to environmental contingencies as of December 31, 2022 (R$835 million as of December 31, 2021). Our legal counsel has assessed these contingencies as entailing a risk of possible loss and, therefore, no provision has been recorded for these contingencies.

Independent Investigation

Following media reports about statements made as part of a plea bargain testimony in a criminal proceeding not involving us that irregular election funding of R$16.5 million was allegedly arranged by our chairman and chief executive officer and made by us in connection with the construction of the Long Steel Plant in Volta Redonda in the 2010-2014 period, in May 2017, our audit committee decided to engage external forensic specialists and legal advisors to conduct an independent investigation regarding these allegations.

The independent investigation was conducted over a seven-month period, as directed by our independent audit committee, and the specialists and advisors involved were provided access to members of our senior management, including our chairman and chief executive officer, and information and documents related to the contracts, parties and periods implicated in the allegations. In November 2017, the investigation, based on the data reviewed, concluded with no findings of misconduct by us involving the contracts and periods alleged, or any evidence of any misconduct involving the parties mentioned in the allegations. As a result, we have not recorded any provision for contingencies in this regard.

In October 2017, we were informed that the Public Prosecutor's Office opened an investigation into our chairman and chief executive officer regarding the same allegations. In February 2018, Brazil's Supreme Court ruled that, because the case relates to alleged violations of an electoral nature, it did not belong in federal court. As a result, the Supreme Court ordered the withdrawal of the case from federal court and referred it to electoral court. We have not been the subject of any investigation by any governmental or enforcement agencies with respect to these allegations.

Additionally, since the case's referral to electoral court, no evidence or testimony has been presented to corroborate the statements initially made. In March 2021, the Supreme Court ruled on the preliminary injunction of a constitutional appeal, which had been filed in favor of our chairman and chief executive officer, and suspended electoral investigations due to a lack of evidence. In December 2021, the Supreme Court granted an order to close the investigation of the Public Prosecutor's Office and all the related proceedings ongoing in the electoral court. In analyzing the merit of the constitutional appeal, the justices of the Supreme Court recognized the illegal constraint imposed on our chairman and chief executive officer due to the exceeded time of the investigation and the lack of criminal evidence to justify the continuity of the case. As a result, the inquiry carried at the electoral court has been shut down.

Cement Operations Investigations

The Chairman of the Company's Board of Directors was summoned to provide clarification in May/2021 in the context of a police investigation launched by the Federal Police in January/2021, based on an anonymous complaint, to investigate an alleged cartel, by cement manufacturers.

The Company clarifies that it acts in accordance with current legislation and in compliance with ethical and legal parameters, not corroborating practices that violate free market competition.

The Public Prosecutor's Office requested that the case be closed, arguing that although notices of price increases by the cement industries were issued on close dates, this wasn´t enough to demonstrate the occurrence of a crime against the economic order. In other words, this fact would not be illegal, which was accepted by the criminal judge. The case was filed on December 8, 2022.

Police inquiry that requests information regarding invoices for cement transport contracts. On June 29, 2021, the Company received a letter from the Federal Police requesting information regarding invoices referring to cement transport contracts entered into with a company providing transport services, representing approximately 1% of the volume of services of this nature contracted by the Company. Said company was contracted based on competitive price-taking processes conducted by the Company. In the document that resulted in the initiation of the investigation, the chairman of the Company's Board of Directors is mentioned in this capacity.

Dividend Policy

General

Subject to certain exceptions set forth in Brazilian Corporate Law, our bylaws require that we pay an annual minimum dividend equal to 25% of our adjusted net profits, calculated in accordance with Brazilian Corporate Law. Proposals to declare and pay dividends in excess of the statutory minimum dividend requirement are generally made at the recommendation of our board of directors and approved by the vote of our shareholders. Any such proposal will be dependent upon our results of operations, financial condition, cash requirements for our business, future prospects and other factors deemed relevant by our board of directors. We have a policy of paying dividends equal to all legally available net profits, after taking into consideration the following priorities: (i) our business strategy; (ii) the performance of our obligations; (iii) our required investments; and (iv) the preservation of our liquidity and solid capital structure.

Brazilian companies are also permitted to pay limited amounts of interest on shareholders' equity to holders of equity securities and to treat these payments as an expense for Brazilian income tax purposes. These payments, net of withholding income tax, may be included in determining whether the statutory minimum dividend requirement has been met, subject to shareholder approval.

Amounts Available for Distribution

At each annual shareholders' meeting, our board of directors is required to recommend how our earnings for the preceding fiscal year are to be allocated. For purposes of Brazilian Corporate Law, a company's income, net of income tax and social contribution for any fiscal year, any accumulated losses from prior fiscal years and amounts allocated to employees' and management's participation in earnings, represents its "net profits" for that fiscal year.

In accordance with Brazilian Corporate Law, shareholders are entitled to receive as a mandatory dividend for each fiscal year either (i) the portion of the profits as may be stated in our bylaws or, if not set forth in our bylaws, (ii) an amount equal to 50% of the net profits as increased or reduced by: (a) amounts allocated to the legal reserve; (b) amounts allocated to the contingency reserve and the tax incentive reserve, if any; and (c) any reversion of contingency reserves constituted in prior years. The payment of dividends may be limited to the amount of net profits realized during the fiscal year, *provided* that the difference is recorded as a reserve for unrealized profits. Profits recorded in the reserve for unrealized profits, when realized and not absorbed by losses in subsequent years, must be added to the first dividend declared after their realization. Under our bylaws, we are required to distribute to shareholders as dividends in respect of each fiscal year ending on December 31, to the extent profits are available for distribution, an amount equal to at least 25% of our adjusted net profits. See "—Mandatory Dividend" below.

Legal Reserve. Under Brazilian Corporate Law, we are required to maintain a "legal reserve" to which we must allocate 5% of our "net profits" for each fiscal year until the amount of the reserve equals 20% of our paid-in capital. However, we are not required to make any allocations to our legal reserve in a year in which the legal reserve, when added to our other established capital reserves, exceeds 30% of our capital stock. The amounts allocated to such reserve must be approved by our shareholders in our annual shareholders' meeting, and may be used to increase our capital stock or to offset losses and, therefore, are not available for the payment of dividends.

Discretionary (or Statutory) Reserves. Under Brazilian Corporate Law, any corporation may provide in its bylaws for the creation of additional reserves, *provided* that the maximum amount that may be allocated to such reserves, the purpose of such reserves and the allocation criteria of such reserves are specified. There cannot be any allocation to such reserves if it affects payment of the mandatory dividend (as defined below). Our bylaws currently provide that our board of directors may propose to our shareholders the deduction of at least 1% from our net profits to be allocated to a working capital and investments reserve. Without prejudice to payment of the mandatory dividend. Our bylaws do not provide for any other discretionary reserve.

Contingency Reserve. Under Brazilian Corporate Law, a percentage of our "net profits" may be allocated to a contingency reserve for estimable losses that are considered probable in future years. Any amount so allocated in a prior year must either be reserved in the fiscal year in which the loss had been anticipated, if the loss does not occur as projected, or be written off in the event that the anticipated loss occurs.

Tax Incentive Reserve. Our shareholders in a shareholders' meeting may, following a proposal by management, allocate to a tax incentive reserve the portion of our "net profits" resulting from donations or governmental grants for investments, which may be excluded from the taxable basis of the mandatory dividend.

Unrealized Profits Reserve. Under Brazilian Corporate Law, we may allocate the amount by which the mandatory dividend exceeds our realized net profits in a given fiscal year to an unrealized profits reserve. Brazilian Corporate Law defines "realized net profits" for the period as the amount by which our "net profits" exceeds the sum of (i) positive equity net results and (ii) the net profits, gains or returns that will be realized after the end of the subsequent fiscal year. "Net profits" allocated to the unrealized profits reserve must be added to the next mandatory dividend distribution after those profits have been realized, if they have not been used to absorb losses in subsequent periods.

Retained Earnings Reserve. Under Brazilian Corporate Law, our shareholders may decide at a general shareholders' meeting to retain a portion of our net profits as provided for in a previously approved capital expenditure budget. No allocation of net profits may be made to the retained earnings reserve in case such allocation affects payment of the mandatory dividend. The balance of our retained earnings reserve may not be greater than our capital stock; if it is, the distribution of this surplus is decided at a shareholders' meeting.

For purposes of determining reserve amounts, the calculation of "net profits" and allocations to reserves for any fiscal year are determined on the basis of financial statements prepared in accordance with Brazilian Corporate Law. Our audited consolidated financial statements included elsewhere in this annual report have been prepared in accordance with IFRS and, although our allocations to reserves and dividends are reflected in the financial statements, investors will not be able to calculate the allocations or required dividend amounts from these financial statements.

Capital Reserve. Under Brazilian Corporate Law, the capital reserve consists of premiums from the issuance of shares, goodwill reserves from mergers, sales of founders' shares and sales of warrants. We do not consider amounts allocated to our capital reserve for purposes of determining mandatory dividends. Our capital stock is not currently represented by founders' shares. In our case, any amounts allocated to the capital reserve may only be used to increase our capital stock, to absorb losses that surpass accumulated profits and profit reserves, or to redeem, reimburse or purchase shares.

Mandatory Dividend

Under our bylaws, we are required to distribute to shareholders as dividends in respect of each fiscal year ending on December 31, to the extent profits are available for distribution, an amount equal to at least 25% of our adjusted profits, or the mandatory dividend, which amount shall include any interest paid on capital during that year. See "—Additional Payments on Shareholders' Equity" below. In addition to the mandatory dividend, our board of directors may recommend that shareholders receive an additional payment of dividends from other funds legally available. Any payment of interim dividends may be netted against the amount of the mandatory dividend for that fiscal year. Under Brazilian Corporate Law, if the board of directors determines prior to the annual shareholders' meeting that payment of the mandatory dividend for the preceding fiscal year would be inadvisable in view of our financial condition, the mandatory dividend does not need to be paid. This type of determination must be reviewed by the fiscal committee, if one exists, and reported, together with the appropriate explanations, to our shareholders and to the CVM. Mandatory dividends not distributed as described above must be registered as a special reserve and, if not absorbed by losses in subsequent fiscal years, must be paid as a dividend as soon as our financial condition permits.

Payment of Dividends

We are required to hold annual shareholders' meetings within the first four months after the end of our fiscal year at which an annual dividend may be declared. Additionally, our board of directors may declare interim dividends. Under Brazilian Corporate Law, dividends are generally required to be paid to the holder of record on a dividend declaration date within 60 days following the date the dividend was declared, unless a shareholders' resolution sets forth another date of payment, which, in either case, must occur prior to the end of the fiscal year in which the dividend was declared. A shareholder has a three-year period from the dividend payment date to claim dividends (or interest on shareholders' equity as described under "—Additional Payments on Shareholders' Equity" below) in respect of the common shares it holds, after which we will no longer be liable for the dividend payments.

Our payments of cash distributions on common shares underlying the ADSs will be made in Brazilian currency *reais* to our ADR custodian on behalf of our ADR depositary. Our ADR custodian will then convert the proceeds into U.S. dollars and will cause the U.S. dollars to be delivered to our ADR depositary for distribution to holders of ADSs.

Additional Payments on Shareholders' Equity

Brazilian companies are permitted to pay interest on shareholders' equity to holders of equity securities and to treat those payments as a deductible expense for Brazilian income tax purposes. The amount of interest payable on shareholders' equity is calculated based on the TJLP as determined by the Central Bank on a quarterly basis and applied to each shareholder's portion of net equity.

The TJLP is based on the annual profitability average of Brazilian public internal and external debt. The TJLP for 2022 was 7.2% *per annum*.

Interest on shareholders' equity is deductible up to the greater of the following amounts: (i) 50% of our net income (before taking into account the amounts attributable to shareholders as interest on shareholders' equity and the provision of corporate income tax but after the deduction of the provision of the social contribution on net profits) related to the period in respect of which the payment is made; or (ii) 50% of the sum of retained profits and profit reserves as of the date of the beginning of the fiscal year in respect of which the payment is made.

8B. Significant Changes

None.

Item 9. The Offer and Listing

9A. Offer and Listing Details

Our capital stock comprises common shares without par value (*ações ordinárias*) and each ADS represents one common share. Our common shares are traded on the B3 under the symbol "CSNA3." The ADSs, which are issued under a deposit agreement with Citibank, N.A., as depositary, and substantially all of which are held of record by the Depository Trust Company, are traded on the NYSE under the symbol "SID." There were no significant trading suspensions of our common shares or the ADSs in the last three years.

9B. Plan of Distribution

Not applicable.

9C. Markets

Trading on the B3 and NYSE

The B3 is the only Brazilian stock exchange on which private equity and private debt may be traded. The B3 is one of the largest exchanges worldwide in terms of market value, the second largest in the Americas and the leading exchange in Latin America.

When shareholders trade in common and preferred shares on the B3, the trade is settled in three business days after the trade date without adjustment of the purchase price for inflation. The seller is ordinarily required to deliver the shares to the exchange on the second business day following the trade date. The B3 equities clearing is responsible for the registration, settlement and risk management of trades with shares through the PUMA Trading System.

In order to better control volatility, the B3 has adopted a "circuit breaker" mechanism pursuant to which trading sessions may be suspended for a period of 30 minutes or one hour whenever the index of the stock exchange falls 10% or 15%, respectively, compared to the previous day's closing index. If the market falls more than 20% compared to the previous day, the B3 may determine the suspension of trading in all markets for a defined period, at its sole discretion, and such decision must be disclosed to the market through the News Agency (*ABO – Operações*). The "circuit breaker" is not allowed to be started during the last 30 minutes of the trading session.

The B3 is significantly less liquid than the NYSE or other major exchanges in the world. As of December 31, 2022, the aggregate market capitalization of the B3 was R$4.2 trillion and the ten largest companies listed on the B3 represented 46.14% of the total market capitalization of all listed companies. In contrast, as of December 31, 2022, the aggregate market capitalization of the NYSE was US$22.76 trillion. Although any of the outstanding shares of a listed company may trade on the B3, in most cases fewer than half of the listed shares are actually available for trading by the public, the remainder being held by small groups of controlling persons, by government entities or by one principal shareholder. See "Item 3. Key Information—3D. Risk Factors—Risks Relating to Our Common Shares and the ADSs—The relative volatility and illiquidity of the Brazilian securities markets may substantially limit your ability to sell the common shares underlying the ADSs at the price and time you desire."

As of December 31, 2022, we accounted for approximately 0.46% of the market capitalization of all listed companies on the B3.

Regulation of the Brazilian Securities Markets

Brazilian securities markets are regulated by the CVM, which has regulatory authority over the stock exchanges and securities markets, as well as by the Central Bank, which has, among other powers, licensing authority over brokerage firms and regulates foreign investment and foreign exchange transactions. The

Brazilian securities markets are governed by Law No. 6,385, dated December 7, 1976, as amended and supplemented, or the Brazilian Securities Law, which is the principal law governing the Brazilian securities markets, and by Brazilian Corporate Law and regulations issued by the CVM, the CMN and the Central Bank. These laws and regulations, among others, provide for disclosure requirements applicable to issuers of traded securities, criminal sanctions for insider trading and price manipulation, and protection of minority shareholders. They also provide for licensing and oversight of brokerage firms and governance of Brazilian stock exchanges. However, the Brazilian securities markets are not as highly regulated and supervised as U.S. securities markets.

Under Brazilian Corporate Law, a company is either publicly held (*companhia aberta*) or privately held (*companhia fechada*). All listed companies are registered with the CVM and are subject to reporting and regulatory requirements. A company registered with the CVM may trade its securities either on the B3 or in the Brazilian over-the-counter market. Shares of companies listed on the B3 may not simultaneously trade on the Brazilian over-the-counter market. The shares of a listed company may also be traded privately, subject to several limitations. To be listed on the B3, a company must be registered as a publicly held company with the CVM and apply for registration with the B3.

The trading of securities on the B3 may be halted at the request of a company in anticipation of a material announcement. Trading may also be suspended on the initiative of the B3 or the CVM, among other reasons, based on or due to a belief that a company has provided inadequate information regarding a significant event or has provided inadequate responses to inquiries by the CVM or the B3.

According to the Brazilian Securities Law, a publicly held company must submit to the CVM and the B3 certain periodic information, including annual and quarterly reports prepared by management and independent auditors. This law also requires companies to file with the CVM shareholder agreements, notices of shareholders' meetings and copies of the related minutes.

Resolution No. 44, sets forth the CVM's requirements regarding the disclosure and use of information related to material facts and acts of publicly held companies, including the disclosure of trading and acquisition of securities issued by publicly held companies.

Such requirements include provisions that:

- establish the concept of a material fact that gives rise to reporting requirements. Material facts include decisions made by controlling shareholders, shareholder and management resolutions or any other facts related to a company's business (whether occurring within the company or otherwise related thereto) that may influence the price of its publicly traded securities, or the decision of investors to trade such securities or to exercise any of such securities' underlying rights;
- specify examples of facts that are considered material, which include, among others, the execution of agreements providing for a transfer of control, the entry or withdrawal of shareholders that provide any managing, financial, technological or administrative function to the company and any corporate restructuring undertaken among related companies;
- oblige the investor relations officer, controlling shareholders, other officers, directors, members of the audit committee and other advisory boards to disclose material facts;
- require simultaneous disclosure of material facts to all markets in which the company's securities are admitted for trading;
- require the acquirer of a controlling stake in a corporation to disclose material facts, including its intentions as to whether or not to de-list the corporation's shares within one year from the acquisition of its controlling stake;
- establish rules regarding disclosure requirements in the acquisition and disposal of a material ownership interest; and
- forbid trading on the basis of material non-public information.

Pursuant to CVM Rule No. 80, dated March 29, 2022, the CVM expanded the quantity and improved the quality of information required to be reported by issuers in Brazil. This rule provides the market with greater transparency and requires issuers to file annually a comprehensive reference form (*Formulário de Referência*) and a governance report (*Informe de Governança*). The reference form is in line with the shelf registration system recommended by the International Organization of Securities of Commissions (IOSCO) through which information is consolidated and subject to periodic update. In the governance report, we disclose information regarding governance practices set forth in the Brazilian Code of Corporate Governance, by the method of "practice or explain." Each of our reference form and governance report are available on our investor relations website (*www.ri.csn.com.br*) or on the CVM's website (*http://www.cvm.gov.br*).

The CVM also enacted Rule No. 81, dated March 29, 2022, to regulate two key issues involving general meetings of shareholders in publicly held companies: (i) the extent of information and documents to be provided in support of call notices (subject to prior disclosure to shareholders); and (ii) proxy solicitation for the exercise of voting rights. The rule aims to (x) improve the quality of information disclosed by publicly held companies to shareholders and to the market in general, favoring the use of the Internet; (y) make the exercise of voting rights less costly and foster the participation of shareholders in general meetings, especially for companies with widely dispersed capital; and (z) facilitate shareholder oversight of companies.

9D. Selling Shareholders

Not applicable.

9E. Dilution

Not applicable.

9F. Expenses of the Issue

Not applicable.

Item 10. Additional Information

10A. Share Capital

Not applicable.

10B. Memorandum and Articles of Association

Registration and Corporate Purpose

We are registered with the Brazilian Department of Trade Registration under number 15,910. Our corporate purpose, as set forth in Article 2 of our bylaws, is to manufacture, transform, market, import and export steel products and steel derived by-products, as well as to explore other activities directly or indirectly related to this purpose, including: mining, cement and carbochemical business activities, the manufacture and assembly of metallic structures, construction, transportation, navigation and port activities; the generation, management and commercialization of energy; and the participation in the capital of other national or international companies.

Directors' Powers

Pursuant to our bylaws, a director may not vote on a proposal, arrangement or contract in which the director's interests conflict with our interests. In addition, our shareholders must approve the compensation of our management and, in case an aggregate amount is fixed, our board of directors is responsible for the allocation. There is no mandatory retirement age for our directors. For a detailed description of the general duties and powers of our board of directors, see "Item 6. Directors, Senior Management and Employees—6A. Directors and Senior Management."

Description of Capital Stock

Set forth below is certain information concerning our capital stock and a brief summary of certain significant provisions of our bylaws and Brazilian Corporate Law applicable to our capital stock. This description does not purport to be complete and is qualified by reference to our bylaws and to Brazilian law. For further information, see our bylaws incorporated in this annual report by reference.

Overview

As of December 31, 2022, our capital stock comprised 1,326,093,947 common shares. Our bylaws authorize our board of directors to increase our capital stock to up to 2,400,000,000 common shares without an amendment to our bylaws. There are currently no classes or series of preferred shares issued or outstanding. We may purchase our own shares for purposes of cancellation or to hold them in treasury subject to certain limits and conditions established by the CVM and Brazilian Corporate Law. See "Item 16. Reserved—16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers."

Liability for Further Capital Calls

Pursuant to Brazilian Corporate Law, a shareholder's liability is generally limited to the issue price of the subscribed or purchased shares. There is no obligation of a shareholder to participate in additional capital calls.

Voting Rights

Each common share entitles its holder to one vote at our shareholders' meetings. According to CVM regulations, shareholders that represent at least 5% of our common shares may request cumulative voting ("*voto múltiplo*") in an election of our board of directors. Pursuant to Brazilian Corporate Law and according to CVM guidance, as our capital stock comprises only common shares, shareholders holding at least 10% of our common shares in the three consecutive months prior to our shareholder's meeting have the right to appoint a member of our board of directors ("*eleição em separado*").

Shareholders' Meetings

Pursuant to Brazilian Corporate Law, the shareholders present at an annual or extraordinary shareholders' meeting, convened and held in accordance with Brazilian Corporate Law and our bylaws, are empowered to decide all matters relating to our corporate purpose and to pass any resolutions they deem necessary for our protection and well-being.

In order to participate in a shareholders' meeting, a shareholder must be a record owner of the share on the day the meeting is held, and may be represented by a proxy.

Shareholders' meetings are called, convened and presided over by the chairman of our board of directors or, in his absence, by whom he appoints. Brazilian Corporate Law requires that our shareholders' meeting be convened by publication of a notice in a newspaper of general circulation in Brazil and in the city in which our principal place of business is located, currently the *Jornal Folha de São Paulo – Edição Regional*, at least 21 days prior to the scheduled meeting date and no fewer than three times. However, CVM rules require that companies whose shares are also represented by ADSs must convene a shareholders' meeting no later than 30 days in advance. Both notices must contain the agenda for the meeting and, in the case of an amendment to our bylaws, an indication of the subject matter.

In order for a shareholders' meeting to be held, shareholders representing a quorum of at least one-fourth of the voting capital must be present, except for meetings convened to amend our bylaws, where shareholders representing at least two-thirds of the voting capital must be present. A shareholder may be represented at a shareholders' meeting by means of a proxy, appointed not more than one year before the meeting and, if the shareholder is a natural person, may be represented by another shareholder, a company officer, a lawyer or a financial institution, and, if the shareholder is a legal entity, anyone may act as proxy. If no quorum is present, notice must be given in the manner described above, no fewer than eight days prior to the scheduled meeting date. On second notice, the meeting may be convened without a specific quorum requirement, subject to the minimum quorum and voting requirements for certain matters, as described below. A holder of shares with no voting rights may attend a shareholders' meeting and take part in the discussion of matters submitted for consideration, but will not be allowed to vote.

Except as otherwise provided by law, resolutions passed at a shareholders' meeting require a simple majority vote, abstentions not considered. Pursuant to Brazilian Corporate Law, the approval of shareholders representing at least one-half of our issued and outstanding voting shares is required for the following actions: (i) to create a new class of preferred shares or disproportionately increase an existing class of preferred shares relative to the other classes of preferred shares, to change a priority, preference, right, privilege or condition of redemption or amortization of any class of preferred shares or to create any class of non-voting preferred shares that has a priority, preference, right, condition or redemption or amortization superior to an existing class of shares (in these cases, a majority of the issued and outstanding shares of the affected class is also required); (ii) to reduce the mandatory dividend; (iii) to change our corporate purpose; (iv) to merge into or consolidate with another company or to spin-off our assets; (v) to dissolve or liquidate our company; (vi) to cancel any liquidation procedure; (vii) to authorize the issuance of founders' shares; and (viii) to participate in a centralized group of companies as defined under Brazilian Corporate Law.

Pursuant to Brazilian Corporate Law, shareholders voting at a shareholders' meeting have the power to: (i) amend our bylaws; (ii) elect or dismiss members of our board of directors (and members of the fiscal committee) at any time; (iii) receive and approve the annual management accounts, including the allocation of net profits and payment of the mandatory dividends and allocation to the various reserve accounts; (iv) authorize the issuance of debentures in general; (v) suspend the rights of a shareholder who has violated Brazilian Corporate Law or our bylaws; (vi) accept or reject the valuation of assets contributed by a shareholder in consideration of the subscription of shares in our capital stock; (vii) authorize the issuance of founders' shares; (viii) pass resolutions authorizing reorganization of our legal form, including a merger, consolidation or split of the company, dissolution and liquidation of the company, election and dismissal of our liquidators and to examine their accounts; and (ix) authorize management to declare the company insolvent and to request a *recuperação judicial* or *recuperação extrajudicial* (a procedure involving protection from creditors similar in nature to a reorganization under the U.S. Bankruptcy Code), among others.

Redemption Rights

Our common shares are not redeemable, except that a dissenting and adversely affected shareholder is entitled, under Brazilian Corporate Law, to obtain redemption upon a decision made at a shareholders' meeting by shareholders representing at least one-half of the issued and outstanding voting shares to: (i) create a new class of preferred shares or to disproportionately increase an existing class of preferred shares relative to the other classes of preferred shares (unless these actions are provided for or authorized by our bylaws); (ii) modify a preference, privilege or condition of redemption or amortization conferred on one or more classes of preferred shares, or to create a new class with greater privileges than an existing class of preferred shares; (iii) reduce the mandatory distribution of dividends; (iv) change our corporate purpose; (v) merge us with another company or consolidate us; (vi) transfer all of our shares to another company in order to make us a wholly owned subsidiary of that company (*incorporação*); (vii) approve the acquisition of control of another company at a price that exceeds certain limits set forth under Brazilian Corporate Law; (viii) approve our participation in a centralized group of companies as defined under Brazilian Corporate Law; (ix) conduct a spin-off that results in (a) a change of corporate purpose, (b) a reduction of the mandatory dividend or (c) any participation in a group of companies as defined under Brazilian Corporate Law; or (x) in the event that the entity resulting from (a) a merger or consolidation, (b) an *incorporação* as described above or (c) a spin-off of a listed company fails to become a listed company within 120 days of the shareholders' meeting at which the decision was taken. The right of redemption lapses 30 days after publication of the minutes of the relevant shareholders' meeting. We would be entitled to reconsider any action giving rise to redemption rights within ten days following the expiration of those rights, if the redemption of shares of dissenting shareholders would jeopardize our financial stability. Law No. 9,457, dated May 5, 1997, which amended Brazilian Corporate Law, contains provisions which, among other things, restrict redemption rights in certain cases and allow companies to redeem their shares at their market value, subject to certain requirements. According to Brazilian Corporate Law, the reimbursement value of the common shares must equal the book value, which is determined by dividing our net assets by the total number of shares issued by us, excluding treasury shares (if any).

Preemptive Rights

Except as provided for in Brazilian Corporate Law (such as in the case of mergers and public offerings), our bylaws allow each of our shareholders a general preemptive right to subscribe to shares in any capital increase, in proportion to his or her ownership interest. A minimum period of 30 days following the publication of notice of a capital increase is allowed for the exercise of the right and the right is transferable. In the event of a capital increase that would maintain or increase the proportion of capital represented by common shares, holders of ADSs may have preemptive rights to subscribe only to newly issued common shares. In the event of a capital increase that would reduce the proportion of capital represented by common shares, holders of ADSs may have preemptive rights to subscribe for common shares, in proportion to their ownership interest, only to the extent necessary to prevent dilution of their interest in us. Moreover, U.S. holders of ADSs representing our common shares, pursuant to the deposit agreement, are deemed to recognize that all preemptive and similar rights with respect to the ADSs have been validly waived. For more information, see "Item 3. Key Information—3D. Risk Factors—Risks Relating to Our Common Shares and the ADSs—Holders of ADSs may be unable to exercise preemptive rights with respect to our common shares."

Form and Transfer

As our common shares are in registered form, their transfer is governed by the rules of Article 31, paragraph 3, of Brazilian Corporate Law, which provides that a transfer of shares is effected by a transfer recorded in a company's share transfer records upon presentation of valid share transfer instructions to the company by a transferor or its representative. When common shares are acquired or sold on a Brazilian stock exchange, the transfer is effected in our records by a representative of a brokerage firm or the stock exchange's clearing system. Transfers of shares by a non-Brazilian shareholder are made in the same way and are executed by such shareholders' local agent.

The B3 operates a central clearing system. A holder of our common shares may choose, at its discretion, to participate in this system and, in that case, all shares elected to be put into this system will be deposited in the custody of the B3 (through a Brazilian institution duly authorized to operate by the Central Bank and having a clearing account with the B3). The fact that those common shares are held in the custody of the B3 will be reflected in our register of shareholders. Each participating shareholder will, in turn, be registered in our register of beneficial shareholders maintained by the B3 and will be treated in the same way as registered shareholders.

Limitations on Ownership and Voting Rights by Non-Brazilians Shareholders

There are no restrictions on ownership or voting of our common shares by individuals or legal entities domiciled outside Brazil. However, the right to convert dividend payments and proceeds from the sale of common shares into foreign currency and to remit those amounts outside Brazil is subject to exchange control restrictions and foreign investment legislation which generally require, among other things, obtaining a certificate of registration under CMN Resolution 4,373 or its direct foreign investment regulations. See "—10D. Exchange Controls."

Share Ownership Disclosure

There are no provisions in our bylaws governing the ownership threshold above which shareholder ownership must be disclosed. CVM regulations require the disclosure of (i) any direct or indirect acquisition or disposition of shares that exceeds 5%, 10%, 15%, and so on, of any class of capital stock of a listed company, (ii) acquisition of control of a listed company and (iii) ownership of shares of capital stock of a listed company by members of such company's board of executive officers, board of directors, audit committee, fiscal committee (if any) and any other consulting or technical body (if any) and certain relatives of those persons.

10C. Material Contracts

None.

10D. Exchange Controls

According to CMN Resolution 4,373, foreign investors may participate in almost all financial assets and engage in almost all transactions available in the Brazilian market, *provided* that certain requirements are fulfilled. CMN Resolution 4,373 defines foreign investors as individuals and legal entities, mutual funds and others collective investment entities headquartered or domiciled outside Brazil. In accordance with CMN Resolution 4,373, a foreign investor must:

- indicate at least one representative in Brazil, with powers to practice all the actions relating to its investments;
- complete the foreign investor registration form;
- register as a foreign investor before the CVM, and register its foreign investment before the Central Bank; and
- appoint a custodian, duly licensed by the Central Bank, if the Brazilian representative is not a financial institution.

CMN Resolution 4,373 specifies the manner of custody and the permitted means for trading securities held by foreign investors. The offshore transfer or assignment of securities or other financial assets held by foreign investors pursuant to CMN Resolution 4,373 is prohibited, except for transfers resulting from a corporate reorganization, or occurring upon the death of an investor by operation of law or will.

CMN Resolution 4,373 also provides for the issuance of depositary receipts in foreign markets in respect of shares of Brazilian issuers. It provides that (i) proceeds from the sale of ADSs by holders outside Brazil are not subject to Brazilian foreign investment controls and (ii) holders of ADSs who are not residents of a low-tax jurisdiction (*país com tributação favorecida*), as defined by Brazilian law, are entitled to favorable tax treatment.

A certificate of registration has been issued in the name of Citibank, N.A., as our ADR depositary, and is maintained by Banco Bradesco S.A., our ADR custodian, on behalf of our ADR depositary. Pursuant to the certificate, our ADR custodian and our ADR depositary are able to convert dividends and other distributions with respect to our common shares represented by the ADSs into foreign currency and remit the proceeds outside Brazil. Pursuant to CMN Resolution 4,373, in order for an investor to surrender ADSs for the purpose of withdrawing the shares represented thereby, the investor is required to appoint a Brazilian financial institution duly authorized by the Central Bank and the CVM to act as its legal representative, who is responsible, among other things, for keeping and updating the investors' certificates of registrations with the Central Bank, which entitles registered foreign investors to trade the underlying common shares directly on the B3.

A non-Brazilian holder of common shares may experience delays in obtaining a certificate of registration, which may delay remittances abroad. This kind of delay exposes the non-Brazilian holder to exchange rate variation and may adversely affect the amount, in U.S. dollars, received by the non-Brazilian holder.

Under current Brazilian legislation, the Brazilian government may impose temporary restrictions on remittances of foreign capital abroad in the event of a serious imbalance or an anticipated serious imbalance of Brazil's balance of payments. See "Item 3. Key Information—3D. Risk Factors—Risks Relating to Our Common Shares and the ADSs—If you surrender ADSs and withdraw common shares, you risk forfeiting Brazilian tax advantages and losing the ability to timely remit foreign currency abroad."

10E. Taxation

The following is a summary of certain Brazilian and U.S. federal income tax consequences of the acquisition, ownership and disposition of our common shares or the ADSs by an investor that holds such common shares or ADSs. This summary does not purport to address all material tax consequences of the acquisition, ownership and disposition of our common shares or the ADSs, does not take into account the specific circumstances of any particular investor and does not address certain investors that may be subject to special tax rules.

This summary is based on the tax laws of the United States and Brazil, as in effect on the date of this annual report, which are subject to change (or changes in interpretation), possibly with retroactive effect. In addition, this summary is based in part upon the representations of the ADS depositary and the assumption that each obligation in our deposit agreement and any related agreement will be performed in accordance with its terms.

Although there is, at present, no income tax treaty between Brazil and the United States, the tax authorities of the two countries have had discussions that may result in such a treaty. No assurance can be given, however, as to whether or when an income tax treaty will enter into force or how it will affect the U.S. Holders, as defined below, of our common shares or the ADSs.

Prospective investors are urged to consult their own tax advisors regarding the Brazilian and U.S. federal, state and local tax consequences of the acquisition, ownership and disposition of our common shares and the ADSs.

Brazilian Tax Considerations

The following discussion summarizes the principal Brazilian tax consequences of the acquisition, ownership and disposition of common shares or ADSs by a holder that is not domiciled in Brazil for purposes of Brazilian taxation ("Non-Resident Holder"). It is based on Brazilian law as currently in effect. Any change in such law may change the consequences described below, possibly with retroactive effect. This discussion does not specifically address all of the Brazilian tax considerations applicable to any particular Non-Resident Holder. Each Non-Resident Holder of common shares or ADSs should consult their own tax advisor concerning the Brazilian tax consequences of an investment in our common shares or the ADSs.

A Non-Resident Holder of ADSs may withdraw them in exchange for our common shares in Brazil. Pursuant to Brazilian law, the Non-Resident Holder may invest in common shares under CMN Resolution 4,373 (a "4,373 Holder").

Taxation of Dividends and Interest on Shareholders' Equity

Dividends, including stock dividends and other dividends, paid by us (i) to the ADS depositary in respect of the common shares underlying the ADSs or (ii) to a Non-Resident Holder in respect of the common shares, are currently not subject to Brazilian withholding income tax, as far as such amounts are related to profits generated on or after January 1, 1996. We do not have any profits generated prior to January 1, 1996.

Since 1996, Brazilian companies have been permitted to pay limited amounts of interest on shareholders' equity to holders of equity securities and to treat those payments as a deductible expense for purposes of their Brazilian income tax and social contribution on net profits tax basis. For tax purposes, this interest is limited to the daily *pro rata* variation of the TJLP, as determined by the Central Bank from time to time, multiplied by the sum of determined net equity accounts of the Brazilian company, and the amount of the deduction may not exceed the greater of (i) 50% of the net income (before taking into account the amounts attributable to shareholders as interest on shareholders' equity and the provision of corporate income tax but after the deduction of the provision of the social contribution on net profits) related to the period in respect of which the payment is made; or (ii) 50% of the sum of retained profits and profits reserves as of the date of the beginning of the fiscal year in respect of which the payment is made. Payments of interest on shareholders' equity are decided by the shareholders on the basis of the recommendations of our board of directors.

Payment of interest on shareholders' equity to a Non-Resident Holder is subject to withholding income tax at the rate of 15%, or 25% if the Non-Resident Holder is domiciled in a tax haven.

For this purpose, a "tax haven" or "low-tax regime" is a country or location (i) that does not impose income tax, (ii) where the income tax rate is lower than 20% or (iii) where the local legislation imposes restrictions on disclosing the shareholding composition or ownership of the investment (each, a "Tax Haven Jurisdiction"). Ordinance No. 488, dated November 28, 2014, reduced to 17% the maximum income tax rate that may be imposed by a given jurisdiction for characterization of a Tax Haven Jurisdiction, as long as the jurisdiction complies with international tax transparency standards. Subsequently, tax authorities provided that compliance with such standards requires: (a) signature of or conclusion of negotiation to sign a treaty or agreement allowing the exchange of information related to identification of income beneficiaries, corporate structure, ownership of goods or rights or economic transactions and (b) commitment to the criteria defined in international anti-tax evasion forums of which Brazil is a member. Tax authorities regularly issue a list of jurisdictions which are considered Tax Haven Jurisdictions. This list is currently set forth in Normative Instruction No. 1,037/10, as amended.

These payments of interest on shareholders' equity may be included as part of any mandatory dividend. To the extent payment of interest on shareholders' equity is included, the company may be required to distribute to shareholders an additional amount to ensure that the net amount received by them, after payment of the applicable withholding income tax, *plus* the amount of declared dividends, is at least equal to the mandatory dividend.

No assurance can be given that our board of directors will not recommend that future distributions of income should be made by means of interest on shareholders' equity instead of dividends.

Taxation of Gains

Capital gains realized by Non-Resident Holders on the disposition of common shares sold on the Brazilian stock exchange (which includes transactions carried out on the organized over-the-counter market):

- are exempt, when realized by a Non-Resident Holder that (i) is a 4,373 Holder and (ii) is not resident or domiciled in a Tax Haven Jurisdiction;
- are subject to income tax at a rate of 15% in case of gains realized by (i) a Non-Resident Holder that (x) is not a 4,373 Holder and (y) is not resident or domiciled in a Tax Haven Jurisdiction; or (ii) a Non-Resident Holder that (x) is a 4,373 Holder and (y) is resident or domiciled in a Tax Haven Jurisdiction; and
- are subject to income tax at a rate of 25% in case of gains realized by a Non-Resident Holder that (i) is not a 4,373 Holder and (ii) is resident or domiciled in a Tax Haven Jurisdiction.

As a general rule, capital gains realized as a result of a disposition transaction are the positive difference between the amount realized on the disposition of the common shares and the respective acquisition cost.

According to Law No. 10,833/03, the gains recognized on a disposition of assets located in Brazil, such as our common shares, by a Non-Resident Holder, are subject to withholding income tax in Brazil. This rule is applicable regardless of whether the disposition is conducted in Brazil or abroad and/or if the disposition is or is not made to an individual or entity resident or domiciled in Brazil.

Withholding income tax of 0.005% will apply and can be offset against any income tax due on the capital gain. Such withholding does not apply to a 4,373 Holder that is not resident or domiciled in a Tax Haven Jurisdiction.

Any other gains realized on the disposition of common shares that are not carried out on the Brazilian stock exchange:

- are subject to income tax at rates varying from 15% to 22.5%, depending on the total amount of gains within two consecutive fiscal years (see table below) when realized by any Non-Resident Holder that is not resident or domiciled in a Tax Haven Jurisdiction, whether or not such holder is a 4,373 Holder; and
- are subject to income tax at a rate of 25% when realized by a Non-Resident Holder that is resident or domiciled in a Tax Haven Jurisdiction, whether or not such holder is a 4,373 Holder.

The capital gains rates described above, varying from 15% to 22.5%, are determined according to the following table:

Capital Gains Tax Rate	Threshold (total gains on the sale of the same rights within two fiscal years)
15%	Total gains below R$5 million
17.5%.......................................	Total gains above R$5 million, but below R$10 million
20%	Total gains above R$10 million, but below R$30 million
22.5%.......................................	Total gains above R$30 million

In the cases described above, if the gains are related to transactions conducted on the Brazilian non-organized over-the-counter market with intermediation, withholding income tax of 0.005% will also apply and can be offset against any income tax due on the capital gain.

The statutory definition of a Tax Haven Jurisdiction for the purpose of income taxation on gains should differ depending on whether or not a holder is a 4,373 Holder. In the case of a 4,373 Holder, the definition of Tax Haven Jurisdiction should not comprise jurisdictions where the local legislation imposes restrictions on disclosing the shareholding composition or ownership of the investment. However, the list provided for in Normative Instruction No. 1,037/10 does not seem to differ from the Tax Haven Jurisdiction definition for the purposes of 4,373 Holders.

Any exercise of preemptive rights relating to common shares will not be subject to Brazilian withholding income tax. Gains realized by a Non-Resident Holder on the disposition of preemptive rights will be subject to Brazilian income tax according to the same rules applicable to a disposition of common shares.

In the case of a redemption of common shares or a capital reduction, the positive difference between the amount received by the Non-Resident Holder and the acquisition cost of the common shares redeemed in *reais* is treated as capital gain derived from the sale or exchange of shares not carried out on a Brazilian stock exchange market and is therefore subject to income tax at rates of up to 25%.

Sale of ADSs by U.S. Holders to Other Non-Residents in Brazil

As discussed above, pursuant to Law No. 10,833, the sale of assets located in Brazil involving Non-Resident Holders is subject to Brazilian withholding income tax, regardless if the purchaser is a Brazilian resident or not. We believe that the ADSs do not fall within the definition of assets located in Brazil for the purposes of Law No. 10,833, and, thus, should not be subject to Brazilian withholding tax. However, due to the lack of any administrative or judicial guidance, there is no assurance that this interpretation would prevail. If the ADSs are deemed to be assets located in Brazil, gains recognized by a Non-Brazilian Holder from the sale or other disposition to either a non-resident or a resident in Brazil may be subject to income tax in Brazil according to the rules described in "—Taxation of Gains" above.

Gains on the Exchange of ADSs for Common Shares

The withdrawal of ADSs in exchange for common shares is not subject to Brazilian income tax, assuming compliance with applicable regulation regarding the registration of the investment with the Central Bank.

Gains on the Exchange of Common Shares for ADSs

The deposit of common shares in exchange for ADSs may be subject to Brazilian withholding income tax on capital gains if the amount previously registered with the Central Bank as a foreign investment in common shares or, in the case of other market investors under CMN Resolution 4,373, the acquisition cost of the common shares, as the case may be, is lower than:

- the average price per common share on the Brazilian stock exchange on which the greatest number of such common shares were sold on the day of deposit; or
- if no common shares were sold on that day, the average price on the Brazilian stock exchange on which the greatest number of common shares were sold during the 15 preceding trading sessions.

The difference between the amount previously registered, or the acquisition cost, as the case may be, and the average price of the common shares, calculated as set forth above, is considered a capital gain subject to income tax at rates up to 25%. In some circumstances, there may be arguments that this tax treatment is not applicable in the case of 4,373 Holders that are not located in a Tax Haven Jurisdiction.

Tax on Financial Transactions

The Tax on Financial Transactions (*Imposto sobre Operações de Crédito, Câmbio e Seguro ou relativas a Títulos ou Valores Mobiliários*), or "IOF," is imposed on foreign exchange, securities, credit and insurance transactions.

IOF on Foreign Exchange Transactions

Tax on foreign exchange transactions, or "IOF/Exchange," may be levied on foreign exchange transactions (conversion of foreign currency in *reais* and conversion of *reais* into foreign currency), affecting either or both the inflow or outflow of investments. Currently, the general IOF/Exchange rate applicable to foreign exchange transactions is 0.38%.

The Brazilian government may increase the rate of the IOF/Exchange to a maximum rate of 25% of the amount of the foreign exchange transaction at any time, but such an increase will only apply in respect of future foreign exchange transactions. Currently, for most foreign exchange transactions related to investments in common shares, the IOF/Exchange rate is zero.

IOF on Bonds and Securities Transactions

IOF may also be levied on transactions involving bonds and securities, or "IOF/Securities," including those carried out on Brazilian stock, futures or commodities exchanges. The rate of the IOF/Securities applicable to most transactions involving common shares is currently zero. The Brazilian government may increase the rate of the IOF/Exchange up to 1.5% per day at any time, but such an increase will only apply in respect of future transactions.

Other Brazilian Taxes

There are no Brazilian inheritance, gift or succession taxes applicable to the ownership, transfer or disposition of common shares or ADSs by a Non-Resident Holder, except for gift and inheritance taxes which are levied by some states of Brazil on gifts made or inheritances bestowed by individuals or entities not resident or domiciled in Brazil to individuals or entities resident or domiciled within that state in Brazil. There are no Brazilian stamp, issue, registration or similar taxes or duties payable by holders of common shares or ADSs.

U.S. Federal Income Tax Considerations

The summary discussion below is applicable to you only if you are a "U.S. Holder" or a "Non-U.S. Holder" (both as defined below) that holds the common shares or ADSs as "capital assets" (generally property held for investment) within the meaning of Section 1221 of the U.S. Internal Revenue Code of 1986, as amended (the "Code"). This summary is based upon the Code, its legislative history, U.S. Treasury Department regulations, administrative pronouncements of the U.S. Internal Revenue Service (the "IRS") and judicial decisions, all as in effect on the date hereof, and all of which are subject to change (possibly with retroactive effect) and to differing interpretations. This summary does not describe any implications under state, local or non-U.S. tax law, or any aspect of U.S. federal tax law (such as estate tax, gift tax, alternative minimum tax or Medicare tax on net investment income) other than U.S. federal income taxation.

This summary does not purport to address all the material U.S. federal income tax consequences that may be relevant to the holders of our common shares or the ADSs, and does not take into account the specific circumstances of any particular investors, some of which (such as tax-exempt entities, banks or other financial institutions, insurance companies, dealers in securities or currencies, traders in securities that elect to use a mark-to-market method of accounting for their securities holdings, regulated investment companies, real estate investment trusts, partnerships and other pass-through entities, U.S. expatriates, investors that own, have owned or are treated as owning, directly, indirectly or constructively 10% or more of our stock by vote or value, "controlled foreign corporations," certain investors who file applicable financial statements required to recognize income when the associated revenue is reflected on such financial statements, investors that hold our common shares or the ADSs as part of a straddle, hedge, conversion or constructive sale transaction or other integrated transaction and persons whose functional currency is not the U.S. dollar) may be subject to special tax rules.

For purposes of this discussion, a U.S. Holder is any beneficial owner of common shares or ADSs that is (i) an individual who is a citizen or resident of the United States, (ii) a corporation (or other entity taxable as a corporation for U.S. federal income tax purposes) organized under the laws of the United States, any state thereof or the District of Columbia, (iii) an estate the income of which is subject to U.S. federal income tax without regard to its source, or (iv) a trust if a U.S. court is able to exercise primary supervision over administration of the trust and one or more U.S. persons have authority to control all substantial decisions of the trust or if the trust validly elects under applicable U.S. Treasury Department regulations to be taxed as a U.S. person. A "Non-U.S. Holder" is any beneficial owner of common shares or ADSs that is an individual, corporation, estate or trust who is neither a U.S. Holder nor a partnership for U.S. federal income tax purposes.

If a partnership (or any other entity taxable as a partnership for U.S. federal income tax purposes) holds our common shares or the ADSs, the U.S. federal tax treatment of a partner will generally depend upon the status of the partner and upon the activities of the partnership. A prospective investor who is a partner of a partnership holding our common shares or the ADSs should consult its own tax advisor.

In general, for U.S. federal income tax purposes, holders of ADRs evidencing ADSs will be treated as the owners of the common shares represented by those ADSs, and exchanges of common shares for ADSs, and ADSs for common shares, will not be subject to U.S. federal income tax.

Taxation of Dividends

U.S. Holders

Under the U.S. federal income tax laws, and subject to the passive foreign investment company ("PFIC") rules discussed below, U.S. Holders will include in gross income, as dividend income, the gross amount of any distribution paid by us (including (i) payments considered "interest" in respect of shareholders' equity under Brazilian law, (ii) amounts withheld in respect of Brazilian taxes and (iii) any additional amounts payable in respect of such withholding taxes as described above under "—Brazilian Tax Considerations—Taxation of Dividends and Interest on Shareholders' Equity") out of our current or accumulated earnings and profits (as determined for U.S. federal income tax purposes) when the distribution is actually or constructively received by the U.S. Holder, in the case of common shares, or by the ADS depositary, in the case of ADSs. Distributions in excess of current and accumulated earnings and profits, as determined under U.S. federal income tax principles, will be treated as a non-taxable return of capital to the extent of the U.S. Holder's adjusted tax basis in the common shares or the ADSs and thereafter as capital gain, which will be either long-term or short-term capital gain depending on whether the U.S. Holder held common shares or ADSs for more than one year. We do not intend to maintain calculations of our earnings and profits under U.S. federal income tax principles and, unless and until such calculations are made, U.S. Holders should assume all distributions are made out of earnings and profits and constitute dividend income.

The dividend income will not be eligible for the dividends-received deduction generally allowed to U.S. corporations in respect of dividends received from other U.S. corporations. Subject to certain exceptions for short-term and hedged positions, certain non-corporate U.S. Holders (including individuals) may qualify for a maximum 20% rate of tax in respect of "qualified dividend income" received. Dividend income with respect to the ADSs will be qualified dividend income, *provided* that, in the year that a non-corporate U.S. Holder receives the dividend, the ADSs are readily tradable on an established securities market in the United States, and we were not in the year prior to the year in which the dividend was paid, and are not in the year in which the dividend is paid, a PFIC. Based on existing IRS guidance, it is not entirely clear whether dividends received with respect to our common shares not held through ADSs will be treated as qualified dividend income, because our common shares are not themselves listed on a U.S. exchange.

The amount of the dividend distribution includible in gross income of a U.S. Holder will be the U.S. dollar value of the *real* payments made, determined at the spot *real*/U.S. dollar rate on the date such dividend distribution is includible in the gross income of the U.S. Holder, regardless of whether the payment is in fact converted into U.S. dollars. A U.S. Holder should not recognize any foreign currency gain or loss in respect of such dividend if such *reais* are converted into U.S. dollars on the date received by the U.S. Holder. If the *reais* are not converted into U.S. dollars on the date of receipt, however, gain or loss may be recognized upon a subsequent sale or other disposition of the *reais*. Such foreign currency gain or loss, if any, will be treated as ordinary income or loss from sources within the United States and will not be eligible for the special tax rate applicable to qualified dividend income. U.S. Holders should consult with their own tax advisors regarding the treatment of any foreign currency gain or loss if any *reais* received as a dividend on our common shares or the ADSs is not converted into U.S. dollars on the date of receipt.

Dividends received by most U.S. Holders will constitute foreign source "passive income" for foreign tax credit purposes. For purposes of the U.S. foreign tax credit limitation, foreign source income is separated into different "baskets," and the credit for foreign taxes on income in any basket is limited to the U.S. federal income tax allocable to such income.

Subject to limitations under U.S. federal income tax law concerning credits or deductions for foreign income taxes and certain exceptions for short-term and hedged positions, any Brazilian income tax withheld from dividends paid by us may be treated as foreign income tax eligible for credit against a U.S. Holder's U.S. federal income tax liability, *provided* that the withholding tax constitutes a "covered withholding tax" under recent U.S. regulations (or at a U.S. Holder's election, may be deducted in computing taxable income, *provided* that, in the case of any "covered withholding tax," the U.S. Holder has elected to deduct all foreign income taxes paid or accrued for the relevant taxable year). The rules with respect to foreign tax credits are complex and recent U.S. regulations have imposed additional requirements that must be met for a foreign tax to be creditable (including requirements that a "covered withholding tax" be imposed on nonresidents in lieu of a generally applicable tax that satisfies the regulatory definition of an "income tax," which may be unclear or difficult to determine). U.S. Holders are urged to consult their own tax advisors regarding the availability of the foreign tax credit under their particular circumstances.

The U.S. Treasury Department has expressed concern that intermediaries in connection with depositary arrangements may be taking actions that are inconsistent with the claiming of foreign tax credits by U.S. persons who are holders of depositary shares. Accordingly, investors should be aware that the discussion above regarding the availability of foreign tax credits for Brazilian income tax withheld from dividends paid with respect to common shares represented by ADSs could be affected by future action taken by the U.S. Treasury Department.

Distributions of additional common shares to U.S. Holders with respect to their common shares or ADSs that are made as part of a *pro rata* distribution to all our shareholders generally will not be subject to U.S. federal income tax.

Non-U.S. Holders

Dividends paid to a Non-U.S. Holder in respect of common shares or ADSs will not be subject to U.S. federal income tax unless those dividends are effectively connected with the conduct of a trade or business within the United States by the Non-U.S. Holder (or are attributable to a permanent establishment maintained in the United States by the Non-U.S. Holder, if an applicable income tax treaty so requires as a condition for the Non-U.S. Holder to be subject to U.S. federal income taxation on a net basis in respect of income from common shares or ADSs), in which case the Non-U.S. Holder generally will be subject to U.S. federal income tax in respect of the dividends in the same manner as a U.S. Holder. Any such effectively connected dividends received by a corporate Non-U.S. Holder may also, under certain circumstances, be subject to an additional "branch profits tax" (at a 30% rate or at a reduced rate as may be specified by an applicable income tax treaty).

Taxation of Capital Gains

U.S. Holders

Subject to the PFIC rules discussed below, upon a sale, redemption or other taxable disposition of common shares or ADSs, a U.S. Holder will recognize gain or loss for U.S. federal income tax purposes in an amount equal to the difference between the U.S. dollar value of the amount realized (before deduction of any Brazilian tax) and the U.S. Holder's adjusted tax basis (determined in U.S. dollars) in the common shares or ADSs. Generally, a non-corporate U.S. Holder's gain or loss may be subject to preferential rates where the property is held for more than one year. The deductibility of capital losses is subject to limitations under the Code.

Capital gain or loss, if any, realized by a U.S. Holder on the sale, exchange or other taxable disposition of common shares or ADSs generally will be treated as U.S. source gain or loss for U.S. foreign tax credit purposes. In the case of a gain from the disposition of a share or ADS that is subject to Brazilian income tax (see "—Brazilian Tax Considerations—Taxation of Gains"), the U.S. Holder may not be able to benefit from the foreign tax credit for that Brazilian income tax (*i.e.*, because the gain from the disposition would be U.S. source income). Under recent U.S. regulations mentioned above, Brazilian withholding tax imposed on such U.S. source gain may not constitute a creditable tax. Moreover, even if the tax is a creditable tax, the U.S. Holder may be unable to benefit unless it can apply the credit against U.S. federal income tax payable on other income from foreign sources from the relevant foreign tax basket. Alternatively, the U.S. Holder may be able to take a deduction for the Brazilian income tax if it does not elect to claim a foreign income tax credit for any foreign taxes paid or accrued during the taxable year.

Non-U.S. Holders

A Non-U.S. Holder will not be subject to U.S. federal income tax in respect of gain recognized on a sale, exchange or other taxable disposition of common shares or ADSs unless:

- the gain is effectively connected with a trade or business of the Non-U.S. Holder in the United States (or is attributable to a permanent establishment maintained in the United States by that Non-U.S. Holder, if an applicable income tax treaty so requires as a condition for that Non-U.S. Holder to be subject to U.S. federal income taxation on a net basis in respect of gain from the sale or other disposition of the common shares or ADSs); or
- in the case of a Non-U.S. Holder who is an individual, that Non-U.S. Holder is present in the United States for 183 or more days in the taxable year of the sale and certain other conditions apply.

Effectively connected gains realized by a corporate Non-U.S. Holder may also, under certain circumstances, be subject to an additional branch profits tax (at a 30% rate or at a reduced rate as may be specified by an applicable income tax treaty).

Passive Foreign Investment Companies

Based on current estimates of our gross income, gross assets and the nature of our business, we believe that our common shares and the ADSs should not be treated as stock of a PFIC for U.S. federal income tax purposes. There can be no assurances in this regard (and it is possible the IRS could reach a contrary conclusion), however, because the application of the relevant rules is complex and involves some uncertainty. The PFIC determination is made annually and is based on the portion of our assets and income that is characterized as passive under the PFIC rules. Moreover, our business plans may change, which may affect the PFIC determination in the current or any future years.

In general, we will be a PFIC with respect to a U.S. Holder if, for any taxable year in which the U.S. Holder held ADSs or common shares, either (i) at least 75% of our gross income for the taxable year is passive income or (ii) at least 50% of the value (determined on the basis of a quarterly average) of our assets is attributable to assets that produce or are held for the production of passive income. For this purpose, passive income generally includes, among other things, dividends, interest, royalties, rents (other than certain rents and royalties derived in the active conduct of a trade or business), annuities and gains from assets that produce passive income. If we own at least 25% by value of the stock of another corporation, we will be treated for purposes of the PFIC tests as owning our proportionate share of the assets of the other corporation, and as receiving directly our proportionate share of the other corporation's income.

If we are treated as a PFIC, a U.S. Holder that did not make a "mark-to-market election" or "QEF election," each as described below, would be subject to special rules with respect to (a) any gain realized on the sale or other disposition of common shares or ADSs and (b) any "excess distribution" by us to the U.S. Holder (generally, any distributions to the U.S. Holder in respect of the common shares or ADSs during a single taxable year that are greater than 125% of the average annual distributions received by the U.S. Holder with respect to the common shares or ADSs during the three preceding taxable years or, if shorter, the U.S. Holder's holding period for the common shares or ADSs). Under these rules, (i) the gain or excess distribution would be allocated ratably over the U.S. Holder's holding period for the common shares or ADSs, (ii) the amount allocated to the taxable year in which the gain or excess distribution was realized would be taxable as ordinary income, (iii) the amount allocated to each prior year, with certain exceptions, would be subject to tax at the highest tax rate in effect for that year and (iv) the interest charge generally applicable to underpayments of tax would be imposed in respect of the tax attributable to each such prior year.

If we are treated as a PFIC and, at any time, we invest in non-U.S. corporations that are classified as PFICs (each, a "Subsidiary PFIC"), U.S. Holders generally will be deemed to own, and also would be subject to the PFIC rules with respect to, their indirect ownership interest in that Subsidiary PFIC. If we are treated as a PFIC, a U.S. Holder could incur liability for the deferred tax and interest charge described above if either (i) we receive a distribution from, or dispose of all or part of our interest in, the Subsidiary PFIC or (ii) the U.S. Holder disposes of all or part of its common shares or ADSs.

The special PFIC tax rules described above will not apply to a U.S. Holder if the U.S. Holder makes an election (i) to "mark-to-market" with respect to the common shares or ADSs (a "mark-to-market election") or (ii) to have us treated as a "qualified electing fund" (a "QEF election"). The QEF election is not available to holders unless we agree to comply with certain reporting requirements and provide the required annual information statements. The QEF and mark-to-market elections only apply to taxable years in which the U.S. Holder's common shares or ADSs are treated as stock of a PFIC. Our ADR depositary has agreed to distribute the necessary information to registered holders of ADSs.

A U.S. Holder may make a mark-to-market election if the common shares or ADSs are "regularly traded" on a "qualified exchange." Under applicable U.S. Treasury Department regulations, a "qualified exchange" includes a national securities exchange, such as the NYSE, that is registered with the SEC or the national market system established under the Exchange Act. Also, under applicable U.S. Treasury Department Regulations, PFIC securities traded on a qualified exchange are regularly traded on such exchange for any calendar year during which such stock is traded, other than in *de minimis* quantities, on at least 15 days during each calendar quarter. We cannot assure you that the ADSs will be eligible for a mark-to-market election.

A U.S. Holder that makes a mark-to-market election with respect to its ADSs must include for each taxable year in which the U.S. Holder's common shares or ADSs are treated as shares of a PFIC, as ordinary income, an amount equal to the excess of the fair market value of the common shares or ADSs at the close of the taxable year over the U.S. Holder's adjusted tax basis in the common shares or ADSs, and is allowed an ordinary loss for the excess, if any, of the adjusted tax basis over the fair market value of the common shares or ADSs at the close of the taxable year, but only to the extent of the amount of previously included mark-to-market inclusions (not offset by prior mark-to-market losses). These amounts of ordinary income, and any gain recognized on the sale, redemption or other taxable disposition of an ADS with respect to which such an election is in place, will not be eligible for the favorable tax rates applicable to qualified dividend income or long-term capital gains. A U.S. Holder's tax basis in the common shares or ADSs will be adjusted to reflect any income or loss amounts on its annual inclusions. Although a U.S. Holder may be eligible to make a mark-to-market election with respect to its common shares or ADSs, no such election may be made with respect to the stock of any Subsidiary PFIC that such U.S. Holder is treated as owning, because such Subsidiary PFIC stock is not marketable. Thus, the mark-to-market election will not be effective to avoid all of the adverse tax consequences described above with respect to any Subsidiary PFICs. U.S. Holders should consult their own tax advisors regarding the availability and advisability of making a mark-to-market election with respect to their common shares of ADSs based on their particular circumstances.

A U.S. Holder that makes a QEF election will be currently taxable on its *pro rata* share of our ordinary earnings and net capital gain (at ordinary income and long-term capital gain rates, respectively) for each of our taxable years, regardless of whether we distributed the income and gain. The U.S. Holder's basis in the common shares or ADSs will be increased to reflect taxed but undistributed income. Distributions of income that had previously been taxed will result in a corresponding reduction of tax basis in the common shares or ADSs and will not be taxed again as a distribution to the U.S. Holder.

In addition, notwithstanding any election that a U.S. Holder makes with regard to the common shares or ADSs, dividends that a non-corporate U.S. Holder receives from us will not constitute qualified dividend income if we are a PFIC either in the taxable year of the distribution or in the preceding taxable year.

Special rules apply with respect to the calculation of the amount of the foreign tax credit with respect to excess distributions by a PFIC or, in certain cases, QEF inclusions.

A U.S. Holder who owns common shares or ADSs during any taxable year that we are a PFIC in excess of certain *de minimis* amounts and fails to qualify for certain other exemptions would be required to file IRS Form 8621. In addition, under certain circumstances, the temporary regulations also require a “United States person” (as such term is defined in the Code) that owns an interest in a PFIC as an indirect shareholder through one or more United States persons to file Form 8621 for any taxable year during which such indirect shareholder is treated as receiving an excess distribution in connection with the ownership or disposition of such interest, or reports income pursuant to a mark-to-market or QEF election, among other circumstances. U.S. holders should consult their own tax advisors regarding the application of the PFIC rules to the common shares or ADSs.

Backup Withholding and Information Reporting

U.S. Holders

Dividends paid on, and proceeds from the sale, redemption or other taxable disposition of common shares or ADSs received by a U.S. Holder generally will be subject to information reporting and backup withholding, unless, in the case of backup withholding, the U.S. Holder provides an accurate taxpayer identification number or in either case otherwise establishes an exemption. Backup withholding is not an additional tax. The amount of any backup withholding collected from a payment to a U.S. Holder will be allowed as a credit against the U.S. Holder’s U.S. federal income tax liability and may entitle the U.S. Holder to a refund, provided that certain required information is timely furnished to the IRS.

Non-U.S. Holders

If common shares are held by a Non-U.S. Holder through the non-U.S. office of a non-U.S. related broker or financial institution, backup withholding and information reporting generally would not be required. Information reporting, and possibly backup withholding, may apply if the common shares are held by a Non-U.S. Holder through a U.S., or U.S.-related, broker or financial institution, or the U.S. office of a non-U.S. broker or financial institution and the Non-U.S. Holder fails to provide appropriate information. Information reporting and backup withholding generally will apply with respect to the ADSs if the Non-U.S. Holder fails to timely provide appropriate information. Non-U.S. Holders should consult their tax advisors regarding the application of these rules.

“Specified Foreign Financial Asset” Reporting

Owners of “specified foreign financial assets” with an aggregate value in excess of US$50,000 (and in some circumstances, a higher threshold) may be required to file an information report with respect to such assets with their U.S. federal income tax returns. “Specified foreign financial assets” generally include any financial accounts maintained by non-U.S. financial institutions as well as any of the following, but only if they are not held in accounts maintained by financial institutions: (i) stocks and securities issued by non-U.S. persons, (ii) financial instruments and contracts held for investment that have non-U.S. issuers or counterparties and (iii) interests in non-U.S. entities.

Prospective purchasers should consult their own tax advisors regarding the application of the U.S. federal income tax laws to their particular situations as well as any additional tax consequences resulting from purchasing, holding or disposing of our common shares or the ADSs, including the applicability and effect of the tax laws of any state, local or foreign jurisdiction, including estate, gift and inheritance laws.

10F. Dividends and Paying Agents

Not applicable.

10G. Statement by Experts

Not applicable.

10H. Documents on Display

We are subject to the information requirements of the Exchange Act and, accordingly, file reports and other information with the SEC. Reports and other information filed by us with the SEC may be inspected and copied at the public reference facilities maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. You can obtain further information about the operation of the Public Reference Room by calling the SEC at +1 (800) SEC-0330. Our SEC filings are also available to the public from the SEC's website at *http://www.sec.gov*. You may also inspect our reports and other information at the offices of the NYSE, 11 Wall Street, New York, New York 10005, on which the ADSs are listed. For further information on obtaining copies of our public filings at the NYSE, you should call +1 (212) 656-5060. We also file financial statements and other periodic reports with the CVM.

10I. Subsidiary Information

Not applicable.

10J. Annual Report to Security Holders

Not applicable.

Item 11. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to a number of different market risks arising from our normal business activities. Market risk is the possibility that changes in interest rates, currency exchange rates or commodities prices could adversely affect the value of our financial assets, liabilities, expected future cash flows or earnings. We maintain policies aimed at managing our exposure to these market risks. We may use financial instruments, such as derivatives, in order to achieve the main goals established by our board of directors to minimize our cost of capital and maximize our returns on financial assets, while observing credit and risk parameters, as determined by our board of directors. Derivatives are contracts whose value derives from one or more underlying financial instruments, indexes or prices defined in the contract. We only use well-understood and conventional derivative instruments for these purposes. These include futures and options traded on regulated exchanges and "over-the-counter" swaps, options and forward contracts.

Market Risk Exposures and Market Risk Management

Our treasury department is responsible for managing our market risk exposures. We use internal controls in order to:

- understand market risks;
- reduce our probability of financial losses; and
- reduce the volatility of our financial results.

The principal tools used by our treasury department are:

- *Sensitivity Analysis*. This measures the impact that movements in the price of different market variables, such as interest rates and exchange rates, will have on our earnings and cash flows; and
- *Stress Testing.* This measures the worst possible loss from a set of consistent scenarios to which probabilities are not assigned. The scenarios are deliberately chosen to include extreme changes in interest and currency exchange rates. Following is a discussion of the primary market risk exposures that we face together with an analysis of our exposure to each one.

Interest Rate Risk

We are exposed to interest rate risk on short- and long-term instruments as a result of refinancing of fixed-rate instruments included in our consolidated debt. Consequently, in addition to managing the currency and maturity of our debt, we manage interest costs through a balance between floating rate debt, which has inherently higher risk, and fixed-rate debt. We may use derivatives to achieve the desired ratio between floating-rate debt and fixed-rate debt, which ratio varies according to market conditions.

We are exposed to the following floating interest rates:

- U.S. dollar LIBOR, due to our floating rate U.S. dollar-denominated debt (usually trade finance related) and our cash position held offshore in U.S. dollars, which is invested in short-term instruments;
- TJLP, due to *real*-denominated debt indexed to this interest rate; and
- CDI (benchmark Brazilian *real* overnight rate), due to our cash held in Brazil (onshore cash) and to our CDI indexed debt.

	Notional amount	Maturities					
		2023	2024	2025	2026	2027	Thereafter
				(in millions of R$)			
Exposure as of December 31, 2022* (amortization)							
U.S. dollar LIBOR	7,046	1,571	430	1,579	697	590	2,178
U.S. dollar fixed rate	15,708	301	15	-	1,565	-	13,827
CDI	14,373	1,692	2,880	984	2,061	2,080	4,676
TJLP	803	62	74	74	79	80	434
Other	3,512	1,644	475	823	238	238	95

Our cash and cash equivalents were as follows as of the dates presented:

	December 31, 2021	December 31, 2022	Exposure
Cash in *reais*	6,562	5,196	CDI
Cash in U.S. dollars	9,244	6,795	LIBOR

The following table sets forth the average interest rate of our borrowings and financing:

	As of December 31, 2022	
	Average interest rate(*)	Total debt
		(in thousands of R$)
US$	6.21%	25,025,568
R$	15.40%	16,186,891
EUR	3.33%	228,489
		41,440,948

(*) In order to determine the average interest rates for our borrowings and financing agreements with floating rates, we used rates as of December 31, 2022.

We may conduct U.S. dollar futures operations on the B3 or over the counter to ensure the forward purchase or sale of U.S. dollars, which are settled by the difference in contracted R$/US$ buy or sell parity against the R$/US$ sell or buy parity. The main purpose of these operations is to hedge liabilities indexed to the U.S. dollar from Brazilian *real* fluctuations, which are affected by market, economic, political, regulatory and geopolitical conditions, among others. The gains and losses from these contracts are directly related to U.S. dollar exchange and CDI fluctuations. The following tables set forth the duration of our U.S. dollar and fixed-rate derivatives:

	As of December 31, 2022			
	Functional Currency	Notional Amount	Average Interest	Average Maturity (days)
		(in millions of R$)		
Hedge accounting of export	U.S. dollar	4,409	-	-
CDI to U.S. dollar swap	U.S. dollar	67	-	-
Real to U.S. dollar currency swap	U.S. dollar	115	-	-
IPCA-to-CDI interest rate swap	*Real*	3,600	-	-

Foreign Currency Exchange Rate Risk

Fluctuations in exchange rates can have significant effects on our operating results. They affect the value of our *real*-denominated assets, the carrying and repayment costs of our *real*-denominated financial liabilities, our *real*-denominated production costs, the cost of *real*-denominated capital items and the prices we receive in the Brazilian market for our finished steel products. We may contract derivatives to manage certain of our net foreign exchange rate exposures, trying to balance our non-*real*-denominated assets with our non-*real*-denominated liabilities and using derivative instruments to match them. However, at any given time we may have significant foreign currency exchange rate risk exposure.

Our exposure to the U.S. dollar is due to the following contract categories:

- U.S. dollar-denominated debt;
- offshore cash;
- currency derivatives;
- U.S. dollar indexed accounts payable and receivable (usually related to international trade, *i.e.*, imports and exports); and
- offshore investments, which comprise assets purchased offshore and denominated in U.S. dollars on our balance sheet.

The following table sets forth our exposure to U.S. dollar exchange rate risk:

	As of December 31,	
	2021	2022
	(*in thousands of R$*)	
U.S. dollar liabilities		
Loans and financing	3,866	4,594
Trade accounts payable	614	366
Others	149	23
Total liabilities	**4,629**	**4,983**
U.S. dollar assets		
Offshore cash and cash equivalents	1,656	1,191
Guarantee margin	24	27
Trade accounts receivable	212	316
Total assets	**1,892**	**1,534**
Total U.S. dollar exposure	**(2,737)**	**(3,449)**
Cash flow – hedge accounting	2,655	4,410
Exchange rate swap BRL x U.S. dollar	-	(115)
Exchange rate swap CDI x U.S. dollar	(67)	(67)
Total U.S. dollar net exposure	**(149)**	**779**

Our exposure to the euro is due to the following contract categories:

- euro-denominated debt;
- offshore cash;
- euro indexed accounts payable and receivable (usually related to international trade, *i.e.*, imports and exports); and
- offshore investments: assets that we bought offshore and that are denominated in euros on our balance sheet.

The following table sets forth our exposure to euro exchange rate risk:

	As of December 31,	
	2021	2022
	(*in millions of R$*)	
Euro liabilities		
Trade accounts payable	2	105

	As of December 31,	
	2021	2022
	(*in millions of R$*)	
Loans and financing	-	25
Others	1	45
Total liabilities	**3**	**175**
Euro assets		
Offshore cash and cash equivalents	75	104
Trade accounts receivable	5	37
Other	-	-
Total assets	**80**	**141**
Total euro exposure	**77**	**(34)**

Offshore Investments

We have capitalized our offshore subsidiaries domiciled in U.S. dollar-based countries with equity investments, and those investments are accounted as U.S. dollar investments. The result is that they are recorded as assets indexed to the U.S. dollar from an earnings perspective.

Commodity Price Risk

Fluctuations in the price of steel, iron ore and some of the commodities used in producing steel, such as zinc, aluminum, tin, coal, coke and energy, can have an impact on our earnings. We may contract derivatives to hedge our exposure to certain commodity price fluctuations.

Sensitivity Analysis

In the Brazilian macroeconomic environment, exchange rate variation is the most significant market risk we face. The U.S. dollar selling rate had an annual volatility of 16.1% from 2021 to 2022.

Sensitivity Analysis of Derivative Financial Instruments and Foreign Exchange Exposure

Scenarios 1 and 2 represent 25% and 50% appreciation of the foreign currency, using the respective closing selling rate as of December 31, 2022, as reported by the Central Bank, as a benchmark.

The currencies used in the sensitivity analysis and the respective scenarios are as follows:

	December 31, 2022			
Currency	**Exchange rate**	**Probable scenario**	**Scenario 1**	**Scenario 2**
U.S. dollar to *real*	5.2177	5.2070	6.5221	7.8266
Euro to *real*	5.5694	5.5580	6.9618	8.3541
U.S. dollar to euro	1.0674	1.0674	1.3343	1.6011

Set forth below are the effects on our income statement of scenarios 1 and 2:

	Notional	**Risk**	**Probable scenario**(*)	**Scenario 1**	**Scenario 2**
			(*in thousands of R$*)		
Instruments					
Gross exchange position	(3,449,813)	U.S. dollar	36,913	(4,500,022)	(9,000,045)
Cash flow hedge accounting	4,409,760	U.S. dollar	(47,184)	5,752,201	11,504,402
Exchange rate swap CDI x U.S. dollar	(67,000)	U.S. dollar	717	(87,396)	(174,793)
Exchange rate swap U.S. dollar to *real*	(115,000)	U.S. dollar	1,230	(150,009)	(300,018)
Net exchange position	**777,947**	U.S. dollar	**(8,324)**	**1,014,774**	**2,029,546**

(*) We calculated the probable scenario considering the following variations: 0.21% appreciation of the *real* against the U.S. dollar / 0.20% appreciation of the *real* against the euro and no variation of the euro against the U.S. dollar.
Source: Central Bank as of March 1st, 2023.

Sensitivity Analysis of Changes in Interest Rates

Scenarios 1 and 2 represent 25% and 50%, respectively, interest volatility growth as of December 31, 2022, and set forth below are the effects on our balance sheet:

					Impact on profit or loss	
	% p.a.	**Assets**	**Liabilities**	**Probable scenario***	**Scenario 1**	**Scenario 2**
				(*in thousands of R$*)		
Changes in interest rates						
CDI	13.65	5,026,521	(14,249,092)	(10,481,452)	(10,796,172)	(11,110,892)
TJLP	7.20	-	(1,044,833)	(1,120,061)	(1,138,868)	(1,157,675)
Libor	5.14	-	(6,936,984)	(7,293,466)	(7,382,586)	(7,471,707)
SELIC	13.75	-	(14,596)	(16,603)	(17,105)	(17,606)

(*) This sensitivity analysis assumes a probable scenario of interest rates as of December 31, 2022, as recorded in our assets and liabilities.

Market Price Risk of Our Common Shares

We are exposed to the risk of changes in the market price of our common shares due to investments made and investments recorded at fair value through profit or loss.

Item 12. Description of Securities Other Than Equity Securities

American Depositary Shares

Citibank, N.A., with its principal executive office located at 388 Greenwich Street, New York, New York 10013, serves as the depositary for the ADSs. ADR holders are required to pay various fees to the depositary, and the depositary may refuse to provide any service for which a fee is assessed until the applicable fee has been paid.

ADR holders are required to pay the depositary amounts in respect of expenses incurred by the depositary or its agents on behalf of ADR holders, including expenses arising from compliance with applicable law, taxes or other governmental charges, facsimile transmission or conversion of foreign currency into U.S. dollars.

ADR holders are also required to pay additional fees for certain services provided by the depositary, as set forth in the table below.

Depositary service	Fee payable by ADR holders
Issuance and delivery of ADRs, including in connection with share distributions or stock splits	US$2.00 for each 100 ADSs (or portion thereof)
Deposit of securities, including in respect of share, rights and other distributions	US$2.00 for each 100 ADSs (or portion thereof)
Withdrawal of deposited securities	US$5.00 for each 100 ADSs (or portion thereof)

Direct and Indirect Payments by the Depositary

The depositary reimburses us for certain expenses we incur in connection with the ADR program, subject to a ceiling agreed between us and the depositary from time to time. These reimbursable expenses currently include legal and accounting fees, listing fees, investor relations expenses and fees payable to service providers for the distribution of material to ADR holders. For the year ended December 31, 2022, we received no reimbursements by the depository of the ADR program, Citibank, N.A.

PART II

Item 13. Defaults, Dividend Arrearages and Delinquencies

None.

Item 14. Material Modification to the Rights of Security Holders and Use of Proceeds

None.

Item 15. Controls and Procedures

Disclosure Controls and Procedures

We carried out an evaluation, under the supervision of our chief executive officer and chief financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act. Based on this evaluation, our chief executive officer and chief financial officer have concluded that, as of December 31, 2022, CSN's disclosure controls and procedures are effective.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting.

Our internal control over financial reporting is a process designed under the supervision of our chief executive officer and chief financial officer and our audit committee and effected by our board of directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our consolidated financial statements for external purposes in accordance with IFRS.

Internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with IFRS and that our receipts and expenditures are being made only in accordance with the authorization of our management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

The audited financial statements of CSN included in this annual report include the results of acquisitions from their respective dates of acquisition. Management's assessment of internal control over financial reporting for the year ended December 31, 2022 does not include an assessment of LafargeHolcim (Brasil) S.A., Metalgráfica Iguaçu S.A., Santa Ana Energética S.A., Topázio Energética S.A., Companhia Estadual de Energia Elétrica – CEEE-G or Companhia Energética Chapecó – CEC, which were acquired during the year ended December 31, 2022. See "Item 4. Information on the Company—4B. Business Overview—Investments and Divestitures—Acquisition Activity."

Because of its inherent limitations, internal control over financial reporting may not prevent or detect material misstatements on a timely basis. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of our internal control over financial reporting based on the criteria for effective internal control over financial reporting established in "Internal Control – Integrated Framework," issued by the Committee of Sponsoring Organizations (COSO) of the Treadway Commission (2013). Based on this assessment, we concluded that our internal control over financial reporting is effective as of December 31, 2022.

Attestation Report of the Independent Registered Public Accounting Firm

Grant Thornton Auditores Independentes Ltda., our independent registered public accounting firm, audited, as of December 31, 2022, our internal control over financial reporting. For Grant Thornton Auditores Independentes Ltda.'s report dated April 27, 2023, see our audited consolidated financial statements included elsewhere in this annual report.

Changes in Internal Control over Financial Reporting

In the year ended December 31, 2022, there were no changes in our internal control over financial reporting that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 16. Reserved

16A. Audit Committee Financial Expert

Our audit committee comprises three members and each of them satisfies the audit committee membership independence requirements set forth by the SEC, the NYSE and Brazilian Corporate Law. After reviewing the qualifications of the members of our audit committee, our board of directors has determined that each member of our audit committee qualifies as an "audit committee financial expert," as defined by the SEC.

Our audit committee may be assisted by an external consultant, whenever necessary, that renders financial and consulting services, among others.

16B. Code of Ethics

We adopted a Code of Ethics in 1998, reinforcing our ethical standards and the values that apply to all of our employees, including executive officers and directors.

Our Code of Ethics was last updated in 2016 and copies are distributed to each employee of the organization, to the members of our board of directors and or our audit committee, and each signs a commitment letter, reinforcing their dedication to our established values. Since 2017, our Code of Ethics is available on our intranet to be consulted and accepted by employees electronically. In our governance structure, the compliance area is responsible for our integrity program, which aims to ensure compliance with ethical standards of conduct and transparency. This program includes continuous training for our employees and employees of our third parties, and also monitoring of compliance with laws, regulations, policies and internal standards.

There was no amendment to or waiver from any provision of our Code of Ethics in 2022. Our Code of Ethics is in compliance with the SEC requirements for codes of ethics for senior financial officers. A copy of our Code of Ethics is available on our website at *www.csn.com.br*.

16C. Principal Accountant Fees and Services

Our interaction with our independent auditors with respect to the contracting of services unrelated to the external audit is based on principles that preserve the independence of the auditors and are otherwise permissible under applicable rules and regulations. For the fiscal years ended December 31, 2021 and 2022, Grant Thornton Auditores Independentes Ltda. acted as our independent auditor.

The following table sets forth the services rendered and the related fees:

	Year ended December 31,	
	2021	**2022**
	(in thousands of R$)	
Audit fees	11,537.0	6,654.5
Audit-related fees	2,523.0	1,991.7
Total	**14,060**	**8,646.2**

Audit Fees

Audit fees in 2021 and 2022 comprised the aggregate fees billed and billable by our independent auditors in connection with the audit of our consolidated financial statements, reviews of interim financial statements and attestation services that are provided in connection with statutory and regulatory filings or engagements.

Audit-Related Fees

In 2021 and 2022, audit-related fees in the above table are fees billed and billable by our independent auditors for services that are reasonably related to the performance of the audit or review of our financial statements, and include tax compliance, issuance of comfort letters, due diligence and other assurance services. Services additional to the examination of our financial statements are submitted for prior approval to our audit committee in order to ensure that they do not represent a conflict of interest or affect the auditors' independence.

16D. Exemptions from the Listing Standards for Audit Committees

Not applicable. For a discussion on our audit committee, see "Item 6. Directors, Senior Management and Employees—6C. Board Practices—Audit Committee."

16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers

In December 2021, we announced a share repurchase program for up to 30,000,000 of our outstanding common shares, which program terminated in June 2022. As of December 31, 2022, we did not hold any of our common shares in treasury. The following table sets forth certain information regarding our share repurchases in 2022:

Program Period	Shares Approved	Shares Purchased	Average Price Paid per Share	Shares Cancelled	Shares Sold	Shares that May Yet Be Purchased
December 7, 2021 – June 30, 2022	30,000,000	14,298,500	24.70	-	-	15,701,500

16F. Change in Registrant's Certifying Accountant

Not applicable.

16G. Corporate Governance

Significant Differences between our Corporate Governance Practices and NYSE Corporate Governance Standards

We are subject to the NYSE corporate governance listing standards. As a foreign private issuer, the standards applicable to us are considerably different than the standards applicable to U.S. listed companies. Under the NYSE rules, we are required only to: (i) have an audit committee or audit board, pursuant to an applicable exemption available to foreign private issuers, that meets certain requirements, as discussed below, (ii) provide prompt certification by our chief executive officer of any material non-compliance with any corporate governance rules and (iii) provide a brief description of the significant differences between our corporate governance practices and the NYSE corporate governance practices required to be followed by U.S. listed companies. The discussion of the significant differences between our corporate governance practices and those required of U.S. listed companies follows below.

Majority of Independent Directors

The NYSE rules require that a majority of the board of directors consist of independent directors. Independence is defined by various criteria, including the absence of a material relationship between the director and the listed company. Brazilian law does not have a similar requirement. Under Brazilian law, neither our board of directors nor our management is required to test the independence of directors before their election to the board. However, both Brazilian Corporate Law and the CVM have established rules that require directors to meet certain qualification requirements and that address the compensation, duties and responsibilities of, as well as the restrictions applicable to, a company's executive officers and directors. While our directors meet the qualification requirements of Brazilian Corporate Law and the CVM, we do not believe that a majority of our directors would be considered independent under the NYSE test for director independence. Brazilian Corporate Law requires that our directors be elected by our shareholders at an annual shareholders' meeting.

Executive Sessions

NYSE rules require that non-management directors meet at regularly scheduled executive sessions without management present. Brazilian Corporate Law does not have a similar provision. According to Brazilian Corporate Law, up to one-third of the members of our board of directors can be elected from management. Mr. Benjamin Steinbruch, our chief executive officer, is also the chairman of our board of directors. There is no requirement that non-management directors meet regularly without management. As a result, the non-management directors on our board of directors do not typically meet in executive sessions without management present, although they may do so and then report to the entire board of directors the topics discussed and their suggestions.

Nominating and Corporate Governance Committee

NYSE rules require that listed companies have a nominating and corporate governance committee composed entirely of independent directors and governed by a written charter addressing the committee's required purpose and detailing its required responsibilities, which include, among others, identifying and selecting qualified board member nominees and developing a set of corporate governance principles applicable to the company. We are not required under Brazilian Corporate Law to have, and currently we do not have, a nominating and corporate governance committee.

Compensation Committee

NYSE rules require that listed companies have a compensation committee composed entirely of independent directors and governed by a written charter addressing the committee's required purpose and detailing its required responsibilities, which include, among others, reviewing corporate goals relevant to the chief executive officer's compensation, evaluating the chief executive officer's performance, approving the chief executive officer's compensation levels and recommending to the board non-chief executive officer compensation, incentive compensation and equity-based plans. We are not required under applicable Brazilian law to have, and currently do not have, a compensation committee. Under Brazilian Corporate Law, the total amount available for compensation of our directors and executive officers and for profit-sharing payments to our executive officers is established by our shareholders at the annual shareholders' meeting. The board of directors is then responsible for determining the individual compensation and profit-sharing of each executive officer, as well as the compensation of our board and committee members.

Audit Committee

NYSE rules require that listed companies have an audit committee that (i) is composed of a minimum of three independent directors who are all financially literate, (ii) meets the SEC rules regarding audit committees for listed companies, (iii) has at least one member who has accounting or financial management expertise and (iv) is governed by a written charter addressing the committee's required purpose and detailing its required responsibilities. However, as a foreign private issuer, we need only to comply with the requirement that the audit committee meet the SEC rules regarding audit committees for listed companies to the extent compatible with Brazilian Corporate Law.

We have established an audit committee, which provides assistance to our board of directors in matters involving our accounting, internal controls, financial reporting and compliance. Our audit committee recommends the appointment of our independent auditors to our board of directors and reviews the compensation of, and coordinates with, our independent auditors. It also reports on our auditing policies and our annual audit plan prepared by our internal auditing team. Our audit committee evaluates the effectiveness of our internal financial and legal compliance controls and comprises up to three independent directors elected by our board of directors for two-year terms.

As of the date of this annual report, our audit committee comprises Mr. Yoshiaki Nakano, Mr. Antonio Bernardo Vieira Maia and Mr. Miguel Ethel Sobrinho. Our audit committee may be assisted by an external consultant, whenever necessary, that renders financial and consulting services, among others. Each of the members of our audit committee satisfies the audit committee membership independence requirements set forth by the SEC and the NYSE. Each of the members of our audit committee has been determined by our board of directors to qualify as an "audit committee financial expert" within the meaning of the rules adopted by the SEC relating to the disclosure of financial experts on audit committees in periodic filings pursuant to the Exchange Act. For further information on our audit committee, see "Item 6. Directors, Senior Management and Employees—6C. Board Practices—Audit Committee."

Code of Business Conduct and Ethics

NYSE rules require that listed companies adopt and disclose a code of business conduct and ethics for directors, officers and employees, and promptly disclose any waivers of the code for directors or executive officers. We have adopted a Code of Ethics applicable to all our employees, including our executive officers and directors. We believe this code addresses the matters required to be addressed pursuant to the NYSE rules. For a further discussion of our Code of Ethics, see "—16B. Code of Ethics."

Shareholder Approval of Equity Compensation Plans

NYSE rules require that shareholders be given the opportunity to vote on all equity compensation plans and material revisions thereto, with limited exceptions. We currently do not have any such plan and, pursuant to our bylaws, we would require shareholder approval to adopt an equity compensation plan.

Corporate Governance Guidelines

NYSE rules require that listed companies adopt and disclose corporate governance guidelines. We have adopted the following corporate governance guidelines, either based on Brazilian law or our Code of Ethics, institutional handbook or policies and procedures:

- an insider trading policy for securities issued by us;
- a policy for the disclosure of material facts; and
- a sustainability policy.

16H. Mine Safety Disclosure

Not applicable as none of our mines are located in the United States and as such are not subject to the U.S. Federal Mine Safety and Health Act of 1977 or the U.S. Mine Safety and Health Administration.

16I. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

16J. Insider Trading Policies

We have adopted insider trading policies and procedures governing the purchase, sale and other dispositions of our securities by directors, senior management and employees, which policies and procedures are reasonably designed to promote compliance with applicable insider trading laws, rules and regulations, and any listing standards applicable to us.

PART III

Item 17. Financial Statements

See "Item 18. Financial Statements."

Item 18. Financial Statements

See our audited consolidated financial statements, together with the report of Grant Thornton Auditores Independentes Ltda. thereon, beginning on Page F-1 of this annual report.

Item 19. Exhibits

Exhibit Number		Description
1.1		Bylaws of the registrant (English translation), incorporated in this annual report by reference from our Form 6-K filed with the SEC on November 27, 2017.
2.1		Amended and Restated Deposit Agreement, among Companhia Siderúrgica Nacional, Citibank, N.A., as depositary, and the holders and beneficial owners of American Depositary Shares issued thereunder, incorporated in this annual report by reference from our Registration Statement on Form F-6 filed with the SEC on February 24, 2022.
2.2		Description of the registrant's securities registered under Section 12 of the Exchange Act, incorporated in this annual report by reference from our annual report on Form 20-F for the fiscal year ended December 31, 2019, filed with the SEC on April 3, 2020.
4.1	*	Investment Agreement, dated November 21, 2014, among Companhia Siderúrgica Nacional, Brazil Japan Iron Ore Corporation, POSCO, China Steel Corporation, Congonhas Minérios S.A. and Nacional Minérios S.A., as amended on November 15, 2015 and restated on November 27, 2015, incorporated in this annual report by reference from our annual report on Form 20-F for the fiscal year ended December 31, 2020, filed with the SEC on April 13, 2021.
4.2		Amendment, dated December 6, 2019, among Companhia Siderúrgica Nacional, Japão Brasil Minério de Ferro Participações Ltda., POSCO, China Steel Corporation and CSN Minérios Nacional S.A., to the Investment Agreement (Exhibit 4.1), incorporated in this annual report by reference from our annual report on Form 20-F for the fiscal year ended December 31, 2020, filed with the SEC on April 13, 2021.

Exhibit Number		Description
8.1	+	List of subsidiaries.
11.1	+	Policy for the Disclosure of Material Facts and the Trading of Securities Issued by CSN.
12.1	+	Section 302 Certification of Chief Executive Officer.
12.2	+	Section 302 Certification of Chief Financial Officer.
13.1	+	Section 906 Certification of Chief Executive Officer.
13.2	+	Section 906 Certification of Chief Financial Officer.
96.1		Technical Report Summary for Arcos Operations, incorporated in this annual report by reference from our annual report on Form 20-F for the fiscal year ended December 31, 2021, filed with the SEC on May 17, 2022.
96.2	+	Technical Report Summary for Casa de Pedra Operations.
101.INS	+	XBRL Instance Document.
101.SCH	+	XBRL Taxonomy Extension Schema.
101.CAL	+	XBRL Taxonomy Extension Scheme Calculation Linkbase.
101.DEF	+	XBRL Taxonomy Extension Scheme Definition Linkbase.
101.LAB	+	XBRL Taxonomy Extension Scheme Label Linkbase.
101.PRE	+	XBRL Instance Document.

*** Certain confidential portions of the exhibit have been omitted from the public filing.**
+ Filed herewith.

SIGNATURES

The registrant hereby certifies that it meets all the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

COMPANHIA SIDERÚRGICA NACIONAL

By:	/s/ *Benjamin Steinbruch*
Name:	Benjamin Steinbruch
Title:	Chief Executive Officer

By:	/s/ *Marcelo Cunha Ribeiro*
Name:	Marcelo Cunha Ribeiro
Title:	Chief Financial Officer and Investor Relations Officer

Dated: April 27, 2023