

"We exist to improve life and transform the future. Together."

> For further information please visit our website at

www.vale.com/indonesia



@ptvaleindonesia



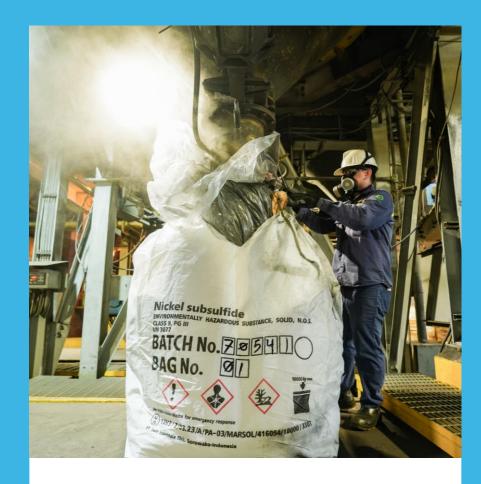
PT Vale Indonesia



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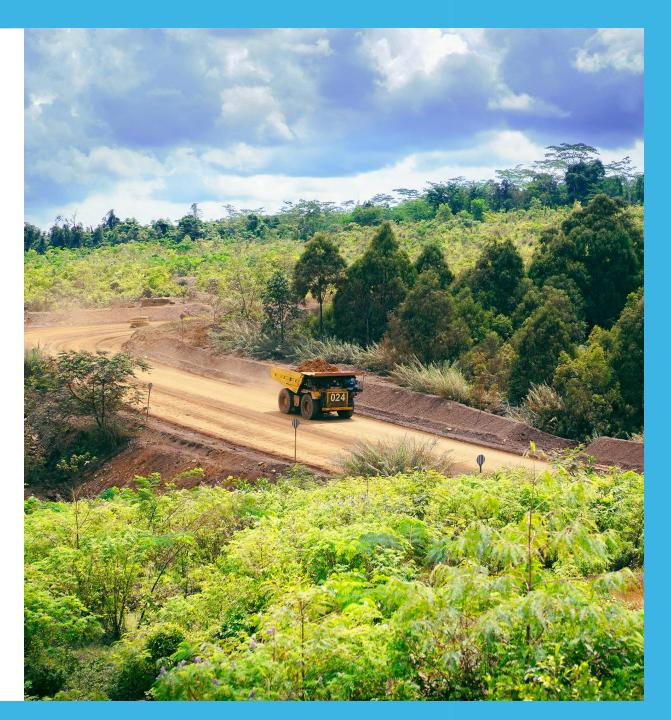
PT Vale Indonesia Tbk



PT Vale Indonesia Tbk

Briefing Book





Date of establishment:

July 25, 1968

Company activities:

Nickel ore mining and production of nickel in matte

Listing date on the Indonesia Stock Exchange (IDX):

May 16, 1990

Stock code: INCO

Operational area:

- Sorowako Block, East Luwu Regency, South Sulawesi
- IGP Morowali, Sambalagi & Bahomotefe Villages, Morowali Regency, Central Sulawesi
- IGP Pomalaa, Kolaka Regency, Southeast Sulawesi

Head office:

Sequis Tower, 20th Floor, Unit 6 & 7 Jl. Jend. Sudirman Kav. 71 Jakarta 12190, Indonesia

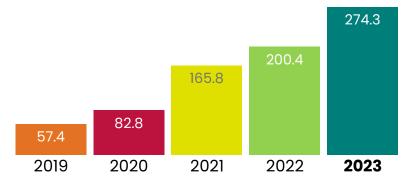
Phone : +62-21 524 9000 Facsimile : +62-21 524 9020

PT Vale Indonesia Tbk (PT Vale) operates under a Contract of Work, which was amended with a Special Mining Business Permit (IUPK) on May 13, 2024. The contract is valid until December 28, 2035, and the concession covers an area of 118,017 Ha.

The nickel production process in matte at the Sorowako Block uses pyrometallurgy technology (smelting laterite nickel ore).

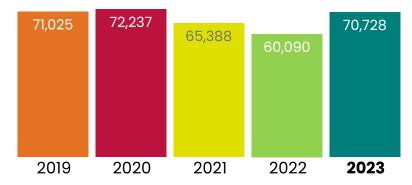
Concession Area 118,017 Ha **Shareholder Composition** Central Sulawesi 22,699 Ha **70**,566 Ha ■ 34% MIND ID Southeast 24,752 Ha ■ 33.89% Vale Canada Ltd Sulawesi **20.64% Public** South ■ 11.45% Sumitomo Metal Mining Co. Ltd Sulawesi Data as of July 1, 2024.

Profit (Loss) (in million US\$, as of December 31, 2023)



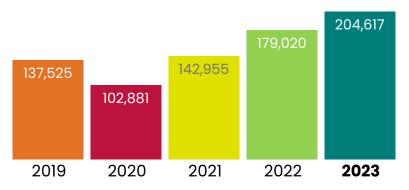
Production Volume

(in metric tons, as of December 31, 2023)



Contribution to the State Treasury

(in thousand US\$, as of December 31, 2023)



"There is no future without mining, and there can be no mining without concern for the future."

Concern for the future of the next generation underlies PT Vale's commitment to supporting the achievement of Sustainable Development Goals (SDGs) through responsible and sustainable mining practices, thereby bringing positive impacts to the environment and the community.



Clean Energy-Based Nickel Production

Since its inception, the company has begun by building and operating the Larona Hydroelectric Power Plant (PLTA), Balambano Hydroelectric Power Plant (PLTA), and Karebbe Hydroelectric Power Plant (PLTA). These three hydroelectric power plants utilize the flow of the Larona River, which is supplied with water from three lakes: Matano, Mahalona, and Towuti.

With a total installed capacity of 365 megawatts (MW) for energy supply to the processing plant, the operation of these three hydroelectric power plants supports PT Vale in reducing greenhouse gas emissions by more than 1 million tons of CO₂ equivalent per year, compared to coal-fired power plants.

In addition to supporting operational needs, 10.7 MW of the electricity generated by these hydroelectric power plants is also distributed through the State Electricity Company (PLN) to meet the electricity needs of the East Luwu community.







LARONA DAM

Built in 1975 and operational since 1979, with an average power production of 165 MW

Dam:

Type: CFR (Concrete Face Rockfill)

Capacity: 10 million m³ Crest length: 550 m

Crest elevation: 322.2 meters above sea level

(masl)

Canal:

Length: 6,969 m Width: 14.4 m

Discharge: 148 m³/second

BALAMBANO DAM

Built in 1995 and operational since 1999, with an average power production of 110 MW.

Dam:

Type: RCC (Roller-compacted Concrete)

Capacity: 31.5 million m³ Crest length: 350 m Crest elevation: 167 masl

Spillway:

Size: 8 x 15.076 m

Capacity: 3 x 750 m³/second

KAREBBE DAM

Built in 2005 and operational since 2011, with an average power production of 90 MW.

Dam:

Type: LCVC (Low Cement Conventional

Concrete)

Capacity: 13.58 million m³ Crest length: 202 m

Crest elevation: 79.5 masl

Spillway:

Type: 1 sluice gate spillway + 2 natural spillways

Size: 8 x 18.68 m

Capacity: 4,470 m³/second

Emission Reduction Commitment

PT Vale canceled its Coal Conversion Project (CCP), which had the potential to reduce company costs by approximately US\$40 million per year. With this cancellation, the company avoids an increase in greenhouse gas emissions by an average of 200,000 tons of CO₂ per year.

In 2019, PT Vale began utilizing electric boilers powered by hydroelectric power plants for its processing plant operations. With this innovation, the use of high sulfur fuel oil (HSFO) was reduced by 67,047 barrels per year. PT Vale's electric boilers also became the first to be used in the processing industry in Southeast Asia.

Since 2015, the company has also implemented a program using fatty acid methyl ester (FAME) as biodiesel for operational vehicles.

Throughout 2022, PT Vale reduced its greenhouse gas emissions by 330,688 tons CO_2 eq to 1,640,387 tons CO_2 eq, which is 17% lower than in 2021, which was 1,971,075 tons CO_2 eq. Over a five-year period, from 2018 to 2022, PT Vale's greenhouse gas emission reduction reached 373,563 tons CO_2 eq.



Application of Soil and Water Conservation Principles as Efforts to Protect Lake Matano

The first step taken by PT Vale in its environmental conservation efforts in mining activities is to **integrate planning** with mining operations.

Land clearing is restricted to areas proven to be rich in nickel ore. **Progressive reclamation** is then carried out on lands that have been mined, to minimize open areas.

In terms of controlling and managing mining waste, PT Vale has built more than 100 **sediment control facilities** in stages. These facilities have a total capacity of >15 million m³. Monitoring, maintenance, and dredging of sedimentation facilities are also conducted regularly.

An **innovative liquid waste management facility**, the Lamella Gravity Settler (LGS), has also been established to reduce the load of Total Suspended Solids (TSS) pollution





Fiona Pond Output Output



High-Tech Liquid Waste Treatment

To control liquid waste (effluent) from mining areas and processing plants, PT Vale has constructed more than 100 sedimentation ponds in the Sorowako Block

The sedimentation ponds are equipped with two liquid waste treatment facilities to reduce water body pollution:

- 1. Pakalangkai Wastewater Treatment, which has been operational since 2013,
- 2. Lamella Gravity Settler (LGS), which has been operational since 2014.

LGS technology is typically used for drinking water treatment.



PT Vale is the first mine to use LGS technology



Liquid waste treatment is also accompanied by regular checks on the water quality of the lakes.



Water quality checks are conducted in collaboration with an independent team.



The measurements of TSS and Cr6+ levels in Lake Matano and Lake Mahalona consistently meet or exceed the government standards.

Lamella Gravity Settler

LGS is the first technology of its kind in Indonesia for mining, developed through research and collaboration with BPPT over a period of 2 years. This technology is typically used for water purification for drinking water production.





INLET
TSS: 1,707 mg/L
Cr tot: 10 mg/L

OUTLET TSS: 8 mg/L Cr tot: 0.3 mg/L





Sawerigading Wallacea Biodiversity Park

Inaugurated by President Jokowi on March 30, 2023, this integrated facility represents our commitment to achieving integrated mining while preserving biodiversity.





- Managed area: 15 hectares; development area: 60 hectares.
- Integrated with a **Nursery Center** with a capacity of 750,000 seedlings per year.
- Seedlings from this facility are crucial for revegetation.



- It is home to 30 deer, 10 of which have been released into the wild.
- A facility for breeding endemic butterflies will be built.
- It has a Wooden House and DOJO (training center) for environmental-related activities.



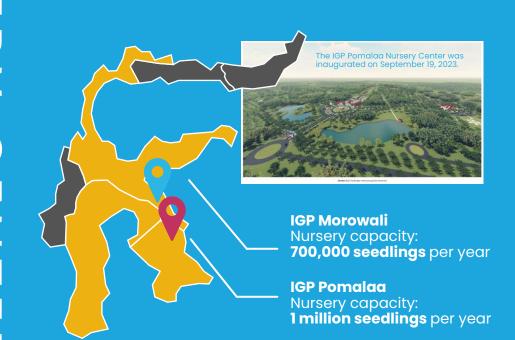
- It has an Arboretum with a collection of 74 species of local and endemic trees.
- Seedlings from the Arboretum have been donated to various regions through a number of reforestation activities organized by the company.
- The name **Sawerigading** is derived from the name of the grandson of the god Batara Guru in local mythology. Meanwhile, **Wallacea** refers to the line indicating biodiversity in Indonesia.

Collaboration with KLHK for Nursery Centers in two provinces.

In support of our two development projects in Morowali, Central Sulawesi, and Pomalaa, Southeast Sulawesi, we are also constructing **Nursery Centers.**

Specifically, we are collaborating with the Ministry of Environment and Forestry (MoEF) to build these facilities.

Not only do they support revegetation as part of post-mining activities, but large-scale nurseries also play a role in reducing greenhouse gas emissions.



Land Reclamation and Rehabilitation

We integrate mining land clearing activities with **reclamation** (land restoration) and **rehabilitation** (replanting).

By the end of December 2023, the number of trees planted in reclamation areas has reached 4.74 million trees.





+4 million

trees have been planted in reclamation areas.

+2 million

local tree seedlings.

+180 thousand endemic tree seedlings.

+80 thousand

ebony trees planted, representing the largest ebony conservation effort in Indonesia.

As of the end of December 2023, the area of open land is 5,667.73 Ha, and the area of reclaimed land has reached 3,973 Ha. The remaining open land area is 1,694.15 Ha.

PT Vale has completed reforestation outside the concession area at a rate 2.5 times the area of land cleared for mining



We are implementing cross-border watershed (DAS) rehabilitation in accordance with obligations from MoEF.

- By the end of 2023, we have planted in watershed areas totaling 10,000 hectares, across 14 districts in South Sulawesi.
- Watershed rehabilitation activities in this region have entered the second-year planting and maintenance phase (P2).



On July 28, 2022, we received the trust from KLHK to rehabilitate 435 hectares of land in 3 districts in West Java: Sumedang, Tasikmalaya, and Pangandaran.

Watershed rehabilitation in this area will continue until 2025.

RDF (Refuse Derived Fuel)

Domestic Waste Management Solutions



PT Vale Indonesia Tbk is committed to providing maximum benefits for the protection of natural resources and the environment, as well as contributing to the surrounding community.

One of these contributions is through the planning of a circular economy-based domestic waste management project, which includes sorting economically valuable waste and utilizing waste as an alternative fuel in the form of RDF (Refuse-Derived Fuel).

This project will also benefit public health and potentially reduce CO₂ emissions from waste disposal using the sanitary landfill method.

This plan aligns with PT Vale's commitment to achieving the Zero Waste to Landfill target by 2025.

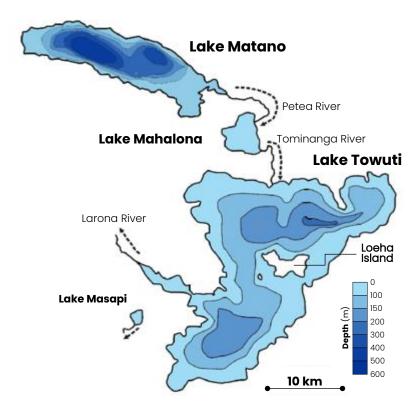
The waste management facility, which focuses on sorting and processing waste into RDF using bio-drying technology, will have a capacity of over 50 tons per day. It will serve waste management needs in the surrounding operational areas of PT Vale, including Sorowako Village, Nikkel Village, Wasopunda Village, and Wawondula Village. This is equivalent to servicing around 17,000 households.

The entire waste management process is expected to sort and generate economically valuable waste worth Rp1.2 billion per year, benefiting the local community. Additionally, the project has the potential to produce > 5,000 tons of renewable alternative fuel annually, which can be utilized by the company.

Domestic Waste Management Facility Plan



Sorowako Block is surrounded by the Malili lake ecosystem, which consists of 3 La Galigo lakes: Lake Matano, Lake Towuti, and Lake Mahalona



PT Vale submitted a proposal for a Water Utilization Business Permit (IUPA) in the Matano Lake Nature Tourism Park area to the Minister of Environment and Forestry through letter No. 694/SPF-S/VIII/2017 dated August 2, 2017.

The calculation of potential Non-Tax State Revenue (PNBP) from PT Vale:

Water Utilization Business Permit (IUPA)

= Rp1.25 billion over 10 years.

Water Utilization Charges

- = 8% x Rp12,000 per month x 2,581 million m³
- = Rp2.47 billion per month.

Lake Matano

- The deepest in Southeast Asia (± 590 meters).
- Many potential spots for tourism.
- Used as a crossing route.
- Ide Beach is a favorite tourist spot for the local community.
- The Matano Lake Festival is held every year.

Lake Towuti

- The second largest after Lake Toba.
- Loeha Island is the largest island in the TWA area.
- Loeha Island is a safe habitat for various bird species.
- Many potential spots for tourism.
- Used as a crossing route.
- Its water flows into the Larona River, which is utilized for the hydroelectric power plant.

The Three Lakes

- Representations of tectonic lake ecosystems.
- Connected by the Petea River and Tominanga River.
- Natural habitat for 27 species of mollusks and 13 species of endemic freshwater fish from Sulawesi (Whitten et al, 2002).
- The Tominanga River, in particular, is a natural habitat for the estuarine crocodile (Crocodylus porosus).

LEGAL STATUS OF THE LAKE MATANO, MAHALONA, AND TOWUTI NATURE TOURISM PARKS

Designation

Minister of Agriculture Decree No. 274/Kpts/Um/ 4/1979 dated April 24, 1979.

Establishment

Minister of Forestry Decree No. SK/6590/Menhut-VII/KUH/2014 dated October 28, 2014.

- Lake Matano TWA:
 23.219.30 Ha
- Lake Mahalona TWA:2.289.30 Ha
- Lake Towuti TWA:62,133.52 Ha

Block Arrangement

Lake Matano TWA

Forest Protection and Nature Conservation Directorate General Decree No. 141/IV-SET/2015 dated May 25, 2015

- Protection Block: 7,247
- Tourism Block: 14,813 Ha
- Rehabilitation Block:1,490 Ha
- Special Block: 1,450 Ha

Lake Mahalona TWA

KSDAE Directorate General Decree No. SK.206/KSDAE/ SET/KSA.0/5/2017 dated May 31, 2017

Lake Towuti TWADocument revision.

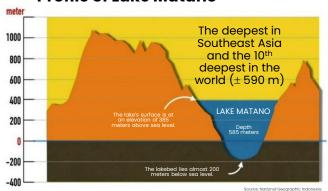
Lake Matano TWA

> Butterfly Beach

Ide Beach <

Limnologically, it has many unique features, including a crypto-depression lakebed, extremely clear water, biodiversity, geology, and panoramic views, as well as displaying unusual phenomena from a biogeochemical perspective.

Profile of Lake Matano



CHRONOLOGY OF THE AREA

1979

Designation: Minister of Agriculture Decree No. 274/Kpts/Um/4/1979 dated April 24, 1979

Sorowako

2012

RPJP (Long-Term Planning): Director General of PHKA Decree No. SK.194/IV-SET/2012 dated November 21, 2012.

2014

Establishment: Minister of Forestry Decree No. SK.6590/Menhut-VII/KUH/2014 dated October 28, 2014.

2015

an ancient tectonic lake, formed at the end of the

Block Arrangement:
Director General of Forest
Protection and Nature
Conservation Decree No.
141/IV-SET/2015 dated May
25, 2015.

Site Design: Director of Environmental Services Utilization in Conservation Forests Decree No. SK.154/PJLHK-2/2015 dated November 9, 2015.

2018

Proposal for Biosphere Reserve.



Buffer Villages:

- 1. Matano Village
- 2. Nuha Village
- 3. Nikkel Village
- 4. Sorowako Village
- 5. Magani Subdistrict



Biodiversity:

>90% of species in Lake Matano are endemic (Germadan, 2014)



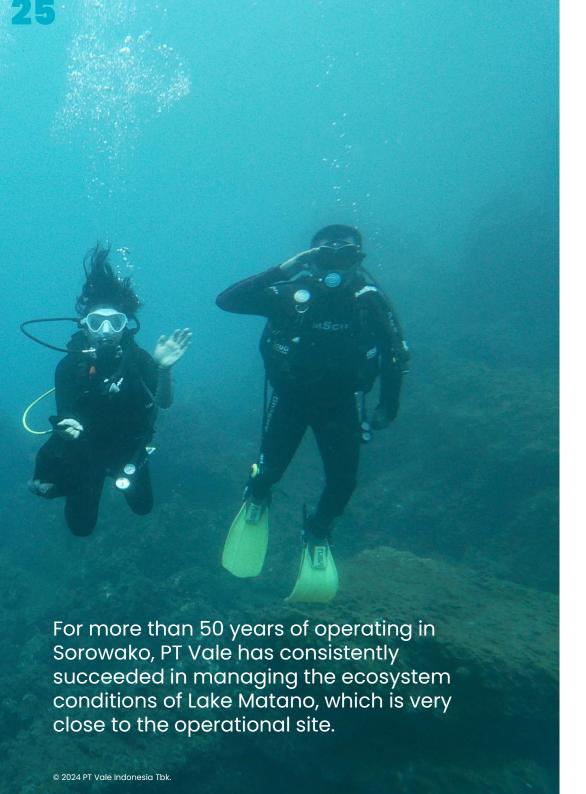
Tourism:

Butterfly Beach, Ide Beach, Lake Matano Festival



Water Resources:

Tourist attractions, transportation, fisheries, PDAM, and hydropower plants



Drinking Water Standard Bottled Mineral Water Standard Lake Matano Total Dissolved Solids (mg/l) 500 320 138











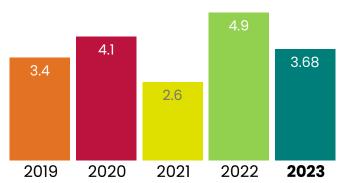


Community Development and Empowerment Program

PT Vale implements social investment through the Community Development & Empowerment Program (PPM). For the period 2018-2022, PPM synergizes with government regulations to stimulate village development, especially around the company's mining operation areas. The community development program emphasizes the partnership of three pillars: the Government, the Community, and the Company.

In the empowerment areas, PT Vale has been training farmers to practice environmentally friendly organic rice cultivation since 2015. In 2017, the company began fostering and mentoring micro, small, and medium enterprises (MSMEs) in the empowerment areas. By the end of 2023, approximately 61,598 people in the company's empowerment areas have benefited from the implementation of PPM.

PPM Fund (in million US\$, as of December 31, 2023)











Enhancing Sustainable Corporate Governance

Implementing governance principles is fundamental to all operational and community activities at PT Vale, aiming to create greater value and enhance stakeholder trust.

We continuously refine our application of Good Corporate Governance (GCG) by adopting changes in regulations and best practices through charters, norms, internal policies, standard operating procedures, and business processes.

We have zero tolerance for corruption and abuse of power for personal gain. PT Vale utilizes e-procurement as one approach to minimize corruption risks, which is part of our contract management transparency and includes anti-bribery and anti-corruption clauses.

Since January 1, 2016, PT Vale has established an independent reporting channel, the Vale Whistleblower Channel (VWC). This service is managed independently and professionally by a violation reporting service provider in Indonesia. VWC is directly connected to Vale S.A.'s Ethics and Compliance Department and serves as a channel for reporting suspected misconduct, fraud, or policy violations.

Vale Whistleblower Channel (VWC)



SMS/WhatsApp: **0812-8040-0622**

Hotline: **0-800-100-2233**

Email: vwc@tipoffs.info

https://idn.deloitte-halo.com/valewhistleblowerchannel/



Started operations in Sorowako, East Luwu Regency, South Sulawesi as an integrated nickel mining and processing company.



1979

The 165 MW Larona Hydroelectric Power Plant is being operated.



1990

First divestment and initial public offering (IPO).



1999

The 110 MW Balambano Hydroelectric Power Plant was put into operation.



2006

A 2.5 Ha Nursery is operated. Production per year is 700,000 seedlings.



2007

The ESP and Bag House facilities began operating to control particulate emissions at the processing plant.



2011

- The 90 MW Karebbe Hydroelectric Power Plant was put into operation.
- PROPER Blue from the Ministry of Environment and Forestry, lasts until 2017.



2012

Sustainable Business Awards for Best Water Management category.



2014

- Ebony tree conservation.
- The Integrated Community Development Program (PTPM) was launched..



2015

- Environmental Management System begins to be implemented.
- The Sustainable Environmentally Friendly Healthy Agriculture Program (PSRLB) was introduced.



2016

Vale Whistleblower Channel (VWC) opens.



2017

The first book in Indonesia on biodiversity conservation in the mining sector was prepared and published with IBCSD.



2018

- PT Vale has been operating for 50 years.
- Community Development Program (PPM) 2018-2022 launched.
- A new record of 34,138,226 hours worked without a fatality was achieved.



2019

Green PROPER from the Ministry of Environment and Forestry, lasts until 2023.



2020

Second divestment; sale and transfer of 20% shares to PT Indonesia Asahan Aluminum/MIND ID.



2021

PT Vale agreed to collaborate with TISCO and Xinhai to develop nickel processing facilities at IGP Morowali.



2022

- PT Vale and Huayou agreed to collaborate to develop nickel processing facilities in Pomalaa.
- Groundbreaking of IGP Pomalaa, which will produce EV battery raw materials, November 27, 2022.



2023

- Groundbreaking of IGP Morowali, project with RKEF smelter, February 10, 2023.
- Groundbreaking of the Ferrari Flyover, the longest flyover in East Luwu, March 2, 2023.
- Inauguration of the Sawerigading Wallacea Biodiversity Park by President Jokowi, March 30, 2023.
- Groundbreaking of IGP Pomalaa Nursery, September 19, 2023.
- Launch of the first electric bus, December 14, 2023.



2024

Third divestment; sale and transfer of additional 14% shares to MIND ID.

PT Vale Roadmap to Reduce Carbon Emissions 33% by 2030 and Achieve Net Zero GHG Emissions by 2050

Up to 2023

- Up to 2023Switching to Electric Boiler #1
- Fuel conversion to biodiesel (B30, B35) Clean Energy Optimization
- (Hydroelectric Power Plant) Modular Screening Station (reduced) travel distance)
- 18 MW Power Stabilization
- Electrification of mining equipment
- Switching to biomass as a reducing agent in Reduction Kilns
- Wet Ore Storage redesign (humidity) reduction)

2024 - 2028

- Larona Penstock Strengthening
- Switch to Electric Boiler #2
- Use of Solar PV at Mangkasa Point & **Balantang Harbor**
- · Switching to biomass as a reducing agent in Reduction Kilns
- Utilization of waste heat from Furnace and Reduction Kiln
- Solar Power Plant 120 MWp

- Opportunities for converting fuel to hydrogen
- Reforestation

2030

2050











Absolute reduction of GHG Emissions 33%

Net Zero GHG Emissions

Technological Innovation Pathway



Switching fuel & energy sources towards New Renewable Energy

- Biomass for Reduction Kilns and Converters
- Utilization of biodiesel
- Solar PV



Electrification of essential equipment

- Use of electric boilers
- Electric truck study



Increased efficiency

- Reline hydropower canals
- Reducing water use for ore screening

Biodiversity Innovation Pathway



Progressive reclamation of post-mining areas

• >3.600 Ha by 2023



Rehabilitation of land outside the concession area

- 10.000 Ha in South Sulawesi
- 435 Ha in West Java

Biodiversity program



- Sawerigading Wallacea Biodiversity Park development
 Seedlings donations
 Various education for the community

PT Vale has a \$9 billion investment program to support nickel downstream processing in Indonesia, utilizing clean energy.





IGP Sorowako Limonite

- Collaboration with Huayou to build a High-Pressure Acid Leach (HPAL) technology plant.
- Production capacity reaches 60 kt Ni/year in Mixed Hydroxide Precipitate (MHP).
- Partnering with international automaker Ford Motor Co.
- Total investment amounts to \$2.0 billion (HPAL plant and mine).
- Project has been underway since 2023.







IGP Pomalaa

- High-Pressure Acid Leach (HPAL) Nickel Plant in MHP.
- Production capacity reaches 120 kt Ni/year in partnership with Huayou and Ford.
- Total investment amounts to **US\$4.5 billion** (HPAL plant and mine).
- Project has been underway since 2022.
- Includes the development of a Nursery with a capacity of 1 million seedlings/year.





IGP Morowali

- Rotary Kiln Electric Furnace (RKEF) plant in partnership with other companies.
- Production capacity reaches 73 kt Ni/year in ferronickel (FeNi).
- Total investment amounts to U\$\$2.6 billion (RKEF plant and mine).
- Project has been underway since 2022.
- Includes the development of a Nursery with a capacity of 700 thousand seedlings/year.

IGP Morowali

Indonesia Growth Project (IGP) Morowali is an integrated nickel mining and processing project with an investment value of US\$2.6 billion.

This project was inaugurated on February 10, 2023, by the Coordinating Minister for Economic Affairs, Airlangga Hartarto.



Mining with Cutting-Edge Technology

Mining activities by PT Vale take place in East Bungku. Nickel ore from the mining operations is then processed at the RKEF technology facility in Sambalagi Village.



Trusted Partners

This RKEF plant is built by PT Vale in collaboration with our partners.



Local Workforce Integration

The project will create up to 2,000 jobs during the construction phase.



Involvement of Local Entrepreneurs

We will also maximize the involvement of local entrepreneurs at the Morowali Site. We have conducted a series of Technical Training sessions for local entrepreneurs to participate in goods and services tenders.

The smelter at IGP Morowali will operate with a production capacity of up to 73 kt Ni per year.



IGP Pomalaa

PT Vale, in partnership with Zhejiang Huayou Cobalt Co., Ltd., is committed to implementing sustainable mining practices in Bumi Mekongga, Southeast Sulawesi.

This project was inaugurated by Indonesia's Coordinating Minister for Maritime Affairs and Investment, Luhut Binsar Pandjaitan, on November 27, 2022, with support from local regional leaders.



The project has the capacity to produce up to 120,000 metric tons of nickel in the final MHP (mixed hydroxide precipitate) product, a key component for **electric vehicle** (EV) batteries

Our investment in the Pomalaa Block for mining and HPAL facilities amounts to US\$4.5 billion.



Bringing Sustainable Mining Practices

PT Vale and its partners are committed to introducing sustainable mining practices at the Pomalaa Block. This includes the establishment of large-scale nursery facilities, integrated waste processing facilities, and air emission treatment facilities.



Optimizing Local Talent

By the end of December 2023, 644 (70%) of the total 914 workers employed in the mining area are local workers. This number will continue to grow in line with the project's development needs.



Workforce Training

We collaborate with Job Training Center (BLK), PSDKU (Study Programs Outside the Main Campus) of Ujung Pandang Polytechnic in Kolaka, and the Community Development and Empowerment Program (PPM) for training and competency development at Kolaka Job Training Center (BLKK), focusing on human resource development.