



**Purpose:** Establish the climate change commitments and guidelines for Vale and for entities of Vale System.

## Scope:

• This policy applies to Vale, its wholly owned (100%) subsidiaries and shall be reproduced to its direct and indirect, subsidiaries in Brazil and in other countries, always respecting these companies' constitutional documents and the applicable laws. Its adoption is encouraged in other entities in which Vale has a participation interest, in Brazil and in other countries.

## References:

- POL-0001-G – Code of ethical conduct.
- POL-0009-G – Risk Management Policy.
- POL-0019-G – Sustainability Policy.
- POL-0005-G – Human Rights Policy.

## Context:

The mining sector provides minerals and raw materials essential for economic development and social well-being. However, its production chain contributes to greenhouse gas emissions, particularly in steel-making and international shipping sectors. In the context of increased, evolving societal aims, and the subsequent expectations placed on companies to enable their achievement, companies who are committed to being responsible stewards face the challenge of rethinking how they create and share value with their stakeholders.

Vale recognizes that climate change represents one of the greatest challenges faced by societies around the globe. With the aim of answering to this challenge, Vale is committed to contribute with solutions that fall within criteria that would limit the increase in the average global temperature by up to 2°C, as defined in the Paris Agreement. Consequently, on November 26<sup>th</sup>, 2019, Vale's Board of Directors approved the company's net-zero mining strategy<sup>1</sup>.

Vale seeks to be a tireless protagonist towards the neutrality of GHG emissions in the steel, metallurgical and shipping industries. In this context, the company's main commitment is to become carbon-neutral in its own operations by 2050<sup>2</sup>, reason for which the "Scope 1" and "Scope 2" actions were established, as explained below.

## Strategic Guidelines:

Given the current mining context and company targets, Vale has defined the following net-zero carbon mining strategic guidelines:

- GHG emission<sup>3</sup> reduction: promote absolute emission reduction (scope 1<sup>4</sup> and 2<sup>5</sup>) aligned with the Paris Agreement, as well as actively contribute to reduce value-chain emissions (scope 3<sup>6</sup>).
- Protection and reforestation: act as a global catalyst for the protection and preservation of tropical forests.

<sup>1</sup> Vale's net zero strategy for climate change.

<sup>2</sup> Neutrality for operational emissions (scopes 1 and 2).

<sup>3</sup> Greenhouse gas emissions (GHG) considered: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, SF<sub>6</sub> and NF<sub>3</sub>. From now on called "emissions"; "carbon"; or GHG.

<sup>4</sup> Scope 1 definition: direct emissions controlled by the company.

<sup>5</sup> Scope 2 definition: indirect emissions from the consumption of electricity purchased.

<sup>6</sup> Scope 3 definition: other indirect emissions along the value chain.



- Renewable energy: expand the self-generation of power via renewable sources for use by the company's operations, promote a greater share of renewable sources and the electrification of Vale's energy matrix in order to substitute the use of fossil fuels (*PowerShift* program)<sup>7</sup>.
- Energy efficiency: promote the implementation of practices and routines for energy management and efficiency; create an environment that incentivizes the adoption of efficient and innovative behaviors and solutions for the rational use of energy, capable of stimulating the pursuit of differentiated technology solutions; take social, economic, and environmental impacts into constant account.
- Portfolio: align the business portfolio with the expectations that a transition to a low carbon economy present.

## Principles and commitments:

Considering these strategic guidelines, the company's performance will be guided by the following principles:

### **Principle 1: map opportunities and risks related to climate change.**

#### **Associated commitments:**

- Test the resilience of Vale's strategy against climate-related issues, taking into account a range of climate change scenarios and guided by recommendations from the Task Force on Climate-Related Financial Disclosures (TCFD)<sup>8</sup>.
- Quantify and manage potential physical risks associated with climate change.
- Promote studies on the impacts of climate change for communities adjacent to the company's operational presence.
- Assess and manage potential risks to human health and societal impacts deriving from climate change.
- Assess investment opportunities from a climate change context.
- Adopt internal carbon pricing based on a shadow price of US\$ 50/tCO<sub>2</sub>eq to be incorporated into cost analysis and overall investment decision-making processes.
- Apply a carbon shadow price for forestry-related projects (US\$ 10/tCO<sub>2</sub>eq).
- Promote structured engagement with key stakeholders, including governments, private sector, and civil society.

### **Principle 2: implement initiatives that contribute to Vale's internal efforts to reduce and neutralize emissions.**

#### **Associated commitments:**

- Apply the marginal abatement cost curve (MACC<sup>9</sup>) to prioritize the most cost-effective initiatives to reduce emissions.
- Promote electrification and replacement of fossil fuels in operations.
- Implement the Energy Efficiency Program in all Vale operational units, through the incorporation of energy efficiency indicators in management routines, the formation of a multidisciplinary team focused on performance management, and the development of initiatives to reduce energy consumption.
- Seek self-sufficiency in power, based on renewable sources.
- Recover areas in states of degraded vegetation and recover or protect forest areas in line with Vale's Forestry Targets.
- Preserve carbon stock in forests owned by Vale or owned by third parties in which Vale supports to maintain and protect.
- Develop and/or apply new technologies aligned with the emissions reduction and net-zero commitment.

<sup>7</sup> Global commitment announced on December 2019 aiming at reducing GHG emissions aligned with the Paris Agreement ambition.

<sup>8</sup> Task Force on Climate-Related Financial Disclosures (TCFD): task force, led by the Financial Stability Board, which promotes recommendations for the disclosure of climate-related financial information

<sup>9</sup> Marginal Abatement Cost Curve is a graphical representation of the potential of emission reduction and the costs.



- Engage with customers and suppliers in order to further reduce emissions along the production value chain.
- Establish partnerships for the decarbonization of the metallurgy, steel and shipping value chains.

**Principle 3: engage and establish partnerships in the search of transformative solutions for a carbon-neutral economy, especially in the production of steel and base metals.**

**Associated commitments:**

- Define and give visibility to Vale's ambitions associated with Scope 3 emissions.

**Principle 4: monitor, evaluate and disseminate the climate change strategy's performance in Vale's Reports and communication channels.**

**Associated commitments:**

- Define metrics for monitoring, and incorporate targets linked to the appraisal of performance, incorporating therein a potential impact on the employees' variable remuneration.
- Regularly report to stakeholders on the evolution of the initiatives adopted through the climate change agenda.
- Disclose Vale's greenhouse gas emissions inventory annually.
- Make climate-related information available through Vale's channels of communication.
- Encourage, through internal programs, the identification and dissemination of projects that exhibit excellence in their contribution to Vale's net-zero emissions targets.

## Vale's carbono neutral Governance:

The Low Carbon Forum is henceforth created. It shall be coordinated by the Executive Director of Sustainability, with support from the Executive Directors of the Coal, Strategy and Mineral Exploration, Business Support, Ferrous, and Base Metals business units, and with the participation of Vale's Chief Executive Officer as well as the Executive Director of Finance and Investor Relations. Together, their objectives shall be to maintain alignment between technical teams and Vale's liderance, to lead the management of the Vale Carbon Neutral strategy, and to validate action plans for related targets.

The group shall meet monthly with the climate change team and, depending on the purpose of the meeting, specific areas will be invited to each meeting such procurement, investor relations, strategy, engineering and others, with alternation between technical meetings and executive meetings, the latter with the participation of the Executive Directors. Thus, it is guaranteed that the technical teams that work daily with the topic of climate change subject are aligned with the company's top leadership on the priorities of the climate agenda and related work in progress such as: (i) prioritizing cost-effective emissions reduction initiatives, based on the marginal abatement cost curve; (ii) ratifying targets and quantitative data; (iii) implementing the TCFD recommendations, including quantifying climate risks and opportunities; (iv) monitoring the evolution of goals, key metrics and action plans.

As part of Vale's governance process, the results of this Forum will be periodically reported to the Sustainability Committee and to the Board of Directors.

## General Provision:

- This Policy shall be reviewed periodically, at least once every 3 (three) years or on demand.