



PT HALMAHERA PERSADA LYGEND



2022

Sustainability Update Report

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ABOUT THIS REPORT

关于本报告

Welcome to PT HALMAHERA PERSADA LYGEND'S (HPL) second sustainability report covering the 2022 calendar year.

This report is an update for our stakeholders and builds on our previous Environmental, Social, and Governance (ESG) Report 2021 (ESG Report 2021). This report provides key ESG performance updates for our processing and refining facility (refinery) on Obi Island in North Maluku, Indonesia. Information reported is from January 1 to December 31, 2022, with the previous year's data, where available. Given the timing of this report's publication, we have included some significant 2023 developments.

As an associate company of PT Trimegah Bangun Persada Tbk (PT TBP Tbk) ("Harita Nickel" or the "Group"), and given that our operations are in the Harita Nickel complex, our policies, measures, and frameworks are guided by or aligned with the wider Group. We are also guided by the policies and structures of our Hong Kong-listed majority shareholder, PT Lygend Resources & Technology Co., Ltd.

We strive to meet our stakeholders' needs and voluntary reporting standards and requirements. In 2021, PT HPL conducted a materiality assessment to determine the sustainability topics most important to our business and stakeholders. This report is an extension of this exercise and includes additional disclosure based on stakeholder feedback, requests, and concerns raised during the reporting period. This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards, and the GRI Content Index can be found [here](#).

Although we are not publicly listed, we are the subsidiary of a Hong Kong-listed company and are an associate company of an Indonesian-listed company. As such, we have referred to the relevant listing requirements, namely the Hong Kong Stock Exchange (HKEX) ESG Reporting Requirements, the Indonesian Peraturan Otoritas Jasa Keuangan (POJK 51) 2017 and the Indonesian Surat Edaran Otoritas Jasa Keuangan (SEOJK 16) 2021.

欢迎阅读 PT Halmahera Persada Lygend (HPL) 针对 2022 年度的第二份可持续发展报告。

本报告是面向我们利益相关方的更新，它以我们之前的《2021 年环境、社会和治理 (ESG) 报告》（《2021 年 ESG 报告》）为基础。本报告提供我们位于印度尼西亚北马鲁古奥比岛的加工和精炼设施（精炼厂）的主要 ESG 绩效更新。报告涵盖 2022 年 1 月 1 日至 12 月 31 日的信息，以及前一年的数据（如可用）。鉴于本报告发布的时间，我们已经纳入 2023 年的一些重大进展。

作为 PT Trimegah Bangun Persada Tbk (PT TBP Tbk) ("Harita Nickel"或"集团") 的关联公司，鉴于我们的业务设在 Harita Nickel 综合体，因此我们的政策、措施和框架由更广泛的集团提供指导或与集团保持一致。我们还遵循在中国香港上市的大股东 PT Lygend Resources & Technology Co., Ltd. 的政策和结构。

我们努力满足利益相关方的需求以及自愿报告标准和要求。2021 年，PT HPL 开展了一项重要性评估，以确定对我们的业务和利益相关方最重要的可持续发展主题。作为这项工作的延伸，本报告包括了根据利益相关方的反馈、要求和报告期内提出的问题进行的额外披露。本报告根据全球报告倡议 (GRI) 标准编制，GRI 内容索引可在[此处](#)找到。

虽然我们并未公开上市，但我们是一家中国香港上市公司的子公司，也是一家印度尼西亚上市公司的关联公司。因此，我们参考了相关上市要求，即香港证券交易所 (HKEX) ESG 报告要求、2017 年印度尼西亚 Peraturan Otoritas Jasa Keuangan (POJK 51) 和 2021 年印度尼西亚 Surat Edaran Otoritas Jasa Keuangan (SEOJK 16)。

As an update report, this document should be read in conjunction with the [PT HPL ESG Report 2021](#) and disclosure on our [website](#). Other related references include Harita Nickel's latest Sustainability Report: [PT TBP Tbk SR2022](#) and the latest ESG report of PT Lygend Resources & Technology Co., Ltd.: [Lygend Resources and Technology ESG Report 2022](#). Our next report will be fully comprehensive and include outcomes from a revised materiality assessment (planned for Q4 2023).

Although we have not sought third-party assurance for the contents of this report, data reported on financials, greenhouse gas (GHG), environmental monitoring, and health and safety have been externally verified by credible third parties.

作为更新报告，本文档应与 [PT HPL 2021 年 ESG 报告](#) 和我们网站上的披露信息一起阅读。其他相关参考资料包括 Harita Nickel 的最新可持续发展报告: [PT TBP Tbk SR2022](#) 和 PT Lygend Resources & Technology Co., Ltd. 的最新 ESG 报告: [2022 年 Lygend Resources 和技术 ESG 报告](#)。我们的下一份报告将是全面的，并将包括修订后的重要性评估结果 (计划于 2023 年第 4 季度发布)。

尽管我们尚未就本报告的内容寻求第三方保证，但财务、温室气体 (GHG)、环境监测以及健康与安全方面报告的数据已由可信的第三方进行了外部验证。

ABOUT PT HPL

关于PT HPL

PT Halmahera Persada Lygend (HPL) was founded in 2018 as a joint venture between PT Trimegah Bangun Persada Tbk (PT TBP Tbk), or Harita Nickel, and PT Ningbo Lygend. Our headquarters are in Jakarta and operations are in in Kawasi, Obi District, in the South Halmahera Regency of North Maluku, Indonesia. We are a private limited company with majority shares owned by Lygend Resources & Technology, Co. Ltd. and Kan Xuan Pte. Ltd. (55%). The remaining is held by PT TBP Tbk (45%).

PT Halmahera Persada Lygend (HPL) 成立于 2018 年，是 PT Trimegah Bangun Persada Tbk (PT TBP Tbk) 或 Harita Nickel 与 PT Ningbo Lygend 的合资企业。我们的总部设于印度尼西亚雅加达，而业务位于北马鲁古省南哈马黑拉县奥比岛的 Kawasi 地区。我们是一家私营有限公司，由 Lygend Resources & Technology, Co. Ltd. (Lygend Resources) 和 Kan Xuan Pte. Ltd. 持有多数股份 (55%)。其余股份由 PT TBP Tbk 持有 (45%)。

PT HPL is a state-of-the-art refinery employing over 5,400 individuals and producing Class 1 nickel metal.¹ We were the first company in Indonesia to process and refine intermediate products for the electric vehicle (EV) battery industry using high pressure acid leaching (HPAL) hydrometallurgical technology. Our facility has been operational since 2021 and produces high-quality mixed hydroxide precipitate (MHP) from mined limonite, a low-grade nickel ore.

In 2022, we increased PT HPL's production capacity of MHP, and began extending into the production of nickel sulfate and cobalt sulfate from our MHP. Our nickel and cobalt sulfate facility will be fully commissioned in 2023 and the products will be sold to the EV battery-making facilities in China, which serve the Chinese, Korean, Taiwanese and European markets.

PT HPL 是一家先进的精炼厂，雇佣了 5,400 多名员工，主要生产 1 类镍金属。¹ 我们是印度尼西亚首家采用高压酸浸 (HPAL) 湿法冶金技术来为电动汽车 (EV) 电池行业加工和精炼中间产品的公司。我们的工厂自 2021 年开始运营，从开采的褐铁矿 (低品位镍矿) 中生产高质量的混合氢氧化物沉淀物 (MHP)。

2022 年，我们提高了 PT HPL 的 MHP 产能，并开始从 MHP 生产硫酸镍和硫酸钴。我们的硫酸镍和硫酸钴工厂将于 2023 年全面投产，产品将销往中国的电动汽车电池制造厂，这些制造厂主要服务于中国、韩国、中国台湾和欧洲市场。

¹Class 1 is a high-purity nickel in a pure metal form containing a minimum of 99.8% nickel, whereas Class 2 are lower-purity products containing less than 99.8% nickel, such as nickel alloys and chemicals in various forms (e.g., nickel oxides and ferronickels).

¹ 1 类是纯金属形式的高纯度镍，含量至少为 99.8%，而 2 类是含量低于 99.8% 的低纯度产品，如镍合金和各种形式的化学品 (如氧化镍和镍铁)。

ABOUT PT HPL | 关于PT HPL

MHP production and revenue

The construction of the first two MHP production lines (Phase I) was completed in 2021, producing 85,283 tons of MHP that year. By 2022, a third line (Phase II) was fully operational, rapidly scaling up our operations to a production capacity of 365,000 tons a year. **In 2022, we produced 219,953 tons of MHP – 1.5 times more than in 2021.** This expansion strategy is guided by our plans to meet national objectives and growing customer demand and set a record for the fastest escalation time achieved by any HPAL facility in the world.

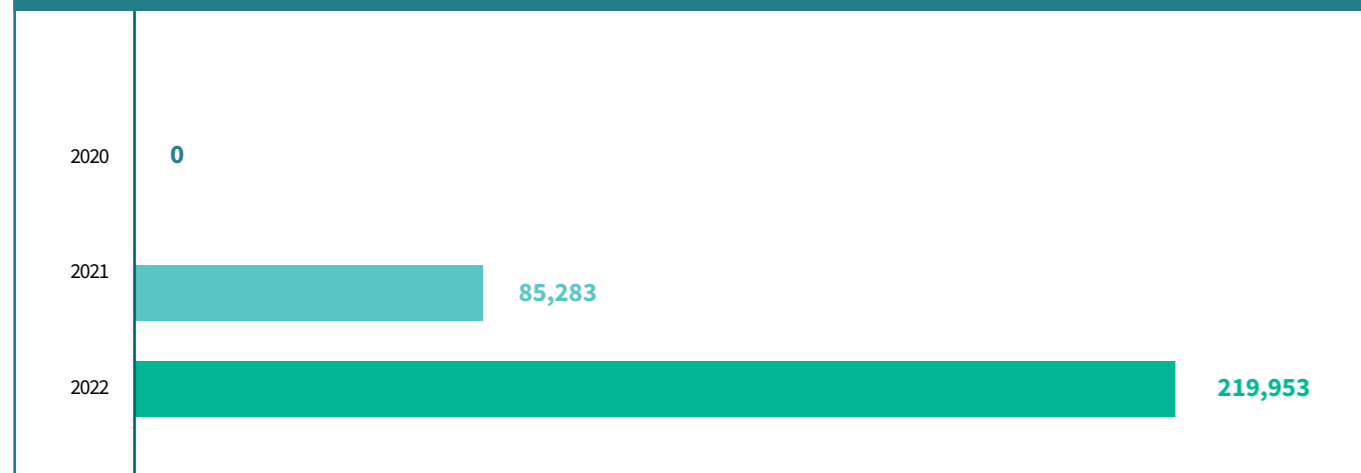
All MHP is exported, and our ability to yield more MHP led to a 200% increase in sales in the second year of operation, from US\$331 million in 2021 to US\$1.03 billion in 2022. **Our total net profit in 2022 was US\$443 million.**

MHP 生产和收入

首批两条 MHP 生产线（一期）已于 2021 年建成投产，当年的 MHP 产量为 85,283 吨。到 2022 年，第三条生产线（二期）全面投入运营，迅速将我们的业务规模扩大到每年 365,000 吨的产能。**2022 年，我们生产了 219,953 吨 MHP，是 2021 年的 1.5 倍。**这一扩张战略以我们的计划为指导，旨在满足国家目标和不断增长的客户需求，并创下世界上所有 HPAL 设施实现的最快升级时间纪录。

所有 MHP 均用于出口，我们更高的 MHP 产能使得运营第二年的销售额增长了 200%，从 2021 年的 3.31 亿美元达到了 2022 年的 10.3 亿美元。**我们 2022 年的净利润总额为 4.43 亿美元。**

MHP production 2020—2022 (t)
2020—2022年 MHP 生产 (t)



Note: Production operations began in 2021.
注意：生产运营于 2021 年开始。

ABOUT PT HPL | 关于PT HPL

Company highlights

公司亮点

MHP PRODUCTION 内容无实际意义

MHP production capacity (2022)
MHP 产能 (2022):

365,000 tons/year
吨/年

2nd HPAL plant in the world to reach nameplate capacity

全球第二家 达到额定产能的 HPAL 工厂

Reached nameplate capacity within **12 months**

12 个月
内达到额定产能

1st plant using dry stack tailing placement to reach nameplate capacity in the shortest time.

首家 采用尾矿干堆场的工厂，在最短时间内达到额定产能。

1st HPAL plant in Indonesia to use nickel ore deposit (laterite)

印尼首家 采用镍矿床（红土型）的 HPAL 工厂

NICKEL AND COBALT SULFATE PRODUCTION 硫酸镍钴生产

Nickel sulfate production capacity (exp. 2023):

247,000 tons/year

equivalent to 50,000 tons nickel compound

硫酸镍产能（2023 年预期）：
247,000 吨/年
-相当于 50,000 吨镍化合物

Cobalt sulfate production capacity (exp. 2023):

32,000 tons/year

equivalent to 6,500 tons cobalt compound

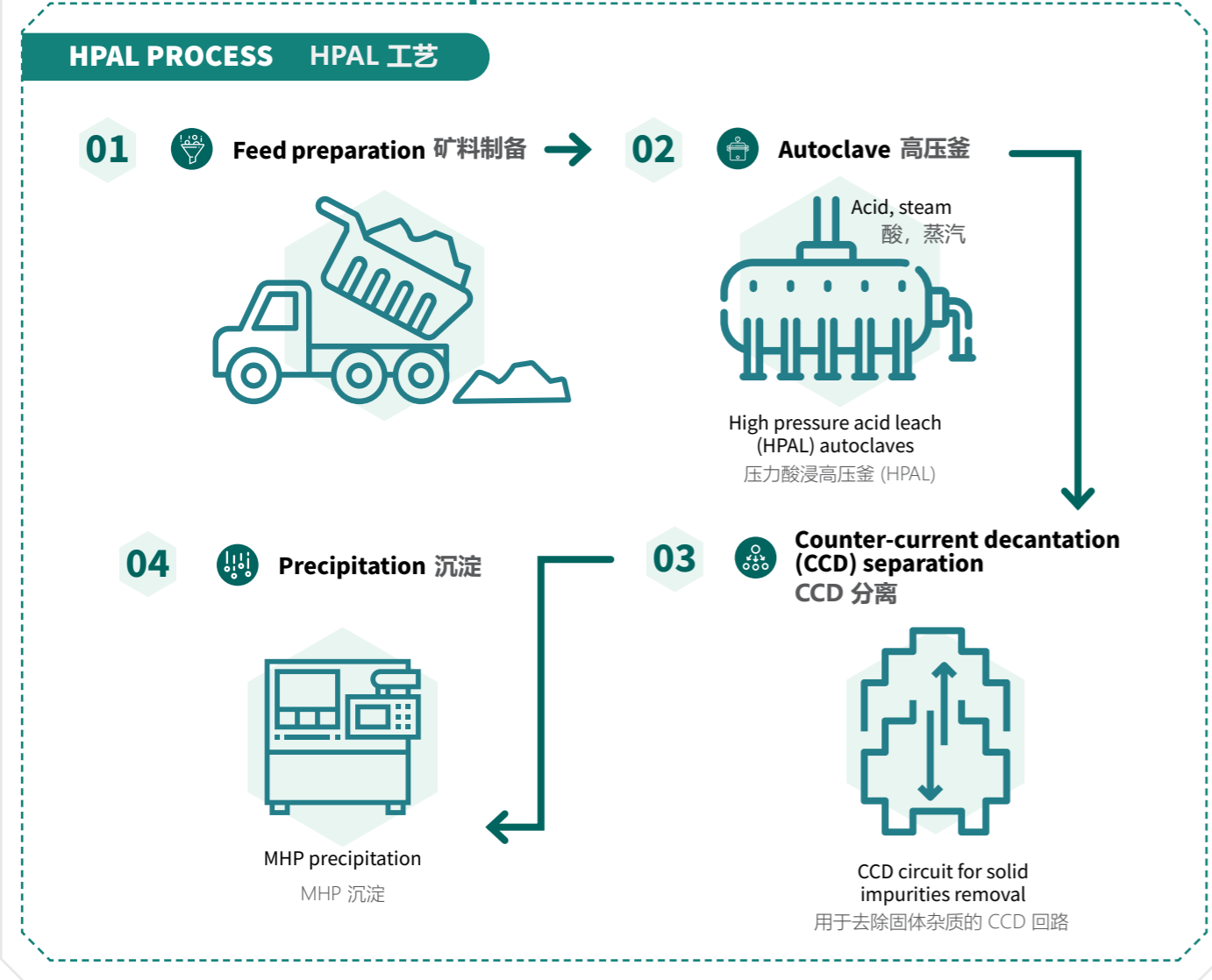
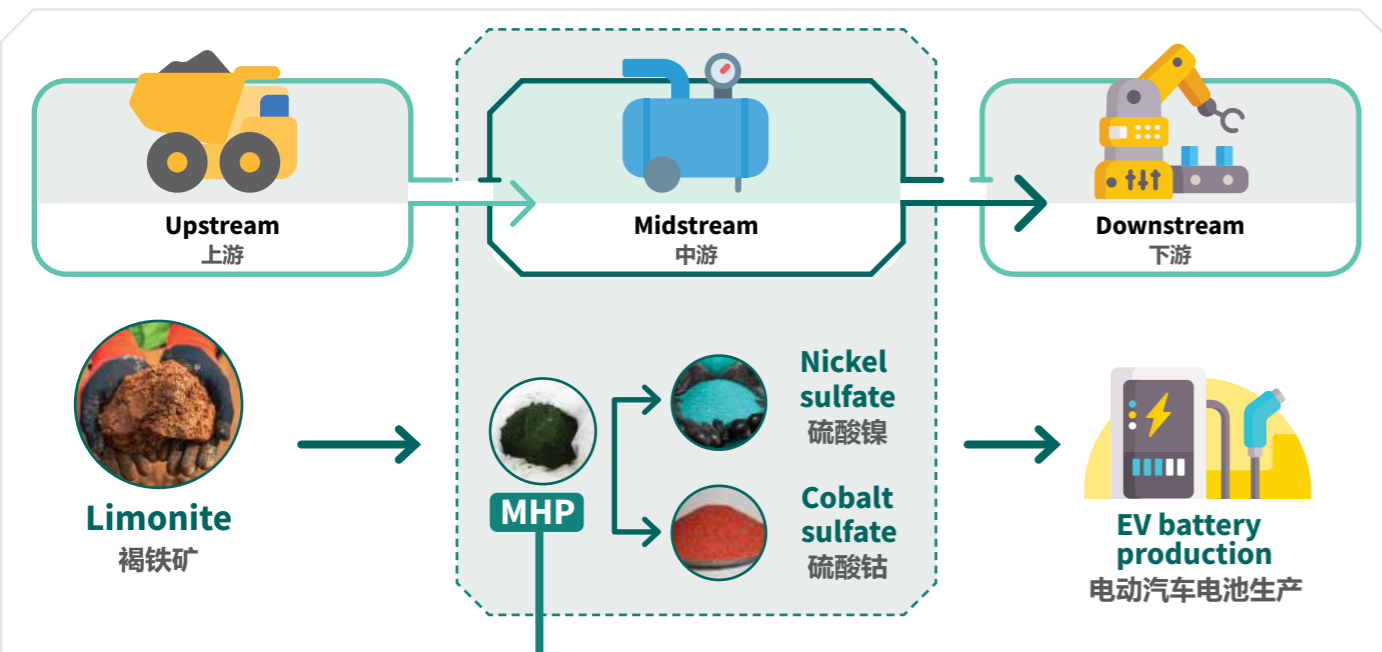
硫酸钴产能（2023 年预期）：
32,000 吨/年
-相当于 6,500 吨钴化合物

To be Indonesia's first sulfate plant and **the largest independent facility in the world**

成为印尼首家硫酸盐工厂以及全球最大的独立设施

The business and technology

业务和技术



Contributions to Indonesia's national plans

对印度尼西亚国家计划的贡献

Indonesia has the largest nickel reserves in the world and is a key exporter, playing a crucial role in the country's economy. The country's Class 1 nickel supply is projected to increase and compete against long-established nickel-producing countries, such as Russia and the Philippines.²

作为重要的出口国，印度尼西亚拥有世界上最大的镍储量，镍矿在国家经济中发挥着至关重要的作用。预计该国的1类镍供应将增加，并与俄罗斯和菲律宾等历史悠久的镍生产国竞争。²

As an associate company of Harita Nickel, we locally source mined limonite from two of their subsidiaries on Obi Island. Along with Harita Nickel's other businesses and associate companies involved in nickel's upstream, midstream, and downstream production, Obi Island is set to be Indonesia's nickel industrial estate as part of the country's national strategic plan, or the *Proyek Strategis Nasional* (PSN).

作为 Harita Nickel 的关联公司，我们从他们在奥比岛当地的两家子公司采购褐铁矿。作为印尼国家战略计划 *Proyek Strategis Nasional* (PSN) 的一部分，奥比岛将与 Harita Nickel 的其他企业和参与镍上游、中游和下游生产的关联公司一起，共同打造印尼的镍工业园区。

PT HPL's expansion plans have been driven by an increasing worldwide demand for electric vehicles, and our facilities can meet these growing needs by processing limonite, which was not formerly considered a valuable laterite ore and was treated as "overburden" by the mining industry. PT HPL, therefore, plays a crucial role in Harita Nickel's determination to become a global leader as a supplier for EV batteries and strategically aligns with Indonesia's 2060 net zero ambitions.³

PT HPL 的扩张计划受到了全球对电动汽车日益增长的强劲需求推动，我们的设施可以通过加工褐铁矿来满足这些不断增长的需求，而褐铁矿以前被认为是不具有价值的红土矿，被采矿业视为“覆盖层”。因此，PT HPL 在 Harita Nickel 成为全球领先的电动汽车电池供应商的过程中发挥着至关重要的作用，并在战略上与印度尼西亚 2060 年的净零排放目标保持一致。³

We owe our ability to achieve this strategic alignment to the HPAL facility, which is supported by the technological expertise and experience of our parent company, Lygend Resources & Technology, Co. Ltd. As a leader in the global nickel industry, Lygend has introduced this technology to the Indonesian market as part of its efforts to expand its upstream nickel resource businesses and pursue high-quality investment opportunities that align with Indonesia's national objectives.

我们之所以能够实现这一战略调整，要归功于 HPAL 设施，它得到了我们的母公司 Lygend Resources & Technology, Co. Ltd. 的技术专长和经验的支持。作为全球镍行业的领军企业，Lygend 将这一技术引入了印尼市场，作为其拓展上游镍资源业务，以及寻求符合印尼国家目标的优质投资机会的努力的一部分。

²Asmarini, W. (2022, March 10). *Ini pabrik RI yang bisa gantikan pasokan nikel Rusia*. CNBC Indonesia.
²Asmarini, W. (2022 年 3 月 10 日)。印度尼西亚的一家工厂可以替代俄罗斯的镍供应。CNBC 印度尼西亚。
<https://www.cnbcindonesia.com/news/20220310133547-4-321704/ini-pabrik-ri-yang-bisa-gantikan-pasokan-nikel-rusia>
³Posada, F. (2023, May 3). *Indonesia's historic announcement proves the country's transport future is electric*. International Council on Clean Transportation.
³Posada, F. (2023 年 5 月 3 日)。印尼的历史性声明证明了电动车将是该国交通的未来。国际清洁交通理事会。
<https://theicct.org/indonesia-mef-may2023/>

OUR COMMITMENT TO SUSTAINABILITY

我们的可持续发展承诺



Although our products are designed to support the green energy transition for the world's transportation industry, we realize that sustainability must be integrated in the preliminary stages of the production process. As a responsible operator, we strive to ensure the impact of nascent stage production in the supply chain does not negate the total potential environmental benefit achievable through transportation decarbonization efforts. Since the start of our operations, we have prioritized being responsive to the ESG agenda and incorporating sustainability throughout our business.

尽管我们的产品旨在支持世界交通运输业的绿色能源转型，但我们也意识到，可持续发展必须融入生产过程的初级阶段。作为一家负责任的经营商，我们努力确保供应链中初级生产的影响不会抵消通过交通运输脱碳努力实现的总体潜在环境效益。自公司运营伊始，我们一直优先考虑对 ESG 议程做出回应，并将可持续发展贯穿于公司业务的始终。

Sustainability framework and policies

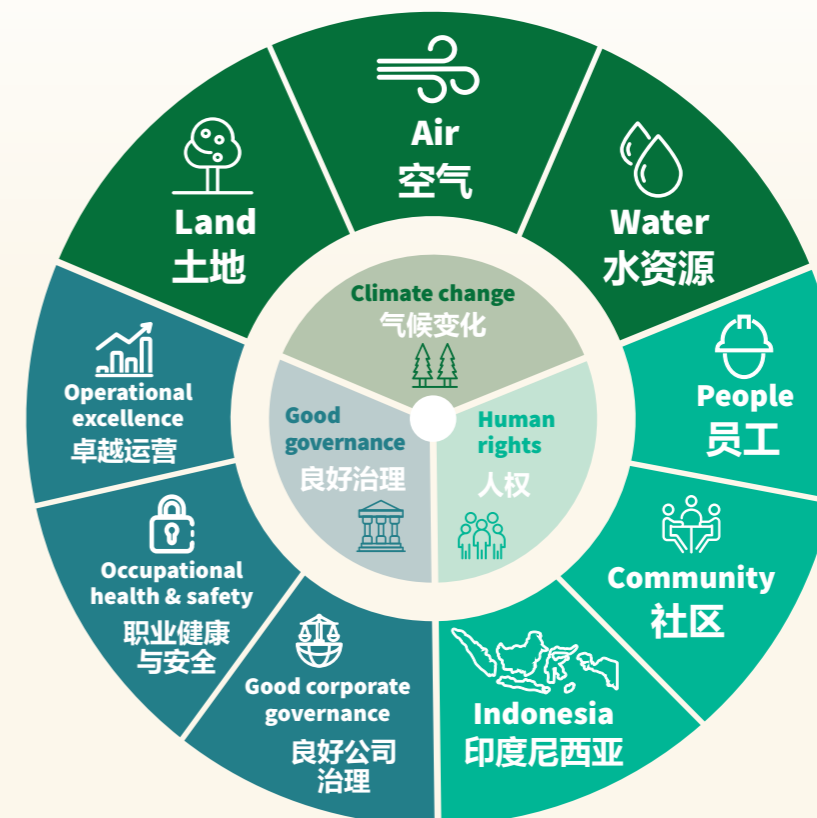
Overarching frameworks and policies

We are guided by Harita Nickel's overarching policies and frameworks. In 2020, Harita Nickel launched a comprehensive **Sustainability Framework** with three pillars: **good governance, climate change, and human rights**. To achieve these objectives, a five-year roadmap was developed with three main targets.

可持续发展框架和政策

总体框架和政策

我们遵循 Harita Nickel 的总体政策和框架。2020年，Harita Nickel 推出了一个**全面可持续发展框架**，其中包含了三大支柱：**良好治理、气候变化和 인권**。为了实现这些目标，我们制定了一个五年路线图，其中包括三个主要目标。



Climate change 气候变化

Land 土地

Operating in an environmentally friendly manner to minimize our carbon footprint by increasing carbon storage and continuous biodiversity rehabilitation

通过持续的生物多样性恢复来增加碳储存，并通过注重环保的运营方式来尽可能减少碳足迹

Air 空气

Improving air quality to protect human, environmental, and economic health

改善空气质量，以保护人类、环境和经济健康

Water 水资源

Employing responsible water management practices and protecting ecosystems and marine life of our oceans and lakes

通过提高对海洋生态系统及其对人类生活的根本重要性的认识来保护我们的海洋

Human rights 人权

People 员工

Educating and developing the capacity of our employees

启发我们的员工并培养他们的能力

Community 社区

Optimizing the resources of surrounding communities through social engagement programs

通过优化周边社区的潜在资源，参与周边社区的社会提升计划

Indonesia 印度尼西亚

Building resilience by fighting poverty and maintaining social justice

通过消除贫困和维护正义来增强人们的适应力

Good governance 良好治理

Good corporate governance 良好公司治理

Ensuring integrity and ethical behavior is integrated in company culture

确保将诚信和道德行为融入公司文化中

Occupational health and safety (OHS) 职业健康与安全

Offering a safe workplace and embedding a culture of safety

提供安全的工作场所并融入安全文化

Operational excellence 卓越运营

Encouraging sustainability by improving business performance with targeted management principles

利用具体的管理原则来提升业务绩效，以期实现可持续成功

OUR COMMITMENT TO SUSTAINABILITY | 我们的可持续发展承诺

2025 SUSTAINABILITY ROADMAP
2025 年可持续发展路线图



PT HPL is committed to meeting this framework and contributing to broader measures in Obi Island. Some of the initiatives implemented in 2022 include:

PT HPL 致力于实现这一框架，并为更广泛的 Harita Nickel 集团采取的更广泛措施做出贡献。2022 年实施的一些举措包括：

Began
ESG training
for PT HPL employees
开始对 PT HPL 员工进行
ESG 培训

Exploring international frameworks, voluntary certification schemes, and national regulations (see [Certification section](#))
探索国际框架、自愿认证计划和国家法规
(请参阅“认证”部分)

Closely monitoring and working with stakeholders to address ESG concerns and expectations
(See ESG focus areas in [PT TBP 2022 Sustainability Report](#), p. 42-45.)
密切监测并与利益相关方合作，以解决 ESG 问题和期望
(请参阅 [PT TBP 2022 可持续发展报告](#) 中的 ESG 重点领域，第 42-45 页。)

Developing
new policies
outlining our ESG commitments
制定新的政策，
概述我们的 ESG 承诺

Ensuring that company policies and practices align with applicable laws, including meeting permit requirements and environmental regulations and developing social and community programs aligned with governance aims. These are all reported regularly to the government
确保公司政策和实践符合适用法律，包括满足许可要求和环境法规，并制定符合治理目标的社会和社区计划。这些内容都会定期向政府报告。

OUR COMMITMENT TO SUSTAINABILITY | 我们的可持续发展承诺

In 2023, additional Group-wide policies were developed by Harita Nickel and Lygend Resources that were adopted by PT HPL. These include a comprehensive [Sustainability Policy](#) and a [Responsible Sourcing Policy](#). We are also currently finalizing a stand-alone Human Rights Policy. In May 2023, PT HPL began implementing sustainability and human rights training and the tenets of these policies for all employees.

2023 年，Harita Nickel 和 Lygend Resources 制定了额外的全集团政策，而 PT HPL 采用了这些政策。其中包括一项全面可持续发展政策和一项负责任采购政策。我们目前还在最后确定一项独立的人权政策。2023 年 5 月，PT HPL 开始为所有员工开展 ESG 培训，并贯彻这些政策的原则

More information on Sustainability Framework is available in the [PT TBP SR2022](#), p. 52.
有关可持续发展框架的更多信息，请参阅 [PT TBP SR2022](#)，第 52 页。

PT HPL Environmental and Social Management System

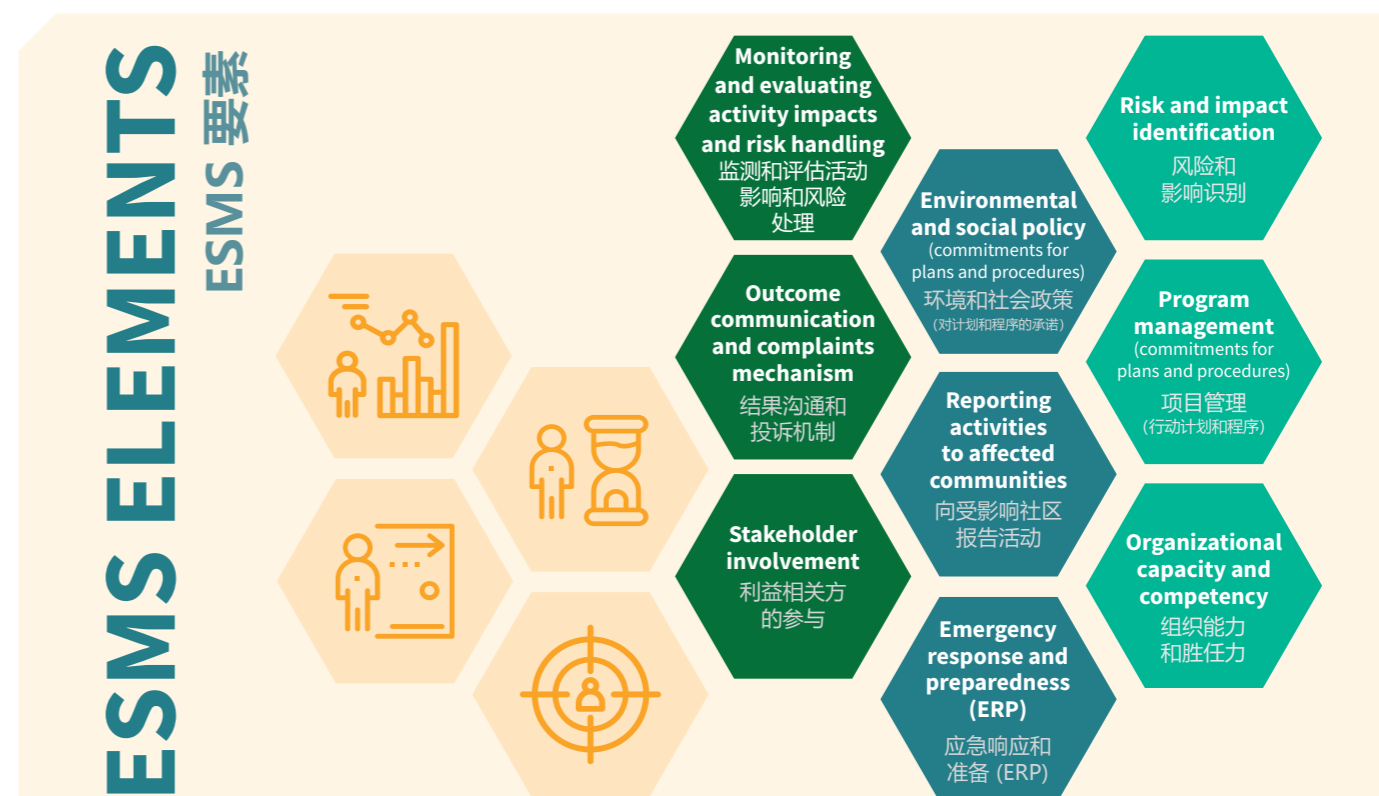
At an operational level, PT HPL has dedicated systems, such as our **Environmental and Social Management System (ESMS)**, to guide sustainable practices for our operations and employees. This framework contains nine key elements to be followed during operations.

PT HPL 环境和社会管理系统

在运营层面，PT HPL 拥有专门的系统，比如我们的**环境和社会管理系统 (ESMS)**，用以指导我们的运营和员工的可持续实践。这一框架包含应在运营期间遵循的九个关键要素。

To ensure the effective implementation of ESMS throughout our operations and facilitate management efficient environment and social activities, the roles and responsibilities of each employee and department are clearly defined, documented, and communicated. PT HPL has designated dedicated personnel ESMS owners and on-site representatives to assist the technical leads and department heads.

为了确保在整个运营过程中有效实施 ESMS，同时促进高效的环境和社会活动的管理，我们对每位员工和部门的角色和职责都进行了明确的定义、记录和沟通。PT HPL 已指定专人担任 ESMS 负责人和现场代表，以协助我们的技术负责人和部门主管。



OUR COMMITMENT TO SUSTAINABILITY | 我们的可持续发展承诺

Contributing to the SDGs

We understand that businesses are crucial in facilitating broader national and global goals and how a common language will help communicate our sustainability progress. Taking this into account, the Harita Nickel Sustainability Framework was developed in line with the United Nations Sustainable Development Goals (SDGs) – objectives to improve the planet and its quality of human life by 2030. **We have identified 13 Goals we contribute to and have mapped them against our objectives and pillars.** For a complete overview, see [PT TBP 2022 Sustainability Report](#), p. 57–61.

为 SDG 做出贡献

我们明白，企业在促进更广泛的国家和全球目标方面至关重要，而共同语言将有助于沟通我们在可持续发展方面取得的进展。考虑到这一点，Harita Nickel 可持续发展框架是根据联合国可持续发展目标 (SDG) 而制定的，目标是到 2030 年改善地球及其人类生活质量。**我们已经确定了要为之奋斗的 13 个目标，并将其与我们的目标和支柱相结合。**有关完整概述，请参阅 [PT TBP 2022 可持续发展报告](#)，第 57–61 页。



Materiality

In 2021, PT HPL conducted an internal materiality assessment to guide our reporting and strategy development. Based on topics from the Global Reporting Initiative (GRI) Standards and following focus group discussions and engagement with company division heads, 12 topics were identified and prioritized. These cover **high-focus areas** such as climate change, health and safety, equality, and emissions, and **medium-focus area topics** such as water, waste and effluent, energy use, environmental compliance, surrounding communities, local workforce, worker competency, and human rights. This report includes updates on these key topics and others raised by our stakeholders during the reporting year.

重要性

2021 年，PT HPL 开展了一项内部重要性评估，以便为我们的报告和战略制定提供指导。根据全球报告倡议 (GRI) 标准的主题，经过焦点小组讨论以及与公司各部门负责人的接触，之后确定了 12 个主题及其优先顺序。这些主题涵盖气候变化、健康与安全、平等和排放等**高度关注领域**，以及水资源、废弃物和污水、能源使用、环境合规性、周边社区、当地员工队伍、员工胜任力和人权等**中度关注领域主题**。本报告包括这些关键主题，以及利益相关方在报告年度提出的其他主题的最新情况。

We will conduct a more thorough assessment in Q4 2023 involving external and internal stakeholder engagement and use a revised set of material topics to guide our next sustainability report.

我们将在 2023 年第 4 季度进行一次更全面的评估，涉及外部和内部利益相关方的参与，并使用一套修订后的重要主题来指导我们的下一份可持续发展报告。

For our previous matrix, see the [PT HPL ESG Report 2021](#), p. 134. 有关我们之前的矩阵，请参阅 [PT HPL 2021 年 ESG 报告](#)，第 134 页。

OUR COMMITMENT TO SUSTAINABILITY | 我们的可持续发展承诺

Stakeholder engagement

PT HPL builds robust collaborative relationships with stakeholders that directly or indirectly impact our business. These include contractors, customers, employees, government and regulatory bodies, industry associations, investors, local communities, media, nongovernmental organizations (NGOs), shareholders, suppliers, and universities or academic institutions. We frequently and actively engage with these groups. Communication methods include one-to-one or group meetings, website updates, annual financial and sustainability reports, feedback forms and questionnaires, and our grievance system to address raised concerns.

利益相关方参与

PT HPL 与直接或间接影响我们业务的利益相关方建立起了稳固的合作关系。这些利益相关方包括承包商、客户、员工、政府和监管机构、行业协会、投资者、当地社区、媒体、非政府组织 (NGO)、股东、供应商以及大学或学术机构。我们经常与这些群体积极沟通。沟通方式包括一对一或小组会议、网站更新、年度财务报告和可持续发展报告、反馈表和调查问卷，以及我们用于解决所提出问题的申诉系统。

See our comprehensive list and types of engagement in [PT HPL ESG Report 2021](#), p. 106–107. 请参阅 [PT HPL 2021 年 ESG 报告](#) 中的全面列表和参与类型，第 106–107 页。

In 2022, Harita Nickel participated in several Indonesian nickel events and programs. These were organized by industry associations, universities, media houses, and government bodies. We engaged in several topics, such as mining environmental degradation, optimizing and conserving nickel minerals, and EV battery supply chain challenges. In May 2022, Harita Nickel also presented a report entitled *Contribution of Obi Island Reducing the Carbon Footprint in the Transport Sector* at the second International Conference on Mining and Environmental Technology. The paper is now an [open-access article](#) on the *IOP Conference Series: Earth and Environmental Science* website.

2022 年，Harita Nickel 参加了多个印尼镍业活动和项目。这些活动由行业协会、大学、媒体和政府机构组织。我们参与了多个主题的活动，如采矿环境退化、优化和保护镍矿物以及电动汽车电池供应链挑战。2022 年 5 月，Harita Nickel 还在第二届国际采矿与环境技术会议上提交了一份题为《奥比岛对减少交通运输部门碳足迹的贡献》的报告。这篇论文现已成为 IOP 会议系列：地球与环境科学网站上[可公开获取的文章](#)。



OUR COMMITMENT TO SUSTAINABILITY | 我们的可持续发展承诺

Certifications and recognition

Our commitment to operating at the highest standard led us to pursue credible certification schemes for our management systems. This will assure our stakeholders that we operate against stringent local and global requirements. The company is currently in the process of obtaining several national and international certifications.

In 2022, PT HPL began external audits for *Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3)* certification for our occupational, health and safety (OHS) management system and achieved a “gold flag” rating with a score of over 85%. We are scheduled to obtain certification status in 2023.

By: 2023

- **Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) certification** for our occupational, health and safety management (OHS) management system
- **ISO 45001 certification** for our OHS management system
- **ISO 9001: 2015** and **GB/T 19001: 2016** for our quality management systems (achieved as of July 2023)

By: 2024

- **ISO 14001 certification** for our environmental management system

In 2022, PT HPL received several awards and recognitions for our health and safety programs and inventory management. These include:



Award for our OHS programs
奖项
OHS 项目奖



Received by: Governor of North Maluku	颁奖者/机构: 北马鲁古省长
Received on: January 18, 2022	获奖日期: 2022 年 1 月 18 日

认证和表彰

我们致力于以最高标准进行运营，从而为我们的管理系统寻求可靠的认证方案。这将向我们的利益相关方保证，我们的运营符合当地和全球的严格要求。本公司目前正在申请多项国家和国际认证。

2022 年，PT HPL 开始对我们的职业、健康与安全 (OHS) 管理系统的工作安全与健康管理系统 (SMK3) 认证进行外部审计，并以超过 85% 的分数获得了“金旗”评级。我们计划在 2023 年通过认证。

到2023年

- 我们的 OHS **管理系统的工作安全与健康管理系统 (SMK3) 认证**
- 我们的 OHS 管理系统的 **ISO 45001 认证**
- 我们的质量管理体系通过 **ISO 9001: 2015** 和 **GB/T 19001: 2016 认证** (截至 2023 年 7 月实现)

到2024年

- 我们的环境管理系统通过 **ISO 14001 认证**

2022 年，PT HPL 因其健康与安全项目以及库存管理而获得多项奖项和表彰。其中包括：



Award for the Best performing bonded zone category
奖项
表现最佳保税类别奖



Received by: Directorate General of Customs and Excise	下面这段内容: 海关总署
Received on: February 8, 2022	获奖日期: 2022 年 2 月 8 日

See [PT TBP SR2022](#), p. 33, for other awards and recognitions received under the Harita Group 有关 Harita 集团获得的其他奖项和表彰，请参阅 [PT TBP SR2022](#)，第 33 页

GOOD GOVERNANCE

良好治理

Given the location of our operations, PT HPL is led by the governance structures of Harita Nickel and in line with government guidance.

PT HPL is committed to good corporate governance and endeavors to operate with transparency, accountability, independence, and fairness. These values are instilled throughout the company at every level, starting with our leadership, which comprises our Board of Commissioners and Board of Directors. The Board of Commissioners oversees company activities and is led by the President Commissioner, while the Board of Directors is responsible for company strategies and risks across Harita Nickel and its subsidiaries and associate companies, including PT HPL. The President Director chairs the Board of Directors.

The Sustainability and Diversity Committee consists of four experienced members who meet at least biannually. Their primary role is presenting to the Board and advising, informing, and guiding management on sustainability and diversity issues, performance, and targets. The Committee is chaired by the President Director and co-chaired by the Director of Sustainability, who are also members of the Board of Directors. The Director of Sustainability oversees the strategic direction of all sustainability policies and guides the sustainability, and ESG executives who handle daily implementation.

In addition, the Director of PT HPL is also a member of the Board and oversees all health, safety, and environmental policies, implementation, and their respective teams. They also review and approve all published sustainability communications, including our annual sustainability reports.

鉴于我们的工厂所在地，PT HPL 接受 Harita Nickel 治理结构的领导，并遵循政府的指导原则。

PT HPL 致力于良好公司治理，并努力以透明、问责、独立和公平的方式运营。这些价值观在公司的各个层面都得到了贯彻，首先就是包括专员委员会和董事会在内的领导层。专员委员会负责监督公司活动，由总裁专员领导，而董事会负责 Harita Nickel 及其子公司和关联公司（包括 PT HPL）的公司战略和风险。总裁董事担任董事会主席。

可持续发展和多元化委员会由四名经验丰富的成员组成，至少每半年召开一次会议。他们的主要职责是向董事会提交报告，并就可持续发展和多元化问题、绩效和目标向管理层提供建议、信息和指导。该委员会由总裁董事担任主席，同为董事会成员的可持续发展总监担任共同主席。可持续发展总监负责监督所有可持续发展政策的战略方向，并为负责日常执行工作的可持续发展和 ESG 主管提供指导。

此外，PT HPL 董事也是董事会成员，负责监督所有健康、安全和环境政策、执行情况及其各自团队。他们还负责审查和批准所有已发布的可持续发展信息，包括我们的年度可持续发展报告。

For more information, see [PT TBP SR2022](#), p. 71. 有关更多信息，请参阅 [PT TBP SR2022](#)，第 71 页。

Also see the [Sustainability and Diversity Committee Charter](#) 另请参阅[可持续发展和多样性委员会章程](#)

GOOD GOVERNANCE | 良好治理

Ethics and integrity

As an extension to Harita Nickel's policies, practices, and core value framework, *Insan Harita*, PT HPL is committed to enforcing all national regulations and upholding the highest standards of integrity, morals, and ethics. Our practices are followed by all directors, management, employees, and an Ethics and Risk Committee that oversees our policies. Our [Code of Ethics and Conduct](#) outlines practices that our directors, management teams, and employees must follow when interacting with stakeholders both inside and outside the company. We strictly prohibit any form of bribery, gratification, corruption, money laundering, and fraud. To ensure that all employees are aware of our policies, we regularly communicate our [Anti-Bribery Policy](#) and standard operating procedures through induction training and an internal employee portal.

Our anti-bribery policies also apply to our business partners, contractors, consultants, and agents, as stipulated in their business contracts. We require all partners, suppliers, and vendors to sign an Integrity Pact.

Whistleblowing and grievances

We believe in addressing stakeholder concerns through open, transparent, and constructive dialogue. Harita Nickel has established a Whistleblowing Policy and system to record and address potential violations of our corporate principles and policies. This process is accessible to all internal and external stakeholders and guarantees confidentiality of the complainant's identity and details of the grievance. Our Ethics and Risk Committee oversees the system, leading the investigation and verification of complaints and measures taken to resolve any issues. In 2022, four employee grievances were reported through the system relating to leave approvals, facilities, and dining arrangements, all of which were resolved that year.

An additional grievance system is in place to address community complaints as part of our commitment to maintain a strong two-way relationship with local communities on Obi Island. A community relations manager and relevant site managers carefully review each request or grievance to determine the nature of the concern. An investigation then takes place, followed by a response and steps for resolution. Harita Nickel is responsible for managing all community and external stakeholder grievances.

The whistleblowing system and grievance mechanisms (for external stakeholders and employees) are publicly available on Harita Nickel's [website](#).

道德和诚信

作为 Harita Nickel 政策、实践和核心价值框架的延伸，PT HPL 的 *Insan Harita* 致力于遵守所有国家法规，并坚持践行最高的诚信、道德和伦理标准。所有董事、管理层、员工以及负责监督我们政策的道德与风险委员会都遵循我们的做法。我们的[《道德及行为准则》](#)概述了公司的董事、管理团队和员工在与公司内外的利益相关方打交道时必须遵循的做法。我们严禁任何形式的贿赂、受贿、腐败、洗钱和欺诈行为。为了确保所有员工都了解相关政策，我们会定期通过入职培训和内部员工门户网站传达我们的[反贿赂政策和标准操作程序](#)。

根据业务合同中的规定，我们的反贿赂政策也适用于相关的业务合作伙伴、承包商、顾问和代理商。我们要求所有合作伙伴、供应商和提供商签署《诚信协议》。

举报和申诉

我们相信通过公开、透明和建设性的对话就能解决利益相关方关注的问题。Harita Nickel 制定了举报政策和相关制度，以记录和处理潜在的违反公司原则和政策的行为。所有内部和外部利益相关方都可以使用该流程，并保证对申诉人的身份和申诉细节保密。我们的道德和风险委员会负责监督该系统，领导对投诉的调查和核实，并采取措施解决任何问题。2022 年，通过该系统报告了四起员工投诉，涉及休假审批、设施和用餐安排，所有这些都当年得到了解决。

作为我们与奥比岛当地社区保持稳固双向关系承诺的一部分，我们还建立了一个额外的申诉系统来处理社区投诉。社区关系经理和相关现场经理会仔细审查每一项请求或申诉，以确定问题的性质。然后他们会进行调查，并作出回应并采取解决措施。Harita Nickel 负责管理所有社区和外部利益相关方的申诉。

Harita Nickel 的[网站](#)上公开了举报系统和申诉机制（针对外部利益相关方和员工）。



See [PT TBP SR2022](#), p. 73, for an overview of the community grievance mechanism and non-PT HPL employee grievances raised. 请参阅 [PT TBP SR2022](#), 第 73 页，了解社区申诉机制和提出的非 PT HPL 员工申诉的概述



MANAGING ENVIRONMENTAL IMPACTS

管理环境影响

The global shift to electric vehicles is essential for helping combat the climate emergency and achieving the Paris Agreement's goal of limiting the rise in global temperature to 1.5°C above pre-industrial levels. This aligns with Indonesia's commitment to achieving net zero by 2060 or earlier.

At PT HPL, we recognize the environmental impact of EV battery production and the role our products can play in this transition. As we work toward resource optimization, our Sustainability Framework prioritizes climate change as a key pillar, reducing our carbon footprint and responsibly managing waste and water consumption.

全球转为使用电动汽车对于帮助应对气候紧急情况 and 实现《巴黎协定》中将全球气温上升限制在比工业化前水平高 1.5°C 的目标至关重要。这与印尼到 2060 年或更早实现净零排放的承诺不谋而合。

在 PT HPL, 我们意识到电动汽车电池生产对环境的影响, 以及我们的产品在这一转变中可以发挥的作用。在努力实现资源优化的过程中, 我们的可持续发展框架将气候变化作为一个重要支柱, 从而减少我们的碳足迹, 并负责任地管理废弃物和用水量。

Benefits of HPAL technology

Compared to other methods, our HPAL technology is a faster, more efficient way to leach nickel and cobalt from limonite: 与其他方法相比, 我们的 HPAL 技术是从褐铁矿中浸出镍和钴的一种更快捷、高效的方法:

Lowest-energy nickel product in Indonesia 印尼能耗最低的镍产品

Our extraction process operates at 200°C and requires only 40MW average load capacity of electrical energy, significantly less than other nickel ore smelters of around 120MW.

我们的提取工艺在 200°C 下运行, 电能的平均负载能力仅为 40MW, 远低于其他镍矿石冶炼厂约为 120MW 的负载能力。

Optimal use of natural resources 优化利用自然资源

Limonite was previously classified as valueless "overburden" and as it was above the saprolite layer in the ground (and saprolite was the primary mined ore at the time). With HPAL, we are now able to process limonite as a raw material instead of leaving it as stockpile or mine cover.

褐铁矿以前被归类为不具有价值的“覆盖层”, 因为它位于地下的腐泥土层之上 (而腐泥土是当时主要开采的矿石)。有了 HPAL, 我们现在可以将褐铁矿作为原料进行加工, 而不是将其作为堆料或矿山覆盖物。

HPAL 技术的优点

Lowest-emission nickel product in Indonesia 印尼排放量最低的镍产品

The carbon emission intensity of our HPAL facility is 10 t CO₂e per ton of nickel equivalent, significantly lower intensity compared to all previously built nickel plants in the world.

我们 HPAL 设施的碳排放强度为每吨镍当量 10 吨二氧化碳当量, 与之前在全球建设的所有镍工厂相比强度明显降低。*

Higher nickel yield for suppliers 提高供应商的镍产量

Because HPAL technology can now process previously set-aside limonite, our suppliers can recover 75% additional nickel per hectare mined. This has resulted in lower energy and emissions intensity for their mining processes.

由于 HPAL 技术现在可以加工以前废弃的褐铁矿, 因此我们的供应商每公顷开采面积可多回收 75% 的镍。这降低了他们采矿过程的能耗和排放强度。

*Source: PT Trimegah Bangun Persada Tbk. (2023) [Leading the Charge: Pioneering Indonesia's Battery Industry.](#)
来源: PT Trimegah Bangun Persada Tbk. (2023) [做好表率: 引领印尼电池行业。](#)

Managing Environmental Impacts | 管理环境影响

Despite the benefits of HPAL technology, we are aware that the MHP process is energy- and water-intensive, contributes to air pollution, requires chemicals, and produces waste that is not easily reusable. In April 2023, as a part of a broader evaluation of our Obi Island operations under Harita Nickel and its associate companies, we completed a life-cycle assessment (LCA) to give a comprehensive overview of our facility's environmental impacts. We will report on its details in future reporting.

尽管 HPAL 技术具有诸多优点, 但我们意识到, MHP 工艺需要耗费大量能源和水资源, 会造成空气污染, 需要使用化学品, 并会产生不易重复使用的废弃物。2023 年 4 月, 作为对 Harita Nickel 及其关联公司旗下奥比岛业务进行更广泛评估的一部分, 我们完成了生命周期评估 (LCA), 以全面概述我们设施的环境影响。我们将在将来的报告中报告其详情。

Reducing emissions

We work to ensure regulated and optimized energy use throughout our processes and monitor our energy consumption and related emissions. In 2022, PT HPL installed a real-time continuous emission monitoring system (CEMS) that tracks the flow, dust, and concentration of air pollutants and GHG emissions. In 2023, and in line with regulations, the system will be linked to the Ministry of Environment and Forestry's online system. This will mean the Ministry will receive continuous, real-time reporting.

By better understanding our key hotspots, we are exploring ways to reduce our dependence on fossil fuels by improving energy efficiency, removing emissions, offsetting carbon, and increasing our renewable energy mix. In 2023, we plan to develop a decarbonization strategy and will annually report on our progress.

In the meantime, we will continue to operate several energy-saving initiatives that have been in place since we began our operations. These include energy-saving fixtures in employee living quarters and offices and installing solar panels to power streetlights and telecommunication towers throughout the Harita Nickel complex.

减少排放

我们致力于确保在所有工艺中规范和优化能源使用, 并监控能源消耗和相关排放。2022 年, PT HPL 安装了一个实时连续排放监控系统 (CEMS), 用于跟踪空气污染物和温室气体排放的流量、粉尘和浓度。2023 年, 根据相关规定, 该系统将与环境和林业部的在线系统连接。这意味着环境和林业部将收到持续的实时报告。

通过更好地了解各大主要热点, 我们正在探索通过提高能源效率、减少排放、抵消碳排放和增加可再生能源组合来减少对化石燃料的依赖。2023 年, 我们计划制定一项脱碳战略, 并将每年报告进展情况。

与此同时, 我们将继续实施自开始运营以来就已采取的多项节能举措。这些措施包括在员工生活区和办公室安装节能装置, 以及在整个 Harita Nickel 安装太阳能电池板, 为路灯和电信塔供电。



Managing Environmental Impacts | 管理环境影响

Energy consumption

Our company uses energy from various sources. In 2022, over 97% of our energy came from non-renewable sources, with coal being the primary source (90.5%). Coal is used at our power plant, which supplies electricity required for the HPAL process and facilities.

About 6.7% of our total consumption was fuel for vehicles and generators. In comparison, less than 0.5% came from gasoline, electricity from the grid, and liquified petroleum gasoline (LPG) to power employees' living areas. The remaining 2.9% comes from renewable sources, namely biofuel and energy captured from rooftop solar photovoltaics (PVs). 120 PVs were install in August 2022, with 30 having rated capacity of 120Wp and 90 with rated capacity of 60Wp each. These installations were a pilot for further solar PV expansion plans. To increase our renewable energy mix, we are currently exploring other PV generation facilities.

In 2022, our total energy consumption was 4.27 million gigajoules (GJ). This is more than 2.4 times the previous year's energy use, totaling 1.74 GJ. The increase was due to the launch of additional lines, bringing PT HPL operations to full capacity. Despite this, our energy consumption intensity decreased to 19.4 GJ per ton of MHP processed (GJ/t) because of improvements in the facility's operational efficiency and increased production.

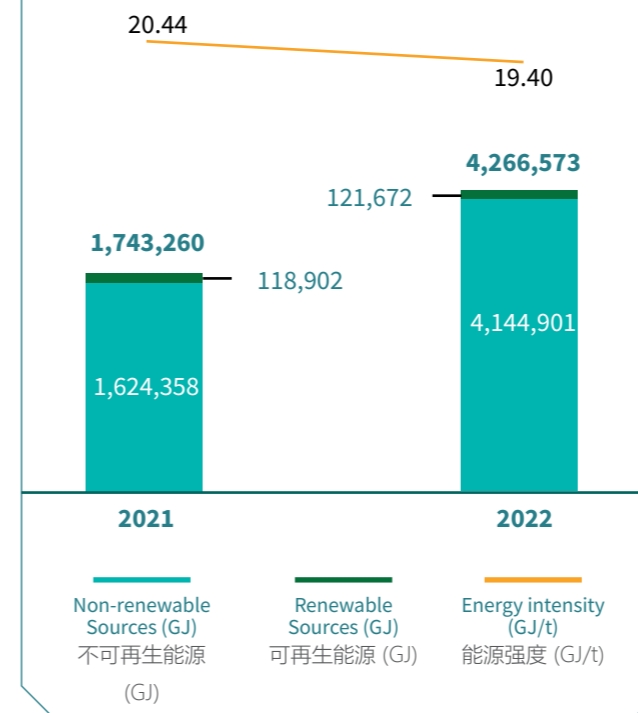
能耗

我们公司使用各种来源的能源。2022 年，我们超过 97% 的能源来自不可再生能源，其中煤炭是主要能源 (90.5%)。我们的发电厂会使用煤炭，为 HPAL 工艺和设施提供电力。

车辆和发电机的燃料占我们总消耗量的约 6.7%。相比之下，只有不到 0.5% 来自汽油、电网电力和液化石油气 (LPG)，为员工的生活区提供能源。其余 2.9% 来自可再生能源，即生物燃料和屋顶太阳能光伏发电 (PV) 装置供应的能量。2022 年 8 月安装了 120 个光伏发电装置，其中 30 个的额定功率为 120Wp，而另外 90 个的额定功率为 60Wp。这些装置是进一步扩大太阳能光伏发电计划的试点。为了增加我们的可再生能源组合，我们目前正在探索其他光伏发电设施。

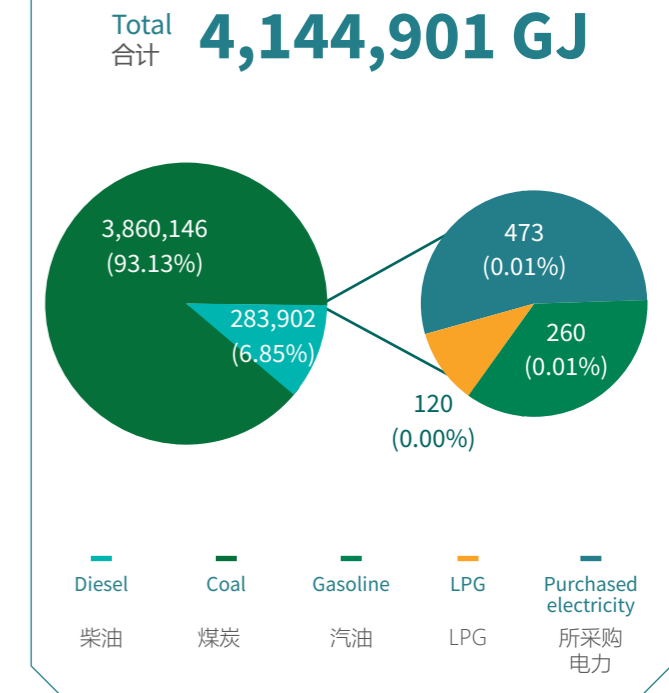
2022 年，我们的总能耗为 427 万吉焦 (GJ)。这是上一年总能耗 (总计 174 万吉焦) 的 2.4 倍多。能耗增加的原因是新生产线的投产，使 PT HPL 的运营达到满负荷。尽管如此，由于设施运营效率的提高和产量的增加，我们的能耗强度降至加工每吨 MHP 19.4 吉焦 (GJ/t)。

Energy consumption by source and energy intensity 2021—2022
2021—2022 年按来源和能源强度列出的能耗



Note: Energy data for 2021 restated.
注意：2021 年的能源数据已重新编制。

Non-renewable energy by source 2022 (GJ(%))
2022 年按来源列出的不可再生能源 (GJ (%))



Managing Environmental Impacts | 管理环境影响

Emissions and air quality

Understanding our carbon footprint

We track and monitor our carbon footprint using GHG Protocol methodology and began mapping our Scope 1 emissions during our first year of operations. In 2022, we undertook a complete inventory, including inclusive Scope 2 and Scope 3 emissions. In both years, we sought external assurance to verify our data. Our Scope 1 and Scope 2 emissions data will help define our plans to improve our operational carbon footprint. Understanding our Scope 3 emissions will help us achieve common reduction targets, such as reducing emissions from employees and partners in our value chain.

In 2022, our Scope 1 and Scope 2 emissions totaled 427,505 tons of carbon dioxide equivalent (t CO₂e), and our GHG emission intensity was 1.94 t CO₂e per ton of MHP produced (t CO₂e/t). This will be our baseline year for emissions reduction targets, as it provides a more accurate representation of our footprint compared to our first year of operation. Our upcoming decarbonization strategy will primarily focus on reducing our Scope 1 emissions, which comprise 99% of emissions directly related to our operations (Scope 1 and Scope 2). We will also consider our upcoming nickel and sulfate plants that will begin operating in 2023.

GHG emissions by Scope 2021–2022 (t CO₂e)

2021—2022 年按范围列出的温室气体排放量 (t CO₂e)

Sources 来源	2021	2022
Scope 1 范围1 Emissions from sources owned/controlled, i.e., from stationary combustion, mobile combustion, and fugitive sources 自有/受控来源的排放，即固定燃烧、移动燃烧和逸散来源的排放	200,829	427,391
Scope 2 范围2 Emissions from sources purchased, i.e., from location-based purchased electricity 外购来源的排放，即基于位置的外购电力的排放	Not assessed 未评估	114
Sub-Total 尔任	200,829	427,505
Scope 3 范围3 Emissions from indirect sources within the value chain, i.e., upstream and downstream transport, employee commuting, business travel, purchased goods and services, and capital goods 价值链内间接来源的排放，即上下游交通运输、员工通勤、商务旅行、采购的货物和服务以及资本货物	Not assessed 未评估	358,486
Total 合计	200,829	785,991

Note: Data has been externally assured with Intertek on our power plant data in 2021 and with Bureau Veritas for our entire operations in 2022.
注意：2021年，我们的发电厂数据得到了 Intertek 的外部保证；2022年，我们的整个运营数据已得到 Bureau Veritas 的外部保证。

排放和空气质量

了解我们的碳足迹

我们使用温室气体议定书方法来跟踪和监测我们的碳足迹，并在运营的第一年开始绘制我们的范围 1 排放图。2022 年，我们进行了一次完整的清查，包括范围 2 和范围 3 的排放量。在这两年中，我们都寻求外部保证来核实相关数据。范围 1 和范围 2 排放数据将有助于确定我们改善运营碳足迹的计划。了解我们的范围 3 排放将有助于实现共同的减排目标，例如减少价值链中员工和合作伙伴的排放。

2022 年，我们的范围 1 和范围 2 排放总量为 427,505 吨二氧化碳当量 (t CO₂e)，而温室气体排放强度为生产每吨 MHP 1.94 t CO₂e (t CO₂e/t)。这将是实现减排目标的基准年，因为与我们的第一年运营相比，这一年能更准确地反映我们的足迹。我们即将实施的脱碳战略将主要侧重于减少范围 1 排放量，其中 99% 的排放量与我们的运营直接相关 (范围 1 和范围 2)。我们还将考虑将于 2023 年开始运营的镍和硫酸盐工厂。

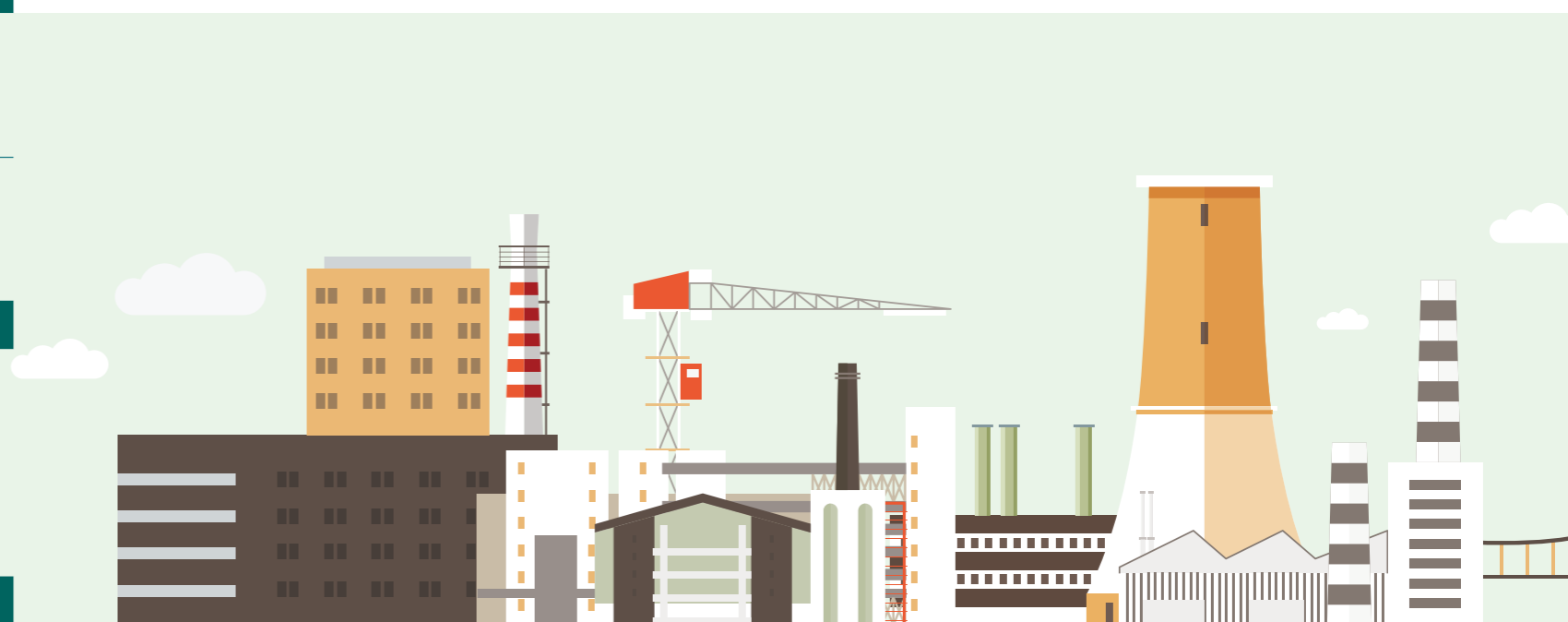
Managing air quality

We have adopted methods to ensure that all air emissions and particulates meet the latest Indonesian government regulations for air pollution control.⁴ Some of these measures include:

管理空气质量

我们已采取措施确保所有空气排放和颗粒物符合印尼政府最新的空气污染控制法规。⁴ 其中一些措施包括：

NITROGEN OXIDES 氮氧化物	SULFUR OXIDES 硫氧化物	PARTICULATE MATTER FROM INDUSTRIAL PROCESSES 工业过程中产生的颗粒物	SURROUNDING DUSTS 周围的灰尘	AIR QUALITY 空气质量
Installation of boilers with low nitrogen oxide emissions 低氮氧化物排放锅炉的安装	Installation of desulfurization equipment in future 未来脱硫设备的安装	To filter soot and dust from exhaust: Installation of electrostatic precipitators (ESP) Installation of back filters in the fly ash bottom ash (FABA) silos 过滤废气中的烟尘和粉尘: 静电除尘器 (ESP) 的安装 在飞灰底灰 (FABA) 筒仓中安装反滤器	Installation of dust control systems, including sprinklers, ventilators, and dust collectors Daily watering of roads to reduce dust particles during periods of reduced rainfall Minimizing dust disbursement by securing vehicle bodies when transporting construction materials 安装灰尘控制系统，包括洒水装置、通风机和集尘器 在降雨量减少期间，每天对道路进行洒水，以减少灰尘颗粒 运输建筑材料时，通过固定车身，最大限度地减少扬尘	Tree planting around the site to purify the air 在场地周围植树造林，净化空气



⁴These cover Minister of Environment and Forestry Regulation No. 11 of 2021 Appendix 1 for our stationary generator; Minister of Environment and Forestry Regulation No.15 of 2019 Appendix I Point A for our power plant; and Minister of Environment and Forestry Regulation No.4 of 2014 Appendix V for our acid plant.
⁴这些措施包括适用于我们的固定发电机的环境和林业部长 2021 年第 11 号法规附录 1；适用于我们发电厂的环境和林业部长 2019 年第 15 号法规附录 1 第 A 条；以及适用于我们制酸长的环境和林业部长 2014 年第 4 号条例附录 V。

At our processing facilities, purification facilities, and generators, we measure multiple parameters based on the facility and related emissions. These include and exceed government regulations and include parameters such as sulfur dioxide (SO₂), nitrogen oxide (NO_x), carbon monoxide (CO), hydrogen sulfide (H₂S), and particulate matter from emission chimneys.

With the support of accredited laboratory technicians, we have been collecting data twice a year and reporting our subsequent findings to the government. Since beginning operations in 2021, three readings have been collected and there have been no instances of non-compliance with the limits stipulated by the government permits.

We recognize periodic monitoring can be limiting in providing a continual understanding of our air emissions performance. From 2023 onwards, we will be able to collect real-time data for SO₂, NO_x, and particulate matter through a newly installed CEMS tool that will provide a more accurate reflection of our performance.

在我们的加工设施、净化设施和发电机中根据设施和相关排放量来测量多个参数。这些参数包括二氧化硫 (SO₂)、氮氧化物 (NO_x)、一氧化碳 (CO)、硫化氢 (H₂S)，以及排放烟囱产生的颗粒物等，甚至超过了政府规定。

在通过认证的实验室技术人员的支持下，我们每年收集两次数据，并向政府报告后续的调查结果。自 2021 年开始运营以来，我们已收集了三次读数，并未发现不符合政府许可规定限值的情况。

我们认识到，定期监测可能会限制我们对空气排放绩效的持续了解。从 2023 年起，我们将能够通过新安装的 CEMS 工具来收集 SO₂、NO_x 和颗粒物的实时数据，从而更准确地反映我们的绩效。

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Air emissions 2021–2022 and regulatory limits (mg/Nm³)
2021—2022 年空气排放和监管限值 (mg/Nm³)

Emission type 排放类型	Source 来源	Regulatory threshold 监管阈值	2021	2022
Nitrogen oxide (NO _x) 氮氧化物	Power Plant 发电厂	550	300	300
	Acid Plant 制酸厂	1,000	90	<10
Sulfur oxides (SO ₂) 硫氧化物	Power Plant 发电厂	550	2	80
	Acid Plant 制酸厂	800	<1	66
Hydrogen sulfide (H ₂ S) 硫化氢	Acid Plant 制酸厂	35	<0.1	<0.1
Particulates 颗粒物	Power Plant 发电厂	100	33	56
	Acid Plant 制酸厂	350	33	33

Notes:

- 1. 2022 data shown is the higher of the two readings taken six-month apart.

注意:

- 1. 所示的 2022 数据是两次读数中较高的一次，且两次读数相隔 6 个月。



Managing Environmental Impacts | 管理环境影响

Water management

We understand that our HPAL method is very water-intensive and strive to use it efficiently.

Our primary water source is Lake Karo's surface water, located north of our operations. In 2020 and 2021, our only water source for construction and related processes was Lake Karo. In 2022, we started extracting seawater to meet the demand for our production and settlement tanks in the water treatment plant.

In 2022, our total water withdrawal was 27,662 megaliters (ML). Of this, approximately 63% came from Lake Karo, with 37% from seawater. A small quantity of process water is recycled from our acid plant and is redirected back to the MHP production lines. In 2022, this was 0.375 ML.

Total water intensity significantly increased from 0.085 ML per ton of MHP processed (ML/t) in 2021 to 0.126 ML/t in 2022. This is because new production lines were added in 2022, requiring more water, specifically a new autoclave for MHP production and the creation of upcoming nickel and cobalt processing facilities.

All used water is treated before being discharged back to the sea, lake, or ground. At this stage, we can only track water withdrawal and are unable to track our water discharge and total water consumption. This is because all water discharge is combined with other companies release at the Obi Island complex. In the future, we will assess the best way to track this.

水资源管理

我们知道 HPAL 方法的耗水量非常大，因此我们努力做到高效率高用水。

我们的主要水源是地表水，源自工厂北边的卡罗湖。2020 年和 2021 年，卡罗湖是我们用于施工和相关工艺的唯一水源。2022 年，我们开始提取海水，以满足水处理厂生产和沉淀池的需求。

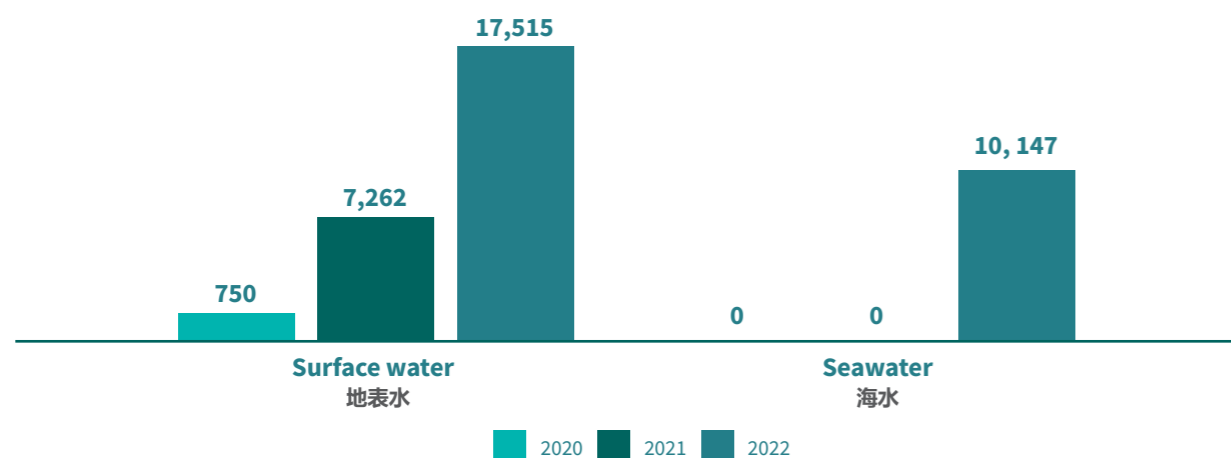
2022 年，我们的总取水量为 27,662 兆升 (ML)。其中，约 63% 源自卡罗湖，37% 源自海水。我们的制酸厂回收了少量的工艺用水，并将其引回了 MHP 生产线。2022 年，这一数字为 0.375 ML。

总水强度从 2021 年加工每吨 MHP 0.085 ML (ML/t) 大幅增加到了 2022 年的 0.126 ML/t。这是因为 2022 年增加了新的生产线，需要使用更多的水，特别是用于 MHP 生产的新高压釜，以及即将建设的镍和钴加工设施。

所有废水都在经过处理后排回大海、湖泊或地下。在现阶段，我们只能跟踪取水情况，无法跟踪我们的排水量和总用水量。这是因为在奥比岛综合体的设施中，所有的排水都与其他公司的排水合并在一起。未来，我们将评估追踪这一情况的最佳方式。

Water withdrawal by type 2020—2022(ML)

2020-2022 年按类型列出的取水量 (ML)



In our offices, employee quarters, and their vicinity, we also raise awareness through notices on how to lower water usage.

在我们的办公室、员工宿舍及其周边地区，我们还通过告示提高人们对如何节约用水的意识。

Managing Environmental Impacts | 管理环境影响

Safeguarding water sources

We are committed to preventing sustained long-term water decline by making sure that all water drawn is subject to government permits and payment for usage and ensuring water quality is in line with local regulations.

We conduct baseline hydrology studies for every water source to enable monitoring of water quality and tables. Wastewater quality is also monitored through a SPARING tool that continuously monitors real-time wastewater quality. The electronic analyzer measures chemical oxygen demand, total suspended solids, pH levels, flow rates, and wastewater volumes and directly updates data on the Ministry of Environment and Forestry's servers.

For water intake, we have installed several filters to screen out garbage that could be present in the water. This also ensures we do not harm marine life.

We ensure that any residual water from our HPAL facility process is neutralized at our wastewater treatment plants. Our main wastewater discharge comes from our refining processes and demineralization plant, as well as leachate that has gone through the tailing-dewatering filter press. Our water treatment plants ensure that all our wastewater levels meet government discharge limits. Once treated, the water is discharged to the sea.

We monitor wastewater levels for the PT HPL process at several points: at the leachate pond prior to wastewater treatment, at the discharge point after all wastewater treatment, and three groundwater points around the DSTF.

In addition, runoff and water discharge from PT HPL's jetty, living quarters, offices, and stockpile areas are treated at respective wastewater treatment plants. The residual water is also channeled to Harita Nickel's sedimentation points via two discharge points that collectively monitor wastewater levels with all other runoff and water discharge from the Harita Nickel complex.

Of the 24 monthly testing across 2021 and 2022, there was one instance of pH levels at one of the ground water monitoring point and another instance of total suspended solids and cobalt at the collection pond exceeding the regulatory limits. Mitigation measures were taken and readings were back within limits at the next testing. There were no instances of our monitoring points where nickel, and hexavalent chromium exceeded regulatory limits.

保护水源

我们致力于确保所有取水都符合政府许可并支付使用费，确保水质符合当地法规，以便防止水源长期持续水量减少。

我们对每个水源地进行基线水文研究，以便对水质和水表进行监测。我们还通过 SPARING 工具对废水质量进行监测，该工具可持续监测实时废水质量。电子分析仪可测量化学需氧量、总悬浮固体、pH 值、流速和废水量，并直接更新环境和林业部服务器上的数据。

在取水方面，我们安装了多个过滤器，用以过滤水中可能存在的垃圾。这也确保了我们对海洋生物造成危害。

我们确保 HPAL 设施工艺所产生的任何残留水都在废水处理厂内进行了中和。我们的主要废水排放源自于精炼工艺和脱矿厂，以及经过尾矿脱水压滤机的渗滤液。我们的水处理厂确保所有废水量均符合政府的排放限制。废水经过处理后将排入大海。

我们在对 PT HPL 工艺的废水量进行多点监测：废水处理前的渗滤液池、全部废水处理后的排放点以及 DSTF 周围的三个地下水监测点。

此外，PT HPL 码头、生活区、办公室和堆放区排放的径流和废水也会在相应的废水处理厂进行处理。残留水还通过两个排放点被输送到 Harita Nickel 的沉积点，而这两个排放点会与 Harita Nickel 综合体排放的所有其他径流和废水一起接受废水量监测。

在 2021 年和 2022 年的 24 次每月检测中，一个地下水监测点的 pH 值和另一个收和钴集池的悬浮固体总含量分别超过了各自的规定限值。我们为此采取了缓解措施，而下次检测时读数又恢复到了限值范围内。我们的监测点从未出现过镍、和六价铬超出规定限值的情况。

Sea color changes: Sediment from mining, not tailings from HPL

We are aware of concerns raised by the public concerning images showing the changing color of seawater surrounding our Harita Nickel operations. Several articles, including a 2023 report in the *Washington Post*, alleged that these discharges are from waste produced by our HPAL process, specifically tailings.

However, following a thorough investigation, we have conclusively determined that this is not the case. Our findings indicate that these are not tailings from PT HPL's process but constitute the release of non-hazardous sediments from mining runoff, which is particularly prevalent during the rainy season.

Our analysis clearly demonstrates that this does not negatively impact human beings or the environment, and similar occurrences have been observed in other non-mining areas in Indonesia. Despite this, Harita Nickel has taken measures to reduce the physical presence of sediment by constructing additional water treatment systems with a pump to redirect soil back to the treatment process before it is discharged to the sea.

More information is available [here](#).
有关更多信息，请点击此处。

海水颜色变化：采矿沉积物，而非 HPL 尾矿

我们意识到公众对 Harita Nickel 工厂周围海水颜色变化的图像有所担忧。包括《华盛顿邮报》2023 年的一篇报道在内的多篇文章都声称，这些排放物来自我们的 HPAL 工艺产生的废弃物，特别是尾矿。

然而，经过彻底调查，我们最终确定事实并非如此。我们的调查结果表明，这些并不是 PT HPL 加工过程中产生的尾矿，而是采矿径流释放出的无害沉积物，这种情况在雨季时尤为普遍。

我们的分析清楚地表明，这不会对人类或环境产生负面影响，在印尼的其他非采矿区也观察到了类似的情况。尽管如此，Harita Nickel 还是采取了措施来减少沉积物的实际存在——建造额外的水处理系统，在泥土被排入大海之前，用泵将泥土重新引导回处理工艺。

Managing Environmental Impacts | 管理环境影响

Hexavalent chromium (Cr6)

We understand the potential health risks of hexavalent chromium (Cr6) from mining activities. Although chromium in ore bodies is not harmful, it can oxidize when excavated and become the compound Cr6. If ingested, this compound is carcinogenic to humans and can harm the eyes, skin, and respiratory system. It is also toxic to marine life. We take this very seriously and undertake rigorous measures to test for the Cr6 compound in water discharge and neutralize it by adding ferrous sulfate (FeSO₄) at our wastewater treatment plants.

In HPL, we implement a patented Cr6 reduction method in our HPAL process. The primary advantage of this method lies in the ability to pre-emptively manage the formation of Cr6. This reduces the likelihood of Cr6 contamination in surface and ground water from refining activities. This patent was developed in 2021 through independent research by Lygend with technical support from ENFI. Our HPAL facility is the first in Indonesia to implement this process and has been granted an Indonesia-registered patent specifically tailored to the ore characteristics in Obi.

We regularly detect trace levels of Cr6 at our monitoring points, specifically at the three discharge points around the Harita Nickel complex and in the groundwater monitoring points at our dry-stack tailings facility (DSTF). The presence of Cr6 is attributed to runoff from tailings and the surrounding mining operations.

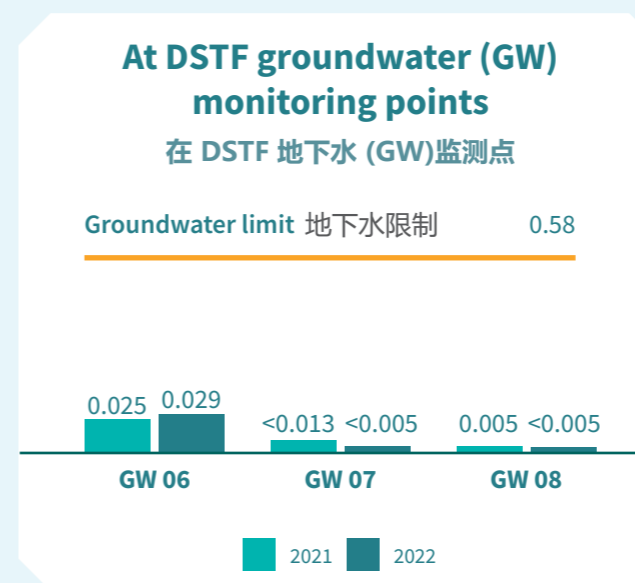
六价铬 (Cr6)

我们了解采矿活动中六价铬 (Cr6) 对健康的潜在风险。虽然矿体中的铬不会对人体造成危害，但它们会在挖掘时发生氧化，生成六价铬化合物。一旦摄入，这种化合物具有致癌性，并会对眼睛、皮肤和呼吸系统造成伤害。它对海洋生物也同样有毒。我们对此非常重视，采取了严格的措施来检测排放水中的六价铬化合物，并在废水处理厂添加硫酸亚铁 (FeSO₄) 来进行中和。

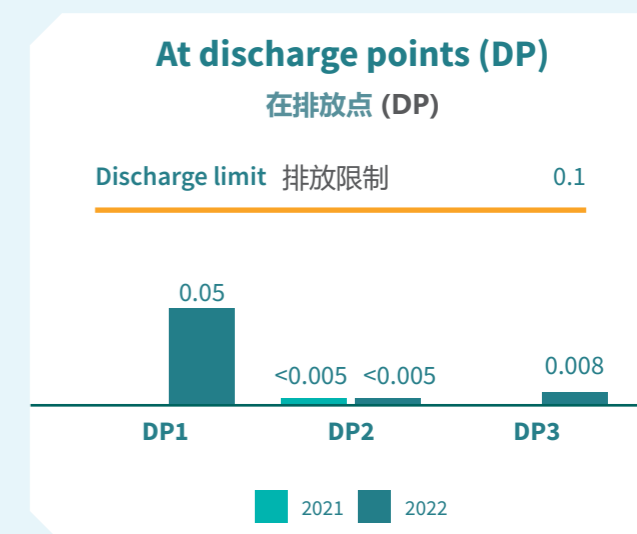
在 HPL，我们在 HPAL 工艺中采用了一种荣获专利的六价铬还原方法。这种方法的主要优势在于，能够预先控制尾矿中形成的六价铬。这降低了精炼活动对地表水和地下水造成六价铬污染的可能性。这项专利是 Lygend 在 ENFI 的技术支持下于 2021 年推出的独立研究成果。我们的 HPAL 工厂是印尼首家采用该工艺的工厂，并且我们已经获得了专门针对奥比岛矿石特性的印尼注册专利。

在我们的监测点，特别是在 Harita Nickel 综合体周围的三个排放点和 DSTF 的地下水监测点，经常都会检测到微量的六价铬。这些六价铬是由尾矿和周围采矿作业产生的径流所带来的。

Cr6 levels at monitoring points 2021–2022 (mg/L)
2021—2022 年监测点的六价铬含量 (mg/L)



Note: These groundwater monitoring points are located around the DSTF.
注意：这些地下水监测点位于 DSTF 周围。



Note: These points measure runoff and treated wastewater from HPL living quarters, offices, jetty, and stockpile areas that are combined with discharge from other Harita Nickel operational, residential, and office discharge (DP1 and DP3), and specifically discharge from the HPL wastewater treatment plants (DP2).
注意：这些点主要测量来自 HPL 生活区、办公室、码头和堆放区的径流和经处理的废水，这些废水将与其他 Harita Nickel 工厂、住宅和办公室排放 (DP1 和 DP3) 的排放物，特别是来自 HPL 废水处理厂 (DP2) 的排放物混合在一起。

Managing Environmental Impacts | 管理环境影响

Community drinking sources

Safety concerns have been raised concerning the level of Cr6 in local drinking water, such as the Kawasi water spring. A contracted, accredited laboratory closely monitors levels of Cr6 in community water sources. Results from a ten-year period (2013—2023) have consistently shown that average levels of dissolved Cr6 content in the Kawasi spring is 0.015 milligrams per liter (mg/L) – significantly lower than government-mandated thresholds. This conclusively proves it is safe for human consumption.

We would like to reiterate that any acceptable trace levels of Cr6 in water sources result from the mining process and not waste disposal by PT HPL.

Monitoring marine life

Harita Nickels also conducts regular studies and monitors the quality of marine life, such as fish, coral reefs, and seagrass beds, to ensure their health is not negatively impacted. Our teams conduct weekly checks at our Obi Island operations through water survey vessels equipped with monitoring tools. Third-party experts also conduct external assessments every six months. Any potential issues are thoroughly investigated and mitigated. The group has initiated several programs, with more to follow, to improve marine life and ecosystem services. For more details, please refer to [PT TBP SR2022](#), p.118.

In 2022, the IPB University (Institute Pertanian Bogor [IPB]) conducted an independent study of the seawater quality and related impacts on the health and productivity of the marine living organisms (biota) in six areas off the coast of Obi Island, Bacan Island, and Ternate in Maluku, Indonesia. The study demonstrated no increase in heavy metal in marine life tested in the water bodies surrounding the Kawasi water sites.

社区饮用水源

当地饮用水（如 Kawasi 泉水）中的六价铬含量引起了安全担忧。一家经认可的签约实验室会密切监测社区水源中的六价铬含量。十年期间（2013—2023）的结果一致表明，Kawasi 泉水中溶解的六价铬含量的平均水平为 0.015 毫克/升 (mg/L)，大幅低于政府规定的阈值。这有力地证明了这些泉水可供人类安全饮用。

我们想重申的是，水源中任何可接受的微量六价铬都是由采矿过程产生的，而并非源自于 PT HPL 处置的废弃物。

监测海洋生物

Harita Nickel 还会对鱼类、珊瑚礁、浮游生物和底栖生物等海洋生物的质量定期进行研究和监测，以避免它们的健康受到不利影响。我们的团队每周都会在奥比岛的运营地点使用配备监测工具的水质调查船进行海水质量检查。第三方专家也会每六个月进行一次外部评估。任何潜在问题都会得到彻底调查和缓解。为了改善海洋生物和生态系统服务，集团启动了多项计划，并将陆续推出更多计划。有关更多详细信息，请参阅 [PT TBP SR2022](#)，第 118 页。

2022 年，IPB 大学 (Institute Pertanian Bogor [IPB]) 对印度尼西亚马鲁古奥比岛、巴坎岛和特尔纳特海岸外的六个地区的海水质量及其对海洋生物（生物群）健康和繁殖能力的相关影响进行了独立研究。该研究表明，在 Kawasi 水域周围的水体中测试的海洋生物中重金属含量并无增加。

Managing Environmental Impacts | 管理环境影响

Waste management

Our HPAL facility, supporting processes, and construction produce several types of waste. In 2022, we generated 4,648,922 tons of waste – 2.8 times more than the previous year.

Tailings comprise 99% of our overall waste, which consists of leftover materials from mined ore processing. This includes ground rock, unrecoverable and uneconomic metals, chemicals, organic matter, and effluent from the HPAL process. Our tests have concluded that our tailings are non-toxic. However, tailings are regarded as hazardous as per government regulation parameters. Accordingly, PT HPL implements strict procedures to properly manage them. Other hazardous waste produced by our facilities, employee clinics, and laboratories is handled by licensed third-party vendors who ensure it is responsibly disposed of.

Our non-hazardous waste comes from construction, recycled FABA, and office and domestic activities. In 2022, we produced 26,292 tons of non-hazardous waste, which is typically separated. Of this, 39% is FABA re-used for backfilling at our DSTF. Any remaining non-hazardous construction waste is sent to landfill.

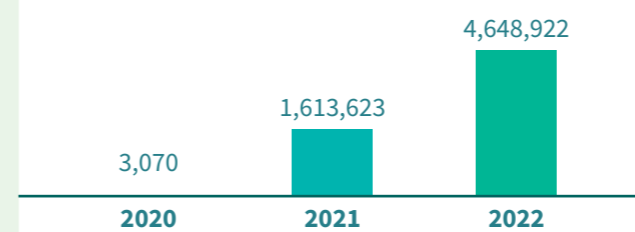
废弃物管理

我们的 HPAL 设施、配套工艺和施工会产生多种类型的废弃物。2022 年，我们产生了 4,648,922 吨废弃物，是前一年的 2.8 倍。

尾矿占到了我们废弃物总量的 99%，主要由开采矿石加工的剩余材料组成。这包括地面岩、不可回收和不具经济价值的金属、化学品、有机物和 HPAL 工艺产生的废水。经测试得出结论，我们的尾矿不具有毒性。然而，根据政府监管参数，尾矿仍被视为有害物质。因此，PT HPL 采取了严格的程序来对其加以妥善管理。我们的设施、员工诊所和实验室产生的其他危险废弃物由有执照的第三方供应商处理，他们将确保以负责任的方式进行处置。

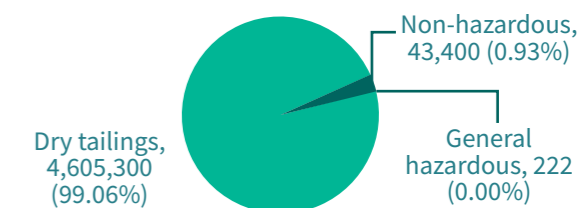
我们的无害废弃物来自建筑、回收的 FABA 以及办公室和家庭活动。2022 年，我们产生了 26,292 吨无害废弃物，这些废弃物通常都已经过了分类。其中 39% 为 FABA，被用于我们干堆尾矿设施 (DSTF) 的回填。其余的无害建筑垃圾都会被送往垃圾填埋场。

Total waste generated 2020—2022 (t)
2020—2022 年产生的废弃物总量 (t)



Total waste generated by type 2022 (t%)
2022 年按类型列出的所产生废弃物总量 (t %)

Total: 4,648,922t
合计:



Note: Waste data for 2021 has been restated from our previous report.
注意：2021 年的废弃物数据是根据我们之前的报告重新编制的。

Managing Environmental Impacts | 管理环境影响

Tailings management

Because more MHP was processed in 2022, our total dry tailing waste was 4.6 million tons, compared to 1.6 million tons in 2021. Our tailings are carefully managed and 100% are stored at our 195-hectare DSTF after having undergone a filter press that reduces the moisture content to 35%. Dewatering the tailings is crucial for achieving similar characteristics to the original laterite soil, allowing the waste to restore its solid properties and remain stable when stacked.

Our facility was carefully planned and constructed following a thorough assessment of site conditions (e.g., climate-related risks, such as rainfall patterns and seismic hazards from earthquakes, topography, geology, hydrology, and hydrogeology). This was critical to ensure that the area has proper drainage and remains secure, physically stable, and economical in terms of storage capabilities while also minimizing risks related to employee health and safety, public health, and environmental impact. Our design and operations of the facility are in line with international standards such as the Australian National Committee on Large Dams (ANCOLD), the International Committee on Large Dams (ICOLD), and the Global Industry Standard on Tailings Management (GISTM). The facility's design was subject to a thorough review by the Indonesian Dam Safety Commission, including an international assessment.

尾矿管理

由于 2022 年加工了更多的 MHP，我们的干尾矿废弃物总量为 460 万吨，而 2021 年为 160 万吨。我们对尾矿进行了精心管理，在经过压滤机将含水量降至 35% 后，100% 的尾矿都被储存在占地 195 公顷的 DSTF 中。尾矿脱水对于实现与原始红土土质相似的特性至关重要，可使废弃物恢复其固体特性，并在堆放时保持稳定。

我们的设施是在对现场条件（如降雨模式等气候相关风险，以及地震、地形、地质、水文和水文地质造成的地震危害）进行全面评估后精心规划和建造的。这对于确保该区域有适当的排水系统，保持安全、物理稳定且经济的存储能力，同时最大限度地降低与员工健康和公共安全、公共卫生和环境影响相关的风险至关重要。我们的设施设计和运营符合国际标准，如澳大利亚国家大坝委员会 (ANCOLD)、国际大坝委员会 (ICOLD) 和全球尾矿管理行业标准 (GISTM)。印尼大坝安全委员会对该设施的设计进行了全面审查，其中包括一项国际评估。

All necessary environmental permits from the Ministry of Environment and Forestry have been obtained, including the Technical Approval (Pertek) Number S.763/PSL83/PLB3/PLB.3/12/2022 to manage dry tailings, which specifies the provisions and responsibilities for hazardous waste management and stockpiling activities.

We have never disposed of tailings into waterways or any area outside the DSTF. We strictly prohibit the dumping of deep-sea tailings.

In line with our permit, we ensure that dry tailings are non-explosive, non-flammable, non-reactive, non-toxic in line with LD50 and LC50 accepted levels and sub-chronic toxicity studies, and non-corrosive with pH levels at +/-8. The overall chemistry, toxicity, and chronic leaching of our dry tailings meet all regulatory requirements.

We regularly monitor wastewater content, groundwater quality, leachate treatment pond outlet water quality, slope elevation, and stability and met all stipulated requirements in 2022. Outcomes of accredited laboratory test results are available [online](#).

New tailings SOP

In May 2023, a detailed standard operating procedure (SOP) was developed for dry and stack tailings and to ensure we remain compliant with regulations and minimize any environmental impacts. The SOP formalizes our approach to sound management of tailings, and cover matters such as transportation of tailings, contingency plans in the event of facility or mechanical failure, and requirements for managing water quality.

Trialing vegetation on dry stacks

In 2023, we will begin trialing planting vegetation on dry tail that has been piled to its maximum height. This follows studies of tree growth and monitoring plans that commenced in August 2023. The vegetation types being tested are sorghum grain, Sengon wood (*Paraserianthes falcataria*), *Mucuna bracteata* (a legume cover crop), and signal grass (*Brachiaria decumbens*). We will report on our progress in our next report.

已从环境和林业部获得所有必要的环境许可证，包括编号为 S.763/PSL83/PLB3/PLB.3/12/2022 的干尾矿管理技术批准书 (Pertek)，其中明确规定了危险废弃物管理和堆放活动的条款和责任。

我们从未向水道或 DSTF 以外的任何区域倾倒尾矿。我们严格禁止深海尾矿倾倒。

根据相关许可证，我们确保干尾矿具有非爆炸性、不易燃性、无反应性、无毒性，符合 LD50 和 LC50 可接受的水平以及亚慢性毒性研究，并且 pH 值为 +/-8 时无腐蚀性。我们干尾矿的总体化学性质、毒性和长期浸出符合所有监管要求。

我们定期监测废水含量、地下水质量、渗滤液处理池出水水质、边坡高程和稳定性，并在 2022 年达到了所有规定要求。经认可的实验室测试结果可[在线查阅](#)。

新尾矿 SOP

2023 年 5 月，我们针对干尾矿和堆积尾矿制定了详细的标准操作程序 (SOP)，以确保我们遵守相关法规，并最大限度地减少对环境的影响。该 SOP 正式确立了我们对尾矿进行妥善管理的方法，并涵盖了尾矿运输、设施或机械故障时的应急计划以及水质管理要求等事项。

在干堆上试种植被

2023 年，我们将开始在堆积到最大高度的干尾矿上试种植被。此前，我们已于 2023 年 8 月开始对树木生长和监测计划进行了研究。正在试种的植被类型包括高粱、Sengon 木 (*Paraserianthes falcataria*)、*Mucuna bracteata* (一种豆类覆盖作物) 和信号草 (*Brachiaria decumbens*)。我们将在下一次报告中汇报相关进展情况。

Managing Environmental Impacts | 管理环境影响

Environmental compliance

We make every effort to comply with the law in all aspects of our operation and regularly report our environmental data to regulators. There were no instances of environmental non-compliances in 2022. However, we do monitor any irregularities that breach our environment and safety protocols. One such instance arose in February 2022, when during regular scheduled maintenance, 100 liters of fuel spilled in a boiler area while draining fuel oil from the supply pipe to drums at our acid plant. Our teams reacted quickly and informed our environment teams and relevant power plant managers. The situation was immediately contained according to our fuel spill protocols, and the necessary safety precautions were taken in line with our health and safety standards.

环境合规性

我们在运营的各个方面都尽一切努力遵守法律，并定期向监管机构报告我们的环境数据。2022年，我们没有发生任何环境违规事件。不过，我们会对任何违反环境和安全协议的违规行为进行监控。其中一次发生在2022年2月，当时是我们的制酸厂在进行定期计划维护，在从供油管向油桶排放燃油时，有100升燃油泄漏到了锅炉区域。我们的团队迅速做出反应，并通知了我们的环境团队和相关的发电厂经理。根据我们的燃料泄漏规程，情况立即得到了控制，并按照我们的健康和标准采取了必要的安全预防措施。

**HUMAN RIGHTS****人权**

Our company puts people first. We are committed to respecting and upholding the rights of everyone associated with our operations – from our employees to the local communities and suppliers we work with. Our commitments align with international standards for our employees and surrounding communities, such as the United Nations Guiding Principles on Business and Human Rights (UNGPs) and the International Labour Organization (ILO). These commitments are integrated into our policies and practices throughout the company.

我们公司以人为本。我们致力于尊重和维护与我们的运营相关的每个人的权利，包括我们的员工、当地社区以及与我们合作的供应商。我们的承诺与针对员工和周边社区的国际标准保持一致，如《联合国工商业和人权指导原则》(UNGPs) 和国际劳工组织 (ILO)。这些承诺已融入到我们整个公司的政策和实践中。

As a responsible operator in Indonesia, we have made significant investments toward the economic development of Obi Island communities. Apart from investing in community initiatives, we focus on generating jobs, prioritizing local employment, and empowering community members to become suppliers to better their livelihoods.

作为印度尼西亚一家负责任的经营商，我们为奥比岛社区的经济 development 做出了重大投资。除了投资于社区倡议外，我们还专注于创造就业机会，优先考虑当地就业，并帮助社区成员成为供应商，以改善他们的生活。

In 2020, as part of our Environmental and Social Action Plan, PT HPL conducted a preliminary human rights assessment. The plan aimed to provide investors with insight into our strengths and areas of focus for future plants. In 2023, we will conduct a more comprehensive human rights assessment within the wider Harita Nickel Group to inform our policies and on-the-ground measures. In 2023, we are also developing a dedicated Group-level Human Rights Policy.

2020年，作为我们环境和社会行动计划的一部分，PT HPL进行了初步人权评估。该计划旨在让投资者深入了解我们的优势和未来工厂的重点领域。2023年，我们将在更广泛的Harita Nickel集团内进行更全面的人权评估，为我们的政策和实地措施提供依据。2023年，我们还在制定专门的集团人权政策。

Human Rights | 人权

Our workforce⁵

We rely heavily on the perseverance and dedication of our employees. We are committed to providing stable employment and upholding all our workers' rights in line with the ILO principles of decent work. This includes ensuring fair and equitable employment practices, maintaining open dialogue with our employees, providing a safe working environment, and investing in training and development. Our procedures are guided by our Human Resources (HR) Management Policy.

As of December 2022, PT HPL has 5,454 employees. Of this, 1,080 were permanent (20%), while the remaining 4,374 are non-permanent workers (80%) hired on contracts that are renewed accordingly. Contracted employees are primarily employed for on-the-ground operational positions ("non-staff"). We also hire some contract employees at the supervisor, superintendent, and managerial levels. The performance of contracted employees is evaluated after a minimum of two years working with PT HPL, after which they are eligible for permanent employee status.

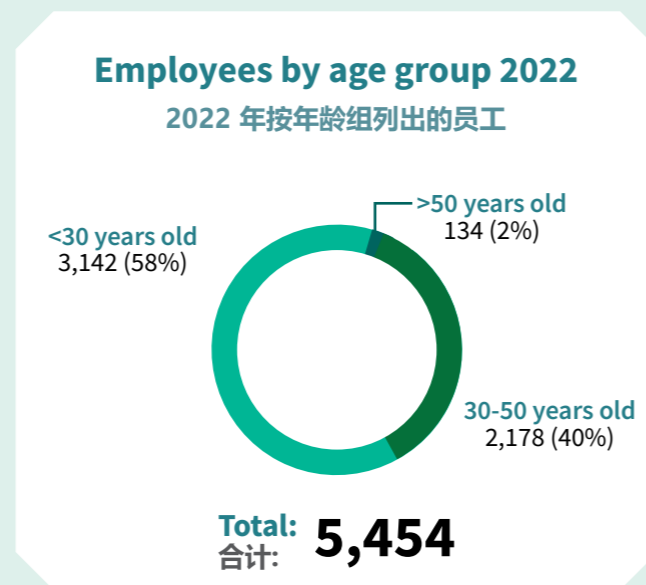
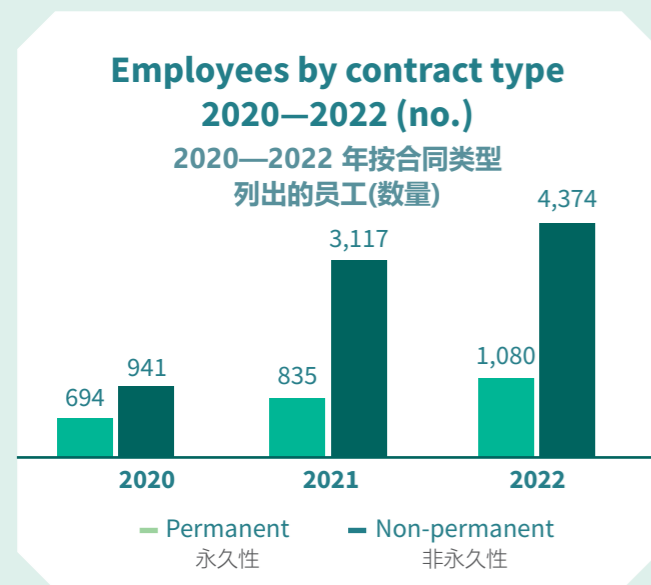
As HPAL technology is new to Indonesia, it is difficult to find experienced employees for the positions required. This allows us to prioritize hiring recent graduates from metallurgy-related fields and giving them the relevant training. Consequently, 58% of our employees are under the age of 30.

我们的员工队伍⁵

我们在很大程度上依赖员工的毅力和奉献精神。我们致力于提供稳定的就业机会，并根据国际劳工组织的体面工作原则维护我们员工的所有权利。这包括确保公平公正的就业实践，与员工保持公开对话，提供安全的工作环境，以及投资于培训和培养。我们的程序以人力资源 (HR) 管理政策为指导。

截至 2022 年 12 月，PT HPL 共有 5,454 名员工。其中，1,080 人是永久性员工 (20%)，其余 4,374 人是根据相应续签的合同雇佣的非永久性员工 (80%)。合同员工主要受雇于现场业务岗位 ("编外人员")。我们还雇佣了一些主管、总监和管理级别的合同制员工。合同员工在 PT HPL 工作至少两年后，我们会对其工作表现进行评估，之后他们才有资格成为正式员工。

由于 HPAL 技术在印尼尚属新生事物，因此很难找到经验丰富的员工来担任所需的职位。为此，我们优先聘用冶金相关专业的应届毕业生，并对他们进行相关培训。正因如此，我们 58% 的员工年龄在 30 岁以下。



⁵ All data in this section does not include employees from other companies at the Harita Nickel complex with cross-functional roles that may include job duties for PT HPL. This data is detailed in [PT TBP Tbk 2022 Sustainability Report](#).
⁵ 本部分中的所有数据都不包括 Harita Nickel 综合体其他公司的跨职能员工，他们的职能可能包括 PT HPL 的工作职责。相关数据详见 [PT TBP Tbk 2022 年可持续发展报告](#)。

Human Rights | 人权

Wages, benefits, and working hours

Given our operational remoteness and the requirement for workers to relocate to Obi Island, we offer attractive remuneration packages. Consequently, we ensure that our staff are fairly compensated with wages that exceed government stipulations. To determine our competitiveness, we assess the prevailing wage rates for all categories of employees.

Our policy guarantees equal pay for equal work, regardless of gender. In addition to basic wages, remuneration in the form of overtime pay and allowances is provided to staff and operational employees. Our entry-level salary exceeds the Indonesian provincial monthly minimum wage of IDR 2,862,231.

At entry-level, women generally receive a higher base salary than men, with an average of IDR 3,524,590 (23% more than minimum wage); men were paid IDR 3,344,355 (17% above minimum wage). This is because more females are employed in higher-paying administrative and office-level positions compared to operational-level employees, where most hires are male.

Operational employees are paid higher remuneration, such as for overtime hours. As a result, men at the operational level receive higher remuneration than women, given that most operational-level positions are taken up by male hires. When remuneration is combined with wages, men are compensated with an amount equivalent to IDR 7,572,544; women receive IDR 5,816,781. This is 265% and 203% more than minimum wage, respectively.

Wages and remuneration by gender 2022 (IDR)

	Men 男性	Women 女性
Provincial minimum wage 省级最低工资	2,862,231	2,862,231
Entry-level wages 初级职等工资	3,344,355	3,524,590
Remuneration 薪金	4,228,189	2,292,191
Total basic salary paid 支付的工资总额	7,572,544	5,816,781
Total compared vs. minimum wage 与最低工资相比的总额	+265%	+203%

Employees enjoy a comprehensive range of benefits to help maintain decent living standards. These comprise free housing for all on-site employees and include meals, laundry, housekeeping, and free healthcare at our 24-hour on-site health clinics, as well as sports and religious facilities. These benefits are almost the same for both permanent and non-permanent employees, with one difference for permanent employees: the coverage provided by their health insurance plan also extends to their family members. Non-permanent employees, aside from being entitled to medical leave, also have the same benefits for yearly leave and are entitled to bonuses including *Hari Raya* festive bonuses.

工资、福利和工作时间

鉴于我们的工厂较为偏远，并且员工需要搬迁到奥比岛，因此我们提供了极具吸引力的薪酬福利。因此，我们确保员工得到公平的报酬，工资高于政府规定。为了确定我们的竞争力，我们会对各类员工的现行工资率进行评估。

我们的政策保证同工同酬，不分性别。除基本工资外，我们还为员工和操作员工提供加班费和津贴。我们的初级职等工资超过了印尼省级最低工资标准 2,862,231 印尼盾。

对于初级职等，女性的基本工资普遍高于男性，平均为 3,524,590 印尼盾 (比最低工资高 23%)；而男性的工资为 3,344,355 印尼盾 (比最低工资高 17%)。这是因为有更多的女性受雇于薪酬较高的行政和办公室职位，而操作级员工大多为男性。

操作员工的薪金更高，例如加班时间。因此，鉴于大多数业务级职位都由男性担任，操作层面的男性薪金高于女性。

如果将薪金与工资合并计算，男性的薪酬相当于 7,572,544 印尼盾；而女性的薪酬相当于 5,816,781 印尼盾。这分别比最低工资高出 265% 和 203%。

2022 年按性别列出的工资和薪金 (IDR)

员工享有一系列全面的福利，以帮助维持体面的生活水平。这些福利包括为所有现场员工提供免费住房、膳食、洗衣、家政服务、24 小时现场诊所的免费医疗保健以及体育和宗教设施。永久性和非永久性员工的这些福利几乎相同，但永久性员工具有一项区别：对于永久性员工而言，他们的健康保险计划会将其家庭成员也纳入在内。非永久性员工除享有病假外，还享有同样的年假福利，并且还可领取包括开斋节奖金在内的各种奖金。

All working hours adhere to Indonesian regulations, specifically Law No. 2 of 2022 on Job Creation (Regulation) and Government Regulation No. 35 of 2021, including regular hours and overtime. Overtime is voluntary; all employees are entitled to rest days and annual vacation. According to seniority, employees receive two weeks' leave per nine or ten weeks of work, with the company covering travel expenses to and from their home base. Parental leave mandated by government regulation is offered to all married employees. In 2022, 1,615 employees were eligible for parental leave and 28 took parental leave in the year.

All employees have the right to freedom of association and collective bargaining. No collective groups have formed yet, but should they do so, we will respect and facilitate all union needs and rights. Meanwhile, following the customary practices in Indonesia, we continue to maintain open and regular dialogue.

Employee diversity

We do not tolerate discrimination and strive to ensure all practices uphold the principles of equality and fairness as outlined in our Code of Conduct, regardless of gender, age, ethnicity, or religious belief.

Of our total workforce, 4,642 are Indonesian employees, while the remaining 812 are foreign nationals. Foreign employees are typically hired as supervisors for their technology experience and to manage our HPAL facility. Over the years, we have increased our ratio of Indonesian to foreign employees (from 75% in 2020 to 85% in 2022).

所有工作时间都遵守印度尼西亚法规，特别是 2022 年第 2 号《创造就业法》（条例）和 2021 年第 35 号政府条例，包括正常工作时间和加班时间。加班都出于自愿；所有员工都有权享有休息日和年假。根据工龄，员工每工作九周或十周可享受两周假期，公司负责支付往返工厂的差旅费。所有已婚员工均可享受政府规定的育儿假。2022 年，1,615 名员工有资格享受育儿假，并有 28 人休了育儿假。

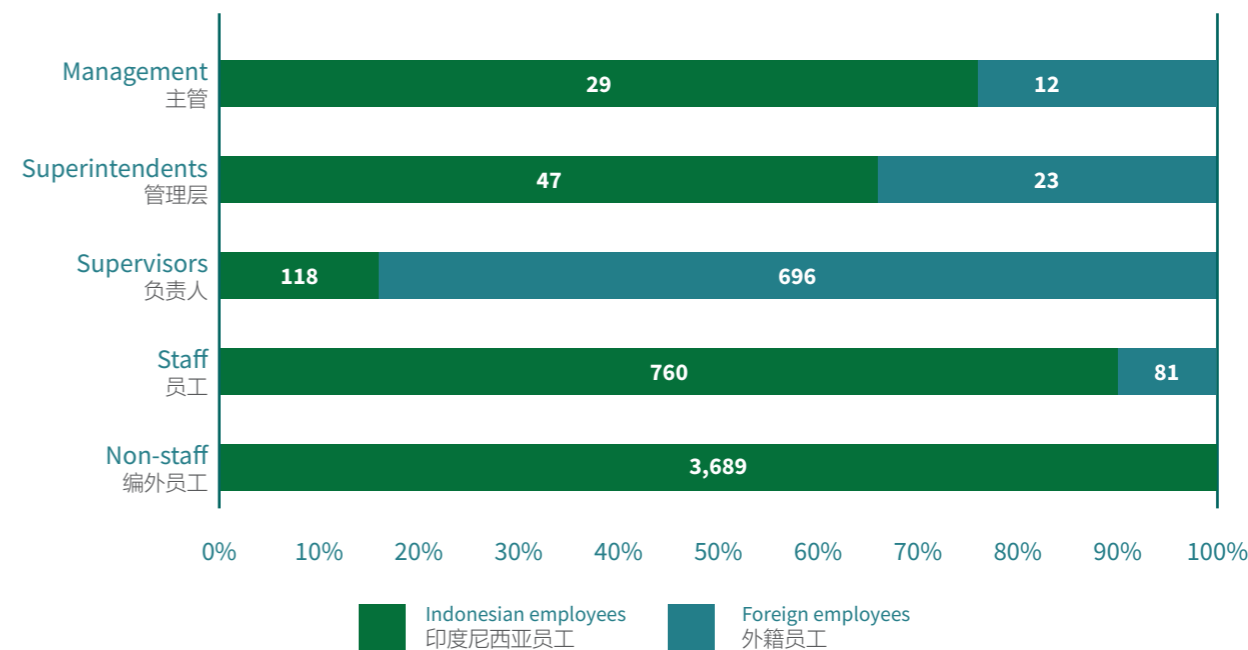
所有员工都享有结社自由和集体谈判的权利。目前尚未成立任何集体团体，但如果成立，我们将尊重并促进所有工会的需求和权利。与此同时，按照印度尼西亚的惯例，我们继续保持公开和定期的对话。

员工多样性

我们不容忍歧视，并确保所有做法都遵循《行为准则》中规定的平等和公平原则，而不论性别、年龄、种族或宗教信仰如何。

在我们整个员工队伍中，4,642 名是印度尼西亚员工，其余 812 名是外国公民。外籍员工通常因技术经验丰富而被聘为主管，并负责管理我们的 HPAL 工厂。多年来，我们提高了印尼员工与外籍员工的比例（从 2020 年的 75% 提高到了 2022 年的 85%）。

Indonesian vs foreign employees by category 2022 (no., %) 2022 年按类别列出的印度尼西亚员工与外籍员工（数量，%）



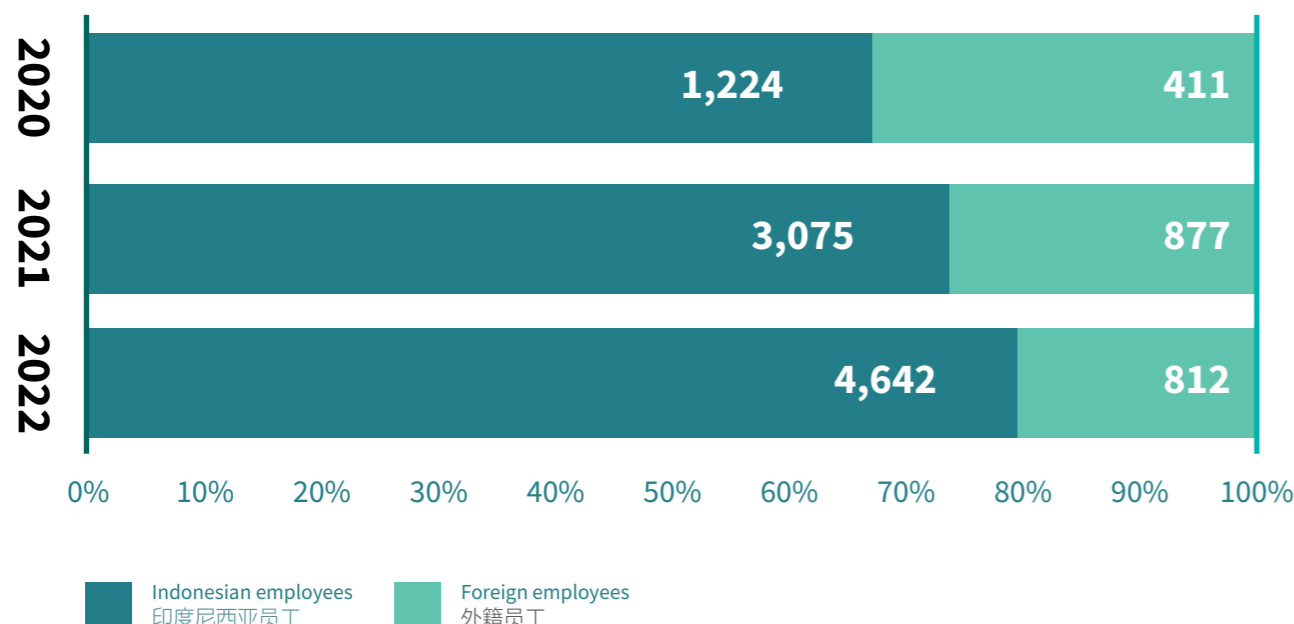
Prioritizing local

As part of our growth plan, we will continue to prioritize local talent from North Maluku. Of all Indonesian employees, 43.9% come from the North Maluku region, while the remainder are from various provinces throughout the country.

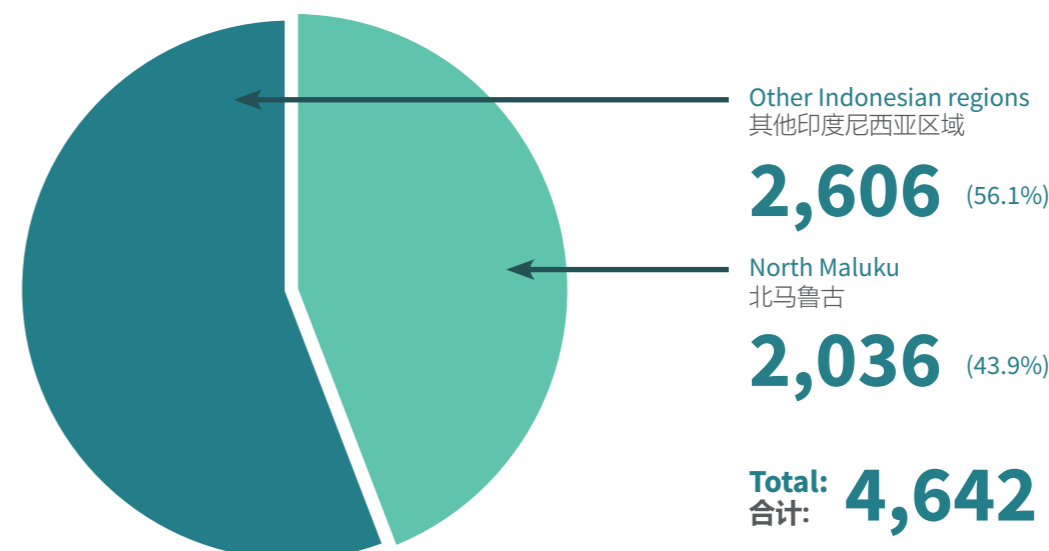
优先考虑本地人才

作为发展计划的一部分，我们将继续优先考虑来自北马鲁古的当地人才。在所有印尼员工中，43.9% 来自北马鲁古地区，其余则来自全国各省。

Indonesian vs foreign employees 2020–2022 (no., %) 印尼员工与外籍员工（数量，%）



Indonesian employees by region 2022 (no., %) 2022 年按区域列出的印度尼西亚员工（数量，%）



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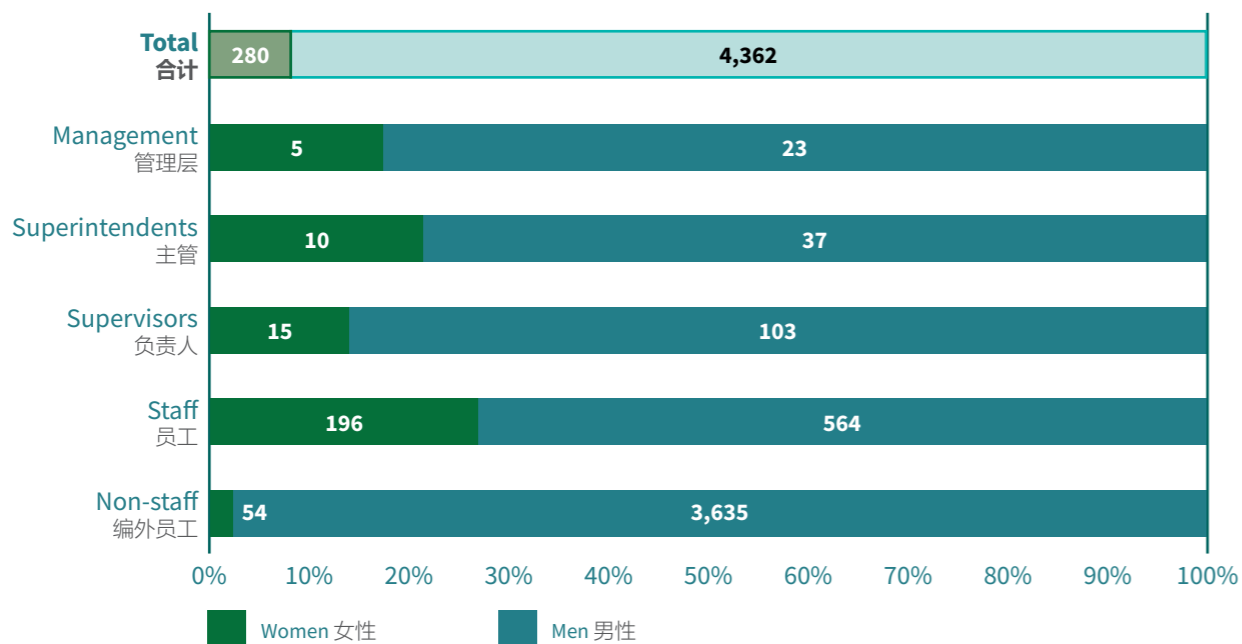
Gender diversity

Our operations employ significantly more men than women. Of all our Indonesian employees, only 329 employees are female (6%). This is because, in this industry, operational-level work is predominantly manual and requires physical strength. Also, women wanting to balance work and family commitments typically avoid operational jobs in remote locations that require extended periods away from home. However, a higher percentage of women work in executive and leadership roles, such as supervisors (26%), superintendents (21%), and management (18%).

性别多样性

我们的业务部门中，男性员工明显多于女性员工。在我们所有的印尼员工中，只有 329 名女性员工 (6%)。这是因为，本行业操作层面的工作主要是体力活，需要消耗体力。此外，希望兼顾工作和家庭责任的女性通常会避免从事需要长时间离家的偏远地区从事操作性工作。然而，担任行政和领导职务的女性比例更高，如主管 (26%)、负责人 (21%) 和管理层 (18%)。

Indonesian employees gender breakdown by category 2022 (no.,%)
2022 年按类别列出的印度尼西亚员工性别细分 (数量, %)



Recruitment and talent development

Our company and workforce continue to grow. We prioritize finding the best candidates and providing training and growth opportunities for all new hires. Our hiring process is based solely on merit, qualifications, and the ability to perform the required tasks. We strictly prohibit child labor and forbid hiring individuals under the age of 18. Additionally, we do not engage in forced or bonded labor. All our employees are employed directly by us and not through recruitment agencies. In 2022, we hired 3,197 new employees, of which 92% were local Indonesians. Of this, 40% were locals from North Maluku.

招聘和人才培养

我们的公司和员工队伍不断壮大。我们优先考虑寻找最佳人选，并为所有新聘员工提供培训和成长机会。我们的招聘流程完全基于业绩、资历和执行所需任务的能力。我们严禁使用童工，禁止雇用 18 岁以下的人员。此外，我们不从事强迫劳动或抵债劳动。所有员工都由我们直接聘用，而非通过招聘机构。2022 年，我们雇佣了 3,197 名新员工，其中 92% 是印尼当地人。其中，40% 是来自北马鲁古的当地人。

New hires 2022 (no., (%))
2022 年新聘员工 (数量, (%))

Total: 3,197
合计: 3,197

	No.	%	
By gender 按性别	Men 男性	3,005	94.0%
	Women 女性	192	6.0%
By age group 按年龄组	<30 years old <30岁	2,190	68.5%
	30-50 years old 30-50岁	983	30.7%
	>50 years old >50岁	24	0.8%
Indonesians vs. foreigners 印尼人与外国人	Indonesians from North Maluku 来自北马鲁古的印尼人	1,274	39.8%
	Indonesians from Other Regions 来自其他地区的印尼人	1,667	52.1%
	Foreigners 外国人	256	8.0%

PT HPL takes proactive steps to anticipate and develop our workforce talent through talent development programs and job function needs analyses. We offer all our employees a range of informal and formal training, education, and development opportunities throughout the year. To ensure continuous improvement, we evaluate each program's effectiveness upon completion and make any appropriate adjustments to the program modules.

Our programs cover a range of skills, including technical, job-related, health and safety, security, leadership, and soft skills. This includes training on ESG and our sustainability policy commitments, which began in 2022. In 2022, employees received 1.2 hours of training on average.

PT HPL 采取积极主动的措施，通过人才培养计划和工作职能需求分析来预测和培养我们的员工队伍人才。我们全年为所有员工提供一系列非正式和正式的培训、教育和发展机会。为确保持续改进，我们会在每个项目完成后对其效果进行评估，并对项目模块进行适当调整。

我们的项目涵盖一系列技能，包括技术、工作相关、健康与安全、安保、领导力和软技能。这包括从 2022 年开始的 ESG 培训，以及我们的可持续发展政策承诺培训。2022 年，员工平均接受了 1.2 小时的培训。

Health and safety

We recognize the high-risk nature of certain jobs at our processing and refinery facilities. To ensure the safety and well-being of our employees, we have implemented a thorough work safety program. Company measures exceed typical procedural procedures and focus on teaching a veritable culture of safety and health throughout our operation.

Our company's Occupational Health and Safety (OHS) system is aligned with national regulations, specifically Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) and ISO 45001 standards. This system covers all PT HPL employees and on-site contractors. In 2022, we undertook our first external audit against SMK3, and in 2023, we are preparing for certification against ISO 45001 and 14001 standards.

健康与安全

我们认识到加工和精炼设施某些工作的高风险性质。为了确保员工的安全和福祉，我们实施了一项全面的安全生产项目。公司所采取的措施超越了一般的程序步骤，并注重在整个运营过程中传授名副其实的安全与健康文化。

我们的职业健康与安全 (OHS) 系统符合国家法规，特别是工作安全与健康管理系统 (SMK3) 和 ISO 45001 标准。此系统涵盖了 PT HPL 的所有员工和现场承包商。2022 年，我们根据 SMK3 标准进行了首次外部审计；2023 年，我们正在准备根据 ISO 45001 和 14001 标准进行认证。

To identify risks and inform mitigation plans, we conduct hazard identification and risk assessments (HIRA) and job safety analysis. These plans are regularly reviewed and updated. We provide all employees with adequate personal protective equipment (PPE), regular health and safety training, and annual health screenings. In 2022, 2,457 employees received health and safety training.

To reduce accident rates, we monitor all incidents involving our employees and contractors at our operations. Accidents are generally minor and can typically be treated at our first aid facilities, such as eye irritation from chemical exposure, small cuts, and pain from slip-and-fall incidents. Since the start of our operations, we have had no injuries resulting in lost workdays and no fatalities.

We also track our employees' disease or illness rates to determine overall health and the allocation of clinical needs.

为了识别风险并为缓解计划提供信息，我们进行了危害识别和风险评估 (HIRA) 以及工作安全分析。我们会对这些计划定期进行审查和更新。我们为所有员工提供充足的个人防护装备 (PPE)、定期健康与安全培训以及年度健康检查。2022 年，共有 2,457 名员工接受了健康与安全培训。

为了降低事故发生率，我们会对业务运营中涉及员工和承包商的所有事故进行监控。事故一般都很轻微，通常可以在我们的急救设施进行治疗，例如接触化学物质引起的眼睛刺激、小伤口以及滑倒和跌倒引起的疼痛。自开始运营以来，我们没有发生过导致工作日损失的工伤事故，也没有发生过死亡事故。

我们还会跟踪员工的疾病发生率，以确定整体健康状况和临床需求分配。

Employee and contractor incidents by type 2020–2022 (no.)

2020—2022 年按类型列出的员工和承包商事故 (数量)

Incident type 事故类型	First aid cases 急救案例			Injuries requiring medical attention 需要治疗的工伤			Total recordable injury frequency rate (TRIFR) 合计可记录的工伤频率		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Employees 员工	27	81	133	7	51	55	1.27	7.14	3.01
Contractors 承包商	78	79	129	46	90	76	5.18	8.42	5.19
Total 合计	105	160	262	53	141	131	NA 不适用		

Note: TRIFR is calculated as the number of injuries requiring medical attention divided by total hours worked, multiplied by 1,000,000.
注意：TRIFR 根据每百万工作小时需要医疗治疗的工伤计算得出。

Harita Nickel community support

Our operations are in the South Halmahera Regency of North Maluku, which is home to many villages. Under Harita Nickel, we have built long-term partnerships with local community members of the ten villages within our vicinity. We aim to uphold their rights, engage in continuous and constructive engagement, and implement targeted programs to address their needs. All business units under Harita Nickel, including PT HPL, share the costs and contribute to these Group-level programs.

Our success and the community's well-being are indivisible, and we are committed to supporting local initiatives that promote economic and social growth. To achieve this, the Group conducts social and participatory mapping exercises to assess the impact of all operations in the area and collaborates with the community to identify ways to enhance their economic development.

社区支持

我们的工厂设在北马鲁古省南哈马黑拉县，那里有许多村庄。Harita Nickel 与附近十个村庄的当地社区成员建立了长期合作伙伴关系。我们的目标是维护他们的权利，与他们进行持续和建设性的接触，并实施有针对性的计划来满足他们的需求。Harita Nickel 旗下的所有业务部门，包括 PT HPL，都为这些集团层面的计划分担成本并做出贡献。

我们的成功与社区的福祉密不可分，我们致力于支持当地促进经济和社会发展的举措。为了实现这一目标，集团开展了社会和参与性摸底活动，以评估所有业务在当地的影响，并与社区合作，确定促进其经济发展的方法。

This includes identifying specific programs that provide resources and improve the livelihoods of local farmers and fishers and finding ways to generate income by integrating community members as suppliers to Harita Nickel and its associate companies, including PT HPL.

As of 2022, Harita Nickel's value-added investments have resulted in a significant increase in the gross regional product for the South Halmahera Regency: from IDR 6,300 billion in 2018 to over IDR 14.3 billion in 2022.

Addressing community grievances

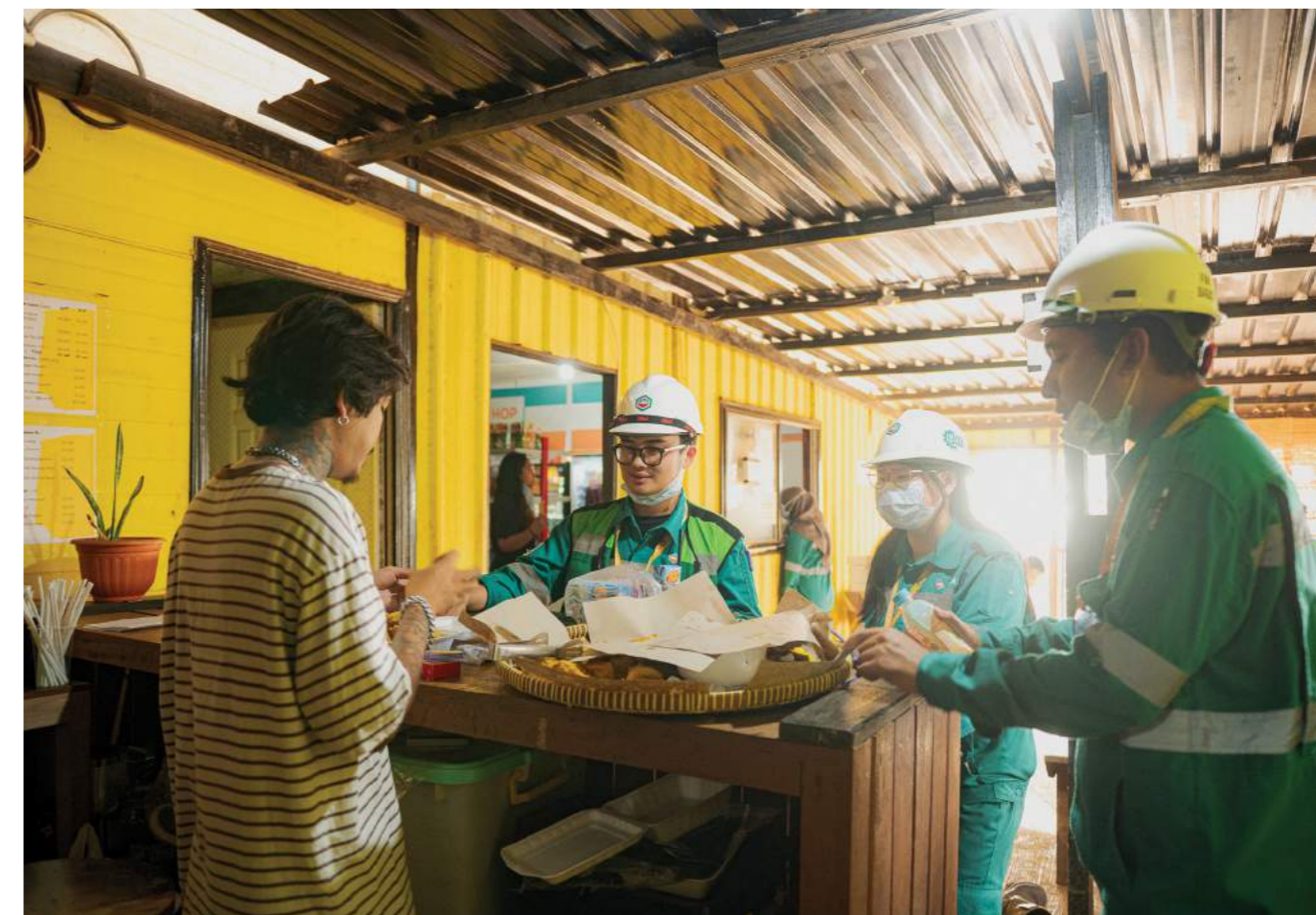
Community members have access to a robust grievance mechanism established by the company to ensure that all concerns are formally documented and addressed. Our Community Relations department administers the system and works with relevant departments to examine and follow up any grievances or requests. Serious issues are followed up with detailed investigations. Affected community members are kept updated until a resolution has been reached.

这包括确定具体计划，为当地农民和渔民提供资源，改善他们的生计，并通过整合社区成员作为 Harita Nickel 及其关联公司 (包括 PT HPL) 的供应商来寻找创收的方法。

截至 2022 年，Harita Nickel 的增值投资使南哈马黑拉县的地区生产总值大幅增长：从 2018 年的 63 亿印尼盾增至 2022 年的超过 143 亿印尼盾。

处理社区申诉

社区成员可以使用公司建立的强有力申诉机制，以确保所有问题都得到正式记录和解决。我们的社区关系部负责管理该系统，并与相关部门合作，审查和跟踪任何申诉或请求。我们会对严重问题进行详细调查。我们会随时向受影响的社区成员通报最新情况，直至问题得到解决。



For more information, see [Whistleblowing and grievances](#).
有关更多信息，请参阅“举报和申诉”。

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Community development programs and 2022 highlights

Harita Nickel community programs focus on five key focus areas. Below are some of the initiatives conducted by Harita Nickel in 2022. **In 2022, PT HPL contributed to 76 programs for ten villages in the South Halmahera Regency.**

社区发展项目和 2022 年亮点

Harita Nickel 的社区计划主要集中在五个重点领域。以下是 Harita Nickel 在 2022 年采取的一些举措。**2022 年, PT HPL 为南哈马黑拉县 10 个村庄的 76 个项目做出了贡献。**

COMMUNITY DEVELOPMENT FOCUS AREAS 社区发展重点领域	
EDUCATION 教育	<ul style="list-style-type: none"> 5 scholarships awarded to students at the Labuha Agricultural School (STPL) 802 students took part in Harita teaching programs Supported 58 auxiliary and honorary teachers in Kawasi and in Soligi with incentives to improve students' educational performance School facilities and infrastructure, e.g., furniture, fences 向 Labuha Agricultural School (STPL) 的学生颁发 5 项奖学金 802 名学生参加了 Harita 教学项目 为 Kawasi 和 Soligi 的 58 名辅助教师和名誉教师提供支持, 以提高学生的学业成绩 学校设施和基础设施, 如办公学习家具、围栏
HEALTH 健康	<ul style="list-style-type: none"> Supported posyandus with facilities and resources to improve maternal and children's health, including malnutrition (2022: ~140 toddlers per month received immunization, feeding, and weighing) Supported polindes with facilities and resources for maternity and health services for pregnant women including stunting prevention programmes (2022: 2,2464 beneficiaries) Delivery of HIV/AIDS and infectious diseases screening and educational activities to 243 residents Provided free medical services in 3 villages, benefitting 221 patients Company clinic services and transport to medical facilities when required 为 posyandus 提供设施和资源, 以改善孕产妇和儿童健康, 包括营养不良问题 (2022 年: 每月约 140 名幼儿接受免疫接种、喂养和称重) 为 polindes 提供孕妇产科和健康服务设施和资源 (2022 年: 22,464 人从中受益) 向 243 名居民提供艾滋病/艾滋病和传染病筛查和教育活动 在 3 个村庄提供免费医疗服务, 惠及 221 名患者 在必要时提供公司诊所服务并将病人送往医疗机构
ECONOMIC DEVELOPMENT 经济发展	<ul style="list-style-type: none"> Sourced goods or services from 55 local businesses worth up to IDR 8 billion a month Supported micro-, small-, and medium-enterprises (MSMEs) and farmer groups with programs to supply snacks, build mini-marts, develop cafés, and agricultural cultivation training (tofu, tempeh, coconut, vegetables, fish, rice, etc.). Engaged with 15 farmer groups (285 members) and 31 female-led MSMEs that collectively earned IDR 85.7 million. Began construction of an integrated farming center for Salam Kawasi village members 从 55 家当地企业采购商品或服务, 每月价值高达 80 亿印尼盾 支持微型、小型和中型企业 (MSME) 和农户团体, 开展小吃供应、迷你集市建设、咖啡馆发展和农业种植培训 (豆腐、豆豉、椰子、蔬菜、鱼类、大米等) 等项目。参与了 15 个农户团体 (285 名成员) 和 31 个女性领导的中小微企业, 这些组织的总收入达到了 8,570 万印尼盾。 开始为 Salam Kawasi 村民建设一个综合农业中心
SOCIAL CULTURE 社会文化	<ul style="list-style-type: none"> Hosted traditional dance festivals to honor Tabelo-Galela and Buton tribes' cultural heritage Hosted programs during religious and cultural events, such as Ramadan, Eid al-Adha, and Christmas; including support for 120 microbusinesses during Ramadan that raised IDR 351 million Donated to 397 orphans across 7 villages Hosted programs for community, youth, and sports 举办传统舞蹈节, 以纪念 Tabelo Galela 和 Buton 部落的文化遗产 在宗教和文化活动期间举办项目 (如斋月、宰牲节和圣诞节); 包括在斋月期间支持 120 家微型企业, 筹集 3.51 亿印尼盾 为 7 个村庄的 397 名孤儿捐款 举办社区、青年和体育活动
INFRASTRUCTURE 基础设施建设	<ul style="list-style-type: none"> Established an integrated waste management program to gather and clean Kawasi community garbage: 513 tons collected in 2022 Continued road watering to limit dust surrounding Kawasi village Clean water for 250 Kawasi households Free electricity for Kawasi and free national grid connection installation for 36 houses/facilities in Dusun Tabuji Constructed an Obi-Sub district office to support public services Supported the renovation and development of facilities for community worship buildings Donated a fire truck and garbage truck for the government and a sea ambulance for the Obi Public Hospital 制定了综合废弃物管理计划, 以收集和清洁 Kawasi 社区垃圾: 2022 年收集了 513 吨 继续为道路洒水以减少 Kawasi 村周围的扬尘 为 250 户 Kawasi 家庭提供清洁水 为 Kawasi 免费供电, 并为 Dusun Tabuji 36 栋房屋/设施免费安装国家电网连接装置 建设奥比街道办事处, 为公共服务提供支持 支持社区礼拜建筑设施的翻新和开发 为政府捐赠一辆消防车和垃圾车, 为奥比公立医院捐赠一辆海上救护车

Notes:
 1. Posyandus are community-based integrated service posts specializing in improving mother and toddler nutritional care, specifically to address child malnutrition and reduce stunting.
 2. Polindes are community-based maternity posts offering childbirth and health services for pregnant women.
 注意:
 1. Posyandus 是以社区为基础的综合服务站, 专门负责改善母亲和幼儿的营养护理, 特别关注解决儿童营养不良问题和减少发育迟缓问题。
 2. Polindes 是以社区为基础的服务站, 提供包括产期和分娩在内的一般医疗服务

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Supply chain overview

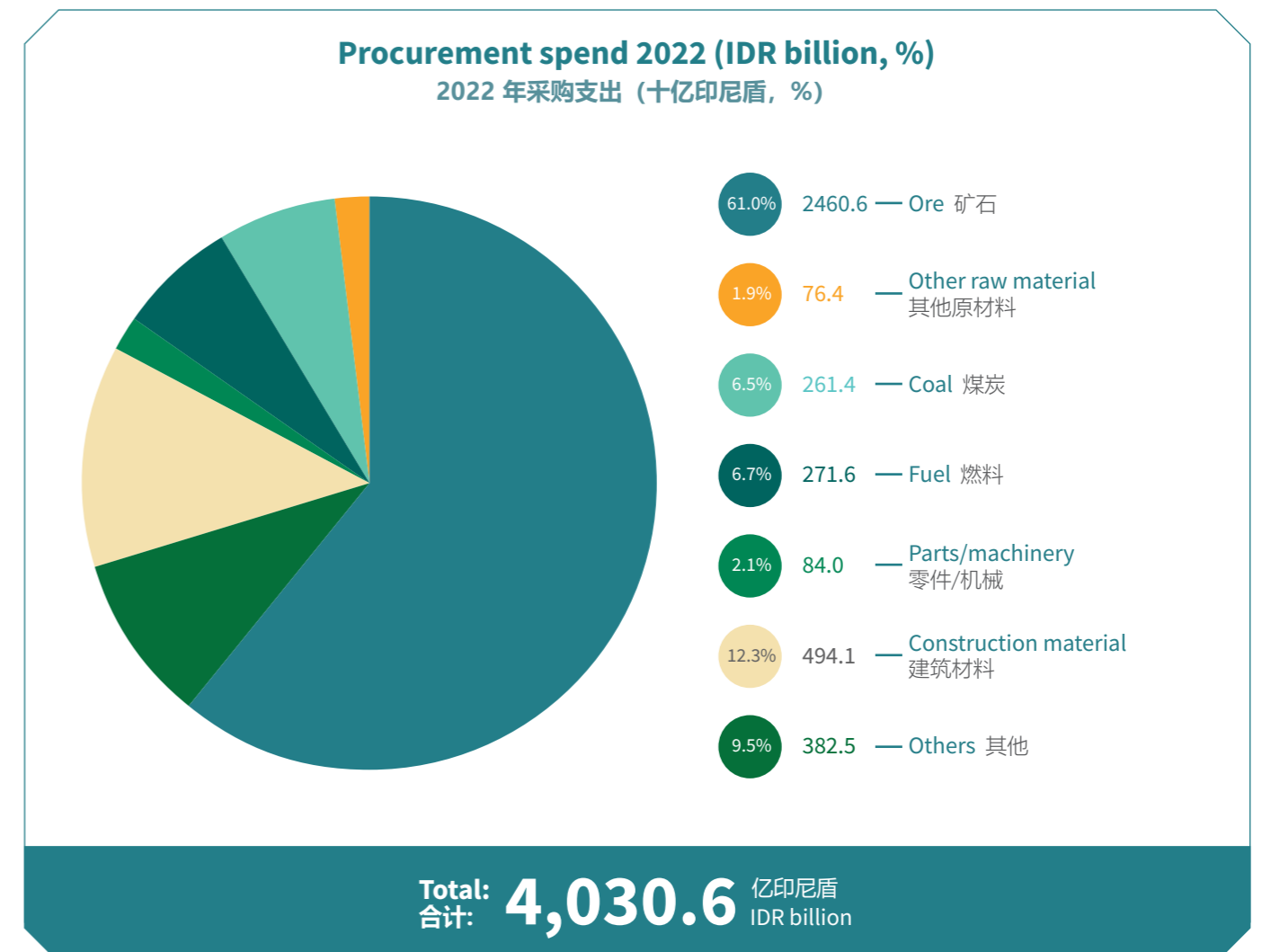
To effectively manage our operations, we source from a broad range of local and international suppliers. The primary raw material for producing MHP is limonite and some saprolite, which we source from two of Harita Nickel Group's mining businesses in North Maluku: Trimegah Bangun Persada (TBP) and Gane Permai Sentosa (GPS). Together, they supplied 6.56 million wet metric tons (WMT) of ore in 2022 – an over eightfold increase from the 0.77 million WMT in 2021. All ore sourced comprised 61% of our total procurement spend in 2022.

The remaining procurement budget was spent on other raw materials, such as quicklime and parts and materials for our machinery, power plants, and facility construction from outside of North Maluku.

供应链概述

为了有效管理自身运营, 我们从广泛的当地和国际供应商那里采购。生产 MHP 的主要原材料是褐铁矿和一些腐泥土, 我们从 Harita Nickel 集团在北马鲁古的两个采矿企业中采购: Trimegah Bangun Persada (TBP) 和 Gane Permai Sentosa (GPS)。这两家公司在 2022 年共供应了 656 万湿公吨 (WMT) 矿石, 比 2021 年的 77 万湿公吨猛增了八倍多。所有采购的矿石占 2022 年采购总支出的 61%。

其余的采购预算用于其他原材料, 如生石灰以及北马鲁古以外的机械、发电厂和设施建设所需的零部件和材料。



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Prioritizing local suppliers where possible

As a new business in the region, we mainly source outside of North Maluku from suppliers that can provide the materials we need in line with our requirements. In 2022, of the 169 suppliers we sourced, 81% were suppliers from other parts of Indonesia or overseas, while only 19 (11%) were local North Maluku suppliers. However, we also recognize the role local suppliers can play, and we aim to prioritize sourcing from them wherever available. Our focus will be to develop capacity-building programs to increase the number of local suppliers, subsequently generating jobs and boosting the local economy. Since 2020, we have expanded our local suppliers from nine to 19 in 2022 and doubled our local procurement spending: IDR 1.57 billion in 2022 compared to IDR 757 million in 2020.

尽可能优先考虑当地供应商

作为该地区的一家新企业，我们主要从北马鲁古以外的供应商那里采购，这些供应商可以根据我们的要求提供所需的材料。2022年，在我们采购的169家供应商中，81%是来自印度尼西亚其他地区或海外的供应商，而只有19家(11%)是北马鲁古当地供应商。然而，我们也认识到当地供应商可以发挥的作用，我们的目标是同等条件下优先从他们那里采购。我们的重点是制定能力培养计划，以增加当地供应商的数量，从而创造就业机会并促进当地经济发展。自2020年以来，我们已将当地供应商从9家增加到了2022年的19家，并将当地采购支出增加了一倍：2022年的当地采购支出为15.7亿印尼盾，而2020年为7.57亿印尼盾。

Local vs. non local suppliers 2020–2022 (no., %) 2020—2022年当地与非当地供应商 (数量, %)



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Supplier assessments

Before awarding any contract, we assess the qualifications of all potential suppliers and vendors, analyze potential risks, and perform rigorous checks against our requirements. These are outlined in our vendor and supplier selection policies.

Maintaining good communication with our suppliers is vital to building enduring partnerships. To ensure this, we have assigned dedicated points of contact for each supplier so that we can address their concerns and provide regular updates.

We also conduct regular supplier assessments and surveys to gather feedback and identify areas for improvement on quality, cost, and other contractual services. Our grievance mechanism is open to all suppliers, vendors, and contractors, and we also use this platform to address any external concerns raised against our suppliers.

In 2023, we developed and launched a [Responsible Sourcing Policy](#). This will guide the development of ESG assessments for our suppliers, vendors, and contractors and support the company in identifying and mitigating environmental and social risks within our supply chains. To achieve this, we will prioritize engaging with our suppliers and communicating our upcoming sustainability policy.

供应商评估

在授予任何合同之前，我们都会评估所有潜在供应商和供应商的资质，分析潜在风险，并根据我们的要求进行严格检查。这些在我们的供应商和提供商甄选政策中进行了概述。

与供应商保持良好的沟通对于建立持久的合作伙伴关系至关重要。为了确保这一点，我们为每个供应商指定了专门的联络点，以便解决他们的问题并定期提供最新信息。

我们还会定期进行供应商评估和调查，以收集反馈意见，确定在质量、成本和其他合同服务方面有待改进的方面。我们的申诉机制向所有供应商、供货商和承包商开放，我们也利用这一平台来解决任何针对供应商的外部关切。

2023年，我们制定并推出了[负责任采购政策](#)。这将指导我们对供应商、销售商和承包商进行ESG评估，并支持公司识别和降低供应链中的环境和社会风险。为了实现这一目标，我们将优先与供应商接触，并传达我们即将出台的可持续发展政策。



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Base data

基本数据

Category/Indicator 类别/指标	UoM 计量单位	FY 2022 2022 财年	FY 2021 2021 财年	FY 2020 2020 财年
Financial performance and environmental investments 财务业绩和环境投资				
Revenue 收入	USD million 百万美元	1,027.07	311.50	0.00
Employee wages and benefits 员工工资和福利	USD million 百万美元	51.14	20.89	4.15
Payments to local government 支付给地方政府的款项	USD million 百万美元	2.47	0.94	0.03
Payments to central government 支付给中央政府的款项 意	USD million 百万美元	11.65	6.23	2.88
Environmental investments 环境投资	IDR million 百万印尼盾	46,186.11	39,337.82	0.00

Category/Indicator 类别/指标	UoM 计量单位	FY 2022 2022 财年	FY 2021 2021 财年	FY 2020 2020 财年
New hires 新聘员工				
Male 男性	no.	3,005	3,326	834
Female 女性	no.	192	171	60
Under 30 years old 30 岁以下	no.	2,190	2,198	428
30–50 years old 30–50 岁	no.	983	1,215	405
Over 50 years old 50 岁以上	no.	24	84	61
Local 当地	no.	1,274	1,824	344
Non-local 非当地	no.	1,667	1,250	320
Foreigner 外国人	no.	256	423	230
Turnover rates by age group 按年龄组列出的员工流动率				
Under 30 years old 30 岁以下	%	8.05%	7.00%	6.56%
30–50 years old 30–50 岁	%	7.44%	3.96%	3.56%
Over 50 years old 50 岁以上	%	3.73%	4.88%	28.40%

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Category/Indicator 类别/指标	UoM 计量单位	FY 2022 2022 财年	FY 2021 2021 财年	FY 2020 2020 财年
Parental leave 育儿假				
Employees entitled to parental leave 有权享受育儿假的员工	no.	1615	1050	464
Employees took parental leave 休育儿假的员工	no.	28	25	23
Employees returned to work after parental leave ended 育儿假结束后重返工作岗位的员工	no.	28	25	23
Employees still employed 12 months after their return to work from parental leave 休完育儿假返回工作岗位 12 个月后仍在工作的员工	no.	16	12	6

Category/Indicator 类别/指标	UoM 计量单位	FY 2022 2022 财年	FY 2021 2021 财年	FY 2020 2020 财年
Occupational health and safety 职业健康与安全				
Total working hours (employees) 总工作时间 (员工)	no.	18,248,832	7,138,680	5,490,813
Total working hours (contractors) 总工作时间 (承包商)	no.	14,635,596	10,684,368	8,886,336
Near miss cases (employees) 未遂事件案例 (员工)	no.	16	20	13
Near miss cases (contractors) 未遂事件案例 (承包商)	no.	13	9	14
Incidence of property damage by employees 员工造成财产损失的发生率	no.	142	71	40
Incidence of property damage by contractors 承包商造成财产损失的发生率	no.	36	16	6
Crude morbidity rate* 粗略发病率	%	0.26	0.17	0.10

Note: calculated as the number of cases of disease/illness by the number of employees
注意: 按员工数量计算的疾病/患病案例数

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Instances of wastewater monitoring exceeding limits 2021–2022

2021—2022 年废水监测超标实例

	pH			TSS			Cobalt 钴			Nickel 镍		
	Limit 限值 (mg/L)	2022	2021	Limit 限值 (mg/L)	2022	2021	Limit 限值 (mg/L)	2022	2021	Limit 限值 (mg/L)	2022	2021
Discharge point 1 排放点 1	6–9	0	0	100	0	0	0.4	0	0	0.5	0	0
Discharge point 2 排放点 2	6–9	0	0	100	0	0	0.4	0	0	0.5	0	0
Discharge point 3 排放点 3	6–9	0	0	200	0	0	0.4	0	0	0.5	0	0
Groundwater-06 地下水-06	6.5–10.5	0	0				0.008	0	0	0.096	0	0
Groundwater-07 地下水-07	6.5–10.5	0	0				0.008	0	0	0.096	0	0
Groundwater-08 地下水-08	6.5–10.5	1	0				0.008	1	0	0.096	0	0
Collection pond 收集池	6–9	0	0	200	0	1	0.4	0	0	0.2	0	0

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GRI Content Index

The Global Reporting Initiative (GRI) is a widely adopted multi-stakeholder standard for sustainability reporting, providing guidance on determining report content and indicators. It has been designed to enhance the global comparability and quality of information on environmental and social impacts, thereby enabling greater transparency and accountability of organizations. Our 2022 Sustainability Update Report has been prepared in accordance with the 2021 GRI Standards. Our GRI Content Index references the following: [HPL ESG Report 2021](#), [PT TBP Tbk SR2022](#), [Lygend Resources ESG Report 2022](#), [Lygend Resources Annual Report 2022](#), [PT HPL website](#), and [Harita Nickel's website](#).

GRI 内容索引

全球报告倡议 (GRI) 是一个被多利益相关方广泛采用的可持续发展报告标准, 为确定报告内容和指标提供指导。它旨在提高环境和社会影响信息的全球可比性和质量, 从而提高各组织的透明度和问责制。我们的 2022 年可持续发展更新报告是根据 2021 年 GRI 标准编制的。我们的 GRI 内容索引参考了以下内容: [HPL 2021 年 ESG 报告](#)、[PT TBP Tbk SR2022](#)、[Lygend Resources 2022 年 ESG 报告](#)、[Lygend Resources 2022 年年度报告](#)、[PT HPL 网站](#)和 [Harita Nickel 网站](#)。

Statement of use 使用声明	PT PT Halmahera Persada Lygend (HPL) has reported in accordance with the GRI Standards for the period of 1 January 2022 to 31 December 2022 PT PT Halmahera Persada Lygend (HPL) 已根据 GRI 标准报告了 2022 年 1 月 1 日至 2022 年 12 月 31 日期间的情况。
GRI 1 used 已使用 GRI 1	GRI 1: Foundation 2021 GRI 1: 基础 2021

GRI STANDARD GRI 标准	DISCLOSURE 披露	LOCATION 位置
GRI 2: General Disclosures 2021 GRI 2: 2021 年一般披露	2-1 Organizational details 组织详情	About PT HPL, p. 5 关于 PT HPL, 第 5 页
	2-2 Entities included in the organization's sustainability reporting 纳入组织可持续发展报告的实体	PT Halmahera Persada Lygend PT Halmahera Persada Lygend
	2-3 Reporting period, frequency and contact point 报告期、频率和联络点	About this report, p. 3 关于本报告, 第 3 页 Contact, back cover 联系方式, 背面
	2-4 Restatements of information 信息重述	Provided throughout where relevant 在相关的地方提供
	2-5 External assurance 外部保证	About this report, p. 3 关于本报告, 第 3 页
	2-6 Activities, value chain and other business relationships 活动、价值链和其他业务关系	About PT HPL, p. 5 关于 PT HPL, 第 5 页 Supply chain overview, p. 47 供应商概述, 第 47 页
	2-7 Employees 员工	Our workforce, p. 38 我们的员工队伍, 第 38 页
	2-8 Workers who are not employees 非员工的雇员	Our workforce, p. 38 我们的员工队伍, 第 38 页
	2-9 Governance structure and composition 治理结构和组成	Good governance, p. 17 良好治理, 第 17 页 PT TBP Tbk SR2022 , p. 71 PT TBP Tbk SR2022, 第 71 页 Lygend Resources ESG Report 2022 , p. 11–12 Lygend Resources 2022 年年度报告, 第 11-12 页

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GRI STANDARD GRI 标准	DISCLOSURE 披露	LOCATION 位置
GRI 2: General Disclosures 2021 GRI 2: 2021 年一般披露	2-11 Chair of the highest governance body 最高治理机构主席	Good governance, p. 17 良好治理, 第 17 页 PT TBP Tbk SR2022 , p. 71 PT TBP Tbk SR2022, 第 71 页
	2-12 Role of the highest governance body in overseeing the management of impacts 最高治理机构在监督影响管理方面的作用	Good governance, p. 17 良好治理, 第 17 页 PT TBP Tbk SR2022 , p. 71 PT TBP Tbk SR2022, 第 71 页
	2-13 Delegation of responsibility for managing impacts 管理影响的责任授权	Good governance, p. 17 良好治理, 第 17 页 PT TBP Tbk SR2022 , p. 71 PT TBP Tbk SR2022, 第 71 页
	2-14 Role of the highest governance body in sustainability reporting 最高治理机构在可持续发展报告中的作用	Good governance, p. 17 良好治理, 第 17 页
	2-15 Conflicts of interest 利益冲突	Code of Ethics and Conduct 道德及行为准则 PT TBP Tbk Annual Report 2022 , p. 97 PT TBP Tbk 2022 年年度报告, 第 97 页
	2-16 Communication of critical concerns 关键问题的沟通	Good governance, p. 17 良好治理, 第 17 页 Whistleblowing and grievances, p. 18 举报和申诉, 第 18 页 PT TBP Tbk SR2022 , p. 71 PT TBP Tbk SR2022, 第 71 页
	2-17 Collective knowledge of the highest governance body 最高治理机构的集体知识	PT TBP Tbk SR2022 , p. 54 PT TBP Tbk SR2022, 第 54 页
	2-18 Evaluation of the performance of the highest governance body 对最高治理机构绩效的评价	Good governance, p. 17 良好治理, 第 17 页 PT TBP Tbk SR2022 , p. 71 PT TBP Tbk SR2022, 第 71 页
	2-19 Remuneration policies 薪金政策	PT TBP Tbk Annual Report 2022 , p. 133 PT TBP Tbk 2022 年年度报告, 第 133 页

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GRI STANDARD GRI 标准	DISCLOSURE 披露	LOCATION 位置
GRI 2: General Disclosures 2021 下面这段内容无实际意义	2-20 Process to determine remuneration 薪金确定流程	PT TBP Tbk Annual Report 2022 , p. 133 PT TBP Tbk 2022 年年度报告, 第 133 页
	2-21 Annual total compensation ratio 年度总薪酬比例	No information available. 没有信息可提供
	2-22 Statement on sustainable development strategy 下面这段内容无实际意义	Sustainability framework and policies, p. 11 可持续发展框架和政策, 第 11 页 PT TBP Tbk SR2022 , p. 52 PT TBP Tbk SR2022, 第 52 页
	2-23 Policy commitments 政策承诺	Sustainability Policy 可持续发展政策 Sustainability framework and policies, p. 11 可持续发展框架和政策, 第 11 页
	2-24 Embedding policy commitments 融入政策承诺	Sustainability Policy 可持续发展政策 Sustainability framework and policies, p. 11 可持续发展框架和政策, 第 11 页
	2-25 Processes to remediate negative impacts 补救负面影响的流程	Whistleblowing and grievances, p. 18 举报和申诉, 第 18 页 Whistleblowing system 举报系统 Public grievances 公众申诉 Employee grievances 员工申诉
	2-26 Mechanisms for seeking advice and raising concerns 征求意见和提出问题的机制	Whistleblowing and grievances, p. 18 举报和申诉, 第 18 页 Whistleblowing system 举报系统 Public grievances 公众申诉 Employee grievances 员工申诉
	2-27 Compliance with laws and regulations 遵守法律法规	Managing environmental impacts, p. 20-p. 36 管理环境影响, 第 20 页 - 第 36 页
	2-28 Membership associations 会员协会	Stakeholder engagement, p. 15 利益相关方参与, 第 15 页
	2-29 Approach to stakeholder engagement 利益相关方参与方法	Stakeholder engagement, p. 15 利益相关方参与, 第 15 页 PT HPL ESG Report 2021 , p. 106-107 PT HPL 2021 年 ESG 报告, 第 106-107 页
	2-30 Collective bargaining agreements 集体谈判协议	Wages, benefits, and working hours, p. 39 工资、福利和工作时间, 第 39 页

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GRI STANDARD GRI 标准	DISCLOSURE 披露	LOCATION 位置
GRI 3: Material Topics 2021 GRI 3: 2021 年重要主题	3-1 Process to determine material topics 确定重要主题的流程	Materiality, p. 14 重要性, 第 14 页 PT HPL ESG Report 2021 , p. 134 PT HPL 2021 年 ESG 报告, 第 134 页
	3-2 List of material topics 重要主题列表	Materiality, p. 14 重要性, 第 14 页 PT HPL ESG Report 2021 , p. 134 PT HPL 2021 年 ESG 报告, 第 134 页
	3-3 Management of material topics 重要主题的管理	Provided throughout the report. 在整个报告中提供。
GRI 201: Economic Performance 2016 GRI 201: 2016 年经济业绩	201 Direct economic value generated and distributed 产生和分配的直接经济价值	About HPL, p. 5 关于 HPL, 第 5 页 Base data, p. 51 基本数据, 第 51 页
GRI 202: Market Presence 2016 GRI 202: 2016 年市场占有率	202-1 Ratios of standard entry level wage by gender compared to local minimum wage 按性别列出的初级职等标准工资与当地最低工资的比率	Wages, benefits, and working hours, p. 39 工资、福利和 Working 时间, 第 XX 页
	202-2 Proportion of senior management hired from the local community 从当地社区聘用的高级管理人员比例	Employee diversity, p. 40 员工多样性, 第 40 页
GRI 203: Indirect Economic Impacts 2016 GRI 203: 2016 年间接经济影响	203-1 Infrastructure investments and services supported 支持基础设施投资和服务	Harita Nickel community support, p. 44 Harita Nickel 社区支持, 第 44 页 PT TBP Tbk SR2022 , p. 151-162 PT TBP Tbk SR2022, 第 151-162 页
	203-2 Significant indirect economic impacts 重大间接经济影响	Harita Nickel community support, p. 44 Harita Nickel 社区支持, 第 44 页 PT TBP Tbk SR2022 , p. 151-162 PT TBP Tbk SR2022, 第 151-162 页
GRI 204: Procurement Practices 2016 GRI 204: 2016 年采购实践	204-1 Proportion of spending on local suppliers 本地供应商支出比例	Supply chain overview, p. 47 供应商概述, 第 47 页
GRI 302: Energy 2016 GRI 302: 2016 能源	302-1 Energy consumption within the organization 组织内部能耗	Energy consumption, p. 22 能耗, 第 22 页
	302-3 Energy intensity 能源强度	Energy consumption, p. 22 能耗, 第 22 页
	302-4 Reduction of energy consumption 能耗减少	Energy consumption, p. 22 能耗, 第 22 页
GRI 303: Water and Effluents 2018 GRI 303: 水资源和废水 2018	303-1 Interactions with water as a shared resource 与作为共享资源的水资源的相互作用	Water management, p. 28 水资源管理, 第 28 页
	303-2 Management of water discharge-related impacts 水排放相关影响的管理	Safeguarding water sources, p. 29 保护水源, 第 29 页
	303-3 Water withdrawal 取水	Water management, p. 28 水资源管理, 第 28 页
	303-4 Water discharge 水排放	Safeguarding water sources, p. 29 保护水源, 第 29 页 Data on total water discharge not available 无法提供总排水量数据
	303-5 Water usage 用水量	Data on total water usage not available 无法提供总用水量数据

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GRI STANDARD GRI 标准	DISCLOSURE 披露	LOCATION 位置
GRI 305: Emissions 2016 GRI 305: 2016 排放	305-1 Direct (Scope 1) GHG emissions 直接 (范围 1) GHG 排放	Understanding our carbon footprint, p. 24 了解我们的碳足迹, 第 24 页
	305-2 Energy indirect (Scope 2) GHG emissions 能源间接 (范围 2) GHG 排放	Understanding our carbon footprint, p. 24 了解我们的碳足迹, 第 24 页
	305-3 Other indirect (Scope 3) GHG emissions 其他间接 (范围 3) GHG 排放	Understanding our carbon footprint, p. 24 了解我们的碳足迹, 第 24 页
	305-4 GHG emissions intensity GHG 排放强度	Understanding our carbon footprint, p. 24 了解我们的碳足迹, 第 24 页
	305-5 Reduction of GHG emissions GHG 排放减少	Understanding our carbon footprint, p. 24 了解我们的碳足迹, 第 24 页
	305-7 Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions 氮氧化物 (NO _x)、硫氧化物 (SO _x) 和其他显著空气排放	Managing air quality, p. 25 管理空气质量, 第 25 页
	GRI 306: Waste 2020 GRI 306: 2020 年废弃物	306-1 Waste generation and significant waste-related impacts 废弃物产生和废弃物相关重大影响
306-2 Management of significant waste-related impacts 重要废弃物相关影响的管理		Waste management, p. 33 废弃物管理, 第 33 页
306-3 Waste generated 产生的废弃物		Waste management, p. 33 废弃物管理, 第 33 页
306-4 Waste diverted from disposal 从处置中转移的废弃物		Waste management, p. 33 废弃物管理, 第 33 页
306-5 Waste directed to disposal 直接处置的废弃物		Waste management, p. 33 废弃物管理, 第 33 页
GRI 401: Employment 2016 GRI 401: 2016 雇佣	401-1 New employee hires and employee turnover 新员工雇佣和员工流动率	Recruitment and talent development, p. 42 招聘和人才培养, 第 42 页 Base data, p. 51 基本数据, 第 51 页
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees 为全职员工提供而未向临时或兼职员工提供的福利	Wages, benefits, and working hours, p. 39 工资、福利和 Working 时间, 第 39 页
GRI 403: Occupational Health and Safety 2018 GRI 403: 2018 年职业健康与安全	401-3 Parental leave 育儿假	Wages, benefits, and working hours, p. 39 工资、福利和 Working 时间, 第 39 页 Base data, p. 51 基本数据, 第 51 页
	403-1 Occupational health and safety management system 职业健康与安全管理系统	Health and safety, p. 43 健康与安全, 第 43 页 PT HPL ESG Report 2021 , p. 108 PT HPL 2021 年 ESG 报告, 第 108 页
	403-2 Hazard identification, risk assessment, and incident investigation 危害识别、风险评估和事故调查	Health and safety, p. 43 健康与安全, 第 43 页 PT HPL ESG Report 2021 , p. 110-111 PT HPL 2021 年 ESG 报告, 第 110-111 页

Appendices | 附录

GRI STANDARD GRI 标准	DISCLOSURE 披露	LOCATION 位置
GRI 403: Occupational Health and Safety 2018 GRI 403: 2018 年职业健康与安全	403-4 Worker participation, consultation, and communication on occupational health and safety 员工对职业健康与安全的参与、咨询和沟通	PT HPL ESG Report 2021 , p. 112 PT HPL 2021 年 ESG 报告, 第 112 页
	403-5 Worker training on occupational health and safety 有关职业健康与安全的员工培训	Health and safety, p. 43 健康与安全, 第 43 页
	403-8 Workers covered by an occupational health and safety management system 职业健康与安全管理系统覆盖的员工	Health and safety, p. 43 健康与安全, 第 43 页
	403-9 Work-related injuries 工伤	Health and safety, p. 43 健康与安全, 第 43 页 Base data, p. 51 基本数据, 第 51 页
	403-10 Work-related ill health 职业病健康	Base data, p. 51 基本数据, 第 51 页
GRI 404: Training and Education 2016 GRI 404: 2016 年培训和教育	404-1 Average hours of training per year per employee 每位员工每年的平均培训时间	Recruitment and talent development, p. 42 招聘和人才培养, 第 42 页
	404-2 Programs for upgrading employee skills and transition assistance programs 员工技能升级项目和过渡帮助项目	Recruitment and talent development, p. 42 招聘和人才培养, 第 42 页
	404-3 Percentage of employees receiving regular performance and career development reviews 接受定期绩效和职业发展评审的员工百分比	Data not available. 无法提供数据
GRI 405: Diversity and Equal Opportunity 2016 GRI 405: 2016 年多样性和平等机会	405-1 Diversity of governance bodies and employees 治理机构和员工的多样性	PT TBP Tbk SR2022 , p. 71 PT TBP Tbk SR2022, 第 71 页
	405-2 Ratio of basic salary and remuneration of women to men 女性与男性的基本工资和薪金比率	Wages, benefits, and working hours, p. 39 工资、福利和工作时间, 第 39 页
GRI 406: Non-discrimination 2016 GRI 406: 2016 年禁止歧视	406-1 Incidents of discrimination and corrective actions taken 歧视事件和采取的纠正措施	There were no instances of discrimination reported in 2022 2022 年没有歧视事件报告
413: Local Communities 2016 413 年: 2016 年当地社区	413-1 Operations with local community engagement, impact assessments, and development programs 具有当地社区参与、影响评估和发展计划的运营	Harita Nickel community support, p. 44 Harita Nickel 社区支持, 第 44 页 PT TBP Tbk SR2022 , p. 151-162 PT TBP Tbk SR2022, 第 151-162 页
	413-2 Operations with significant actual and potential negative impacts on local communities 对当地社区产生重大实际和潜在负面影响的运营	Harita Nickel community support, p. 44 Harita Nickel 社区支持, 第 44 页 PT TBP Tbk SR2022 , p. 151-162 PT TBP Tbk SR2022, 第 151-162 页

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