the metals company

Impact Report 2024

We're building a carefully managed metal commons that will be used, recovered, and reused again and again.

This is an interim report as we transition to an updated business strategy – in April of 2025, TMC announced its decision to apply for an exploration and commercial recovery permit under the existing U.S. Deep Seabed Hard Mineral Resources Act (DSHMRA). We plan to publish a more comprehensive report in 2026.

WEB IMPACT REPORT 2024

PREVIOUS IMPACT REPORTS

TMC WEBSITE

Contents

Forward-looking Statements

The Impact Report contains “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, that relate to future events, TMC the metals company Inc.’s (the “Company”) future operations or financial performance, or the Company’s plans, strategies and prospects. These statements involve risks, uncertainties and assumptions and are based on the current estimates and assumptions of the management of the Company as of the date of this report and are subject to uncertainty and changes. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Important factors that could cause actual results to differ materially from those indicated by such forward-looking statements include, among others, those set forth under the heading “Risk Factors” contained in the Company’s Form 10-K for the year ended December 31, 2024, which was filed with the Securities and Exchange Commission on March 27, 2025, as well as any updates to those risk factors filed from time to time in our periodic and current reports.

2024 Sustainability Highlights

ENVIRONMENT

Data collection and sharing for the NORI-D Project offshore environmental impact assessment (EIA)

We spent 34 research days at the NORI-D site in 2024 with world-leading scientists evaluating seafloor ecosystem function after our 2022 nodule-collection system test.

Peer-reviewed research

Data collected from the NORI-D site has served as the basis for two peer-reviewed papers published in 2024.

Publication of environmental data

TMC's subsidiary, NORI, submitted its largest deep-sea environmental data set to date – 32,617 benthic and 42,036 pelagic biological occurrences, over 12,000 seafloor images, and extensive time-series data from three years of monitoring via oceanographic moorings.

SOCIAL

Engaging with stakeholders globally

NORI hosted a webinar to provide an update on NORI's Cultural Heritage Impact Assessment (CHIA) for the NORI-D project, including progress on baseline studies. It also conducted a series of stakeholder engagements and consultations in Nauru and Tonga to support the assessment.

Our contribution to community development

Our subsidiaries NORI and TOML awarded 68 grants for community-led initiatives in Nauru and Tonga focused on ocean health and the environment, women empowerment, youth and healthy living, sanitation and water, education, and agriculture and food security. In addition, a total of 25 scholarships and training opportunities were sponsored.

GOVERNANCE

ESG policy commitments

We published five corporate policies outlining our commitments across key areas, including environment, climate change, health and safety, human rights, and responsible sourcing.

Industry disclosure leadership

The ESG Handbook for Marine Minerals – co-developed by TMC through an international consortium – was published, promoting standardized, transparent ESG reporting for deep-sea projects aligned with global frameworks.

New sustainability leadership in the boardroom

TMC welcomed prominent sustainability strategist Brendan May to its board of directors. He was appointed the Chairperson of TMC's Sustainability & Innovation Committee.

Letter From the CEO

Dear Stakeholders,

The past twelve months have been all about compiling, analyzing, and sharing the vast amounts of scientific data we've gathered over more than a decade – laying the foundation for a science-based case for responsible nodule collection as part of our Environmental Impact Statement.

NORI was already the single largest provider of deep-sea data pertaining to the CCZ for a host of open-source databases and, in 2024, we strengthened our advantage and society's understanding of the deep-sea through a major new submission to the ISA. Our broader dataset, the largest of its kind anywhere in the deep ocean, gives us a high degree of confidence that the impacts of our proposed nodule collection technology will be minimal and manageable, and that we know enough to begin responsibly.

It was the same story onshore, where we proved our ability to process nodules at commercial-scale with our partners PAMCO in Japan, and to further refine these into materials suitable for battery metal and energy transition markets using our efficient flowsheet design, in collaboration with SGS Canada. All world firsts.

Our decision to pursue a new permitting pathway under the longstanding U.S. seabed mining code means we now have a robust, transparent, and enforceable pathway for operations to commence responsibly and in a timely manner. This decision was not taken lightly but was the result of growing concern that the International Seabed Authority would be unlikely to deliver timely and commercially viable regulations – without which private companies and their Developing Sponsoring States would be unable to participate in this new industry.

While our path now leads through Washington, D.C. rather than Kingston, Jamaica, rest assured this is no shortcut. We look forward to supporting the U.S. National Oceanic and Atmospheric Administration in preparing a NEPA-compliant Environmental Impact Statement, grounded in rigorous science and technological innovation.

Several key milestones from the past year are worth highlighting:

World's most comprehensive deep-sea dataset, shared with the world: In 2024, NORI made its second and largest-ever submission of environmental data to the International Seabed Authority's (ISA) DeepData platform. This dataset, covering findings from our NORI-D exploration area up to January 2022, includes an unprecedented 32,617 benthic and 42,036 pelagic biological occurrences, world-first MOCNESS net samples of micronekton at 4,000-meter depths, over 12,000 seafloor images, and three years of continuous oceanographic monitoring data from moorings. NORI's dataset now exceeds a petabyte in size – larger than all other contractors combined – and we remain committed to sharing our findings with the global scientific community to advance understanding of the deep ocean.

Completion of our Environmental Impact Assessment: With 22 offshore environmental research campaigns completed, our team has been working day and night to work through the reports submitted by our academic, governmental and commercial research partners and analyze the wealth of collected data. The findings show that the impacts of collecting nodules using technology we tested with our offshore partner Allseas are minimal and manageable, and that we know enough to begin commercial operations.

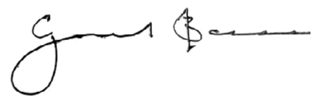
Major breakthroughs in onshore processing: 2024 was a landmark year onshore, where we successfully demonstrated the commercial potential of deep-seafloor nodules in battery metal supply chains. In collaboration with SGS and other industry leaders, TMC successfully produced the world's first nickel sulfate and cobalt sulfate from nodules, confirming their suitability for battery markets. Meanwhile, in a world-first commercial-scale processing trial, our partners at PAMCO processed a 2,000-tonne sample of nodules collected during our 2022 test mining at their RKEF facility in Hachinohe, Japan. The trial, which yielded approximately 500 tonnes of high-temperature calcine in preparation for smelting, generated critical operational data to support the feasibility study and expected definitive processing agreements.

NORI-D Social Impact Assessment and Cultural Heritage Impact Assessment: Since 2022, NORI has been conducting the first Social Impact Assessment (SIA) for a deep-sea minerals project in international waters. The SIA covers a broad range of social impacts and is complemented by a Cultural Heritage Impact Assessment (CHIA). To support this, NORI engaged SEARCH Inc. as independent CHIA consultants. In 2024, NORI and SEARCH Inc. visited Nauru and Tonga to consult local communities and stakeholders on potential impacts to tangible (e.g., shipwrecks, downed planes) and intangible (e.g., traditions, skills, knowledge) heritage. A preliminary update on baseline findings was shared globally via webinars for feedback. Insights from civil society, local leaders, and the public are being incorporated into the CHIA and will inform a Cultural Heritage Management Plan (CHMP) to ensure culturally appropriate and responsible project development.

Our team remains laser-focused on a science-backed case for responsible nodule collection. The demand for critical metals for energy, manufacturing and infrastructure is rising rapidly, and with a wealth of research and over a petabyte of environmental data now in hand, our approach offers a way to meet this need while minimizing the environmental and social footprint of conventional metal extraction on land.

I hope you enjoy reading more about our work over the past year and I look forward to sharing our continued progress on the exciting road ahead.

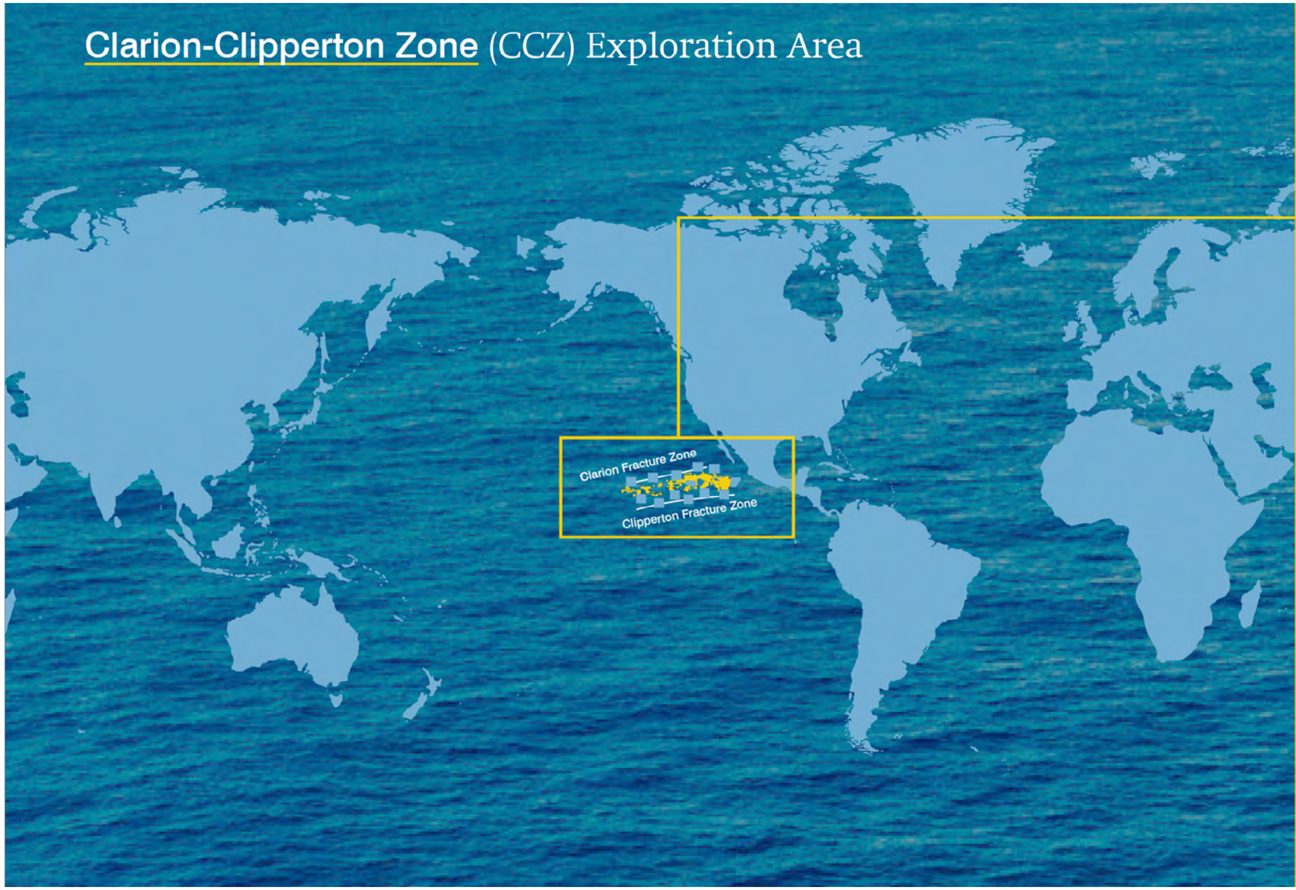
Gerard Barron



CEO & Chairman
The Metals Company

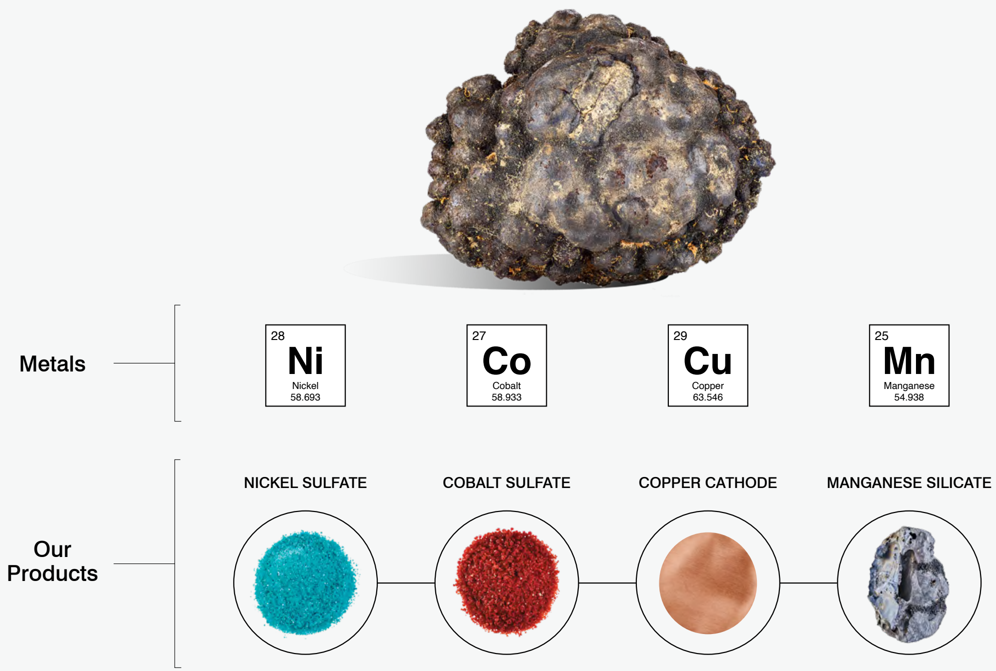
Who We Are

TMC The Metals Company Inc. (TMC) is a deep-sea minerals exploration company focused on the collection, processing and refining of polymetallic nodules found in the Clarion Clipperton Zone (CCZ), in the Pacific Ocean. Polymetallic nodules are discrete rocks that sit unattached onto the seafloor, occur in significant quantities in the CCZ, and have high concentrations of nickel, manganese, cobalt and copper in a single rock.



The Earth's oceans cover 361 million km² or 71% of our planet's surface. The nodule exploration area in East Pacific known as the CCZ covers 4.6 million km² or 1.3% of the global oceans. The seafloor in the CCZ is deep (3,500-6,500m) and relatively flat, characteristic of an abyssal plain. Abyssal plains and hills are the most common habitat on Earth, covering 70% of the ocean's floor.

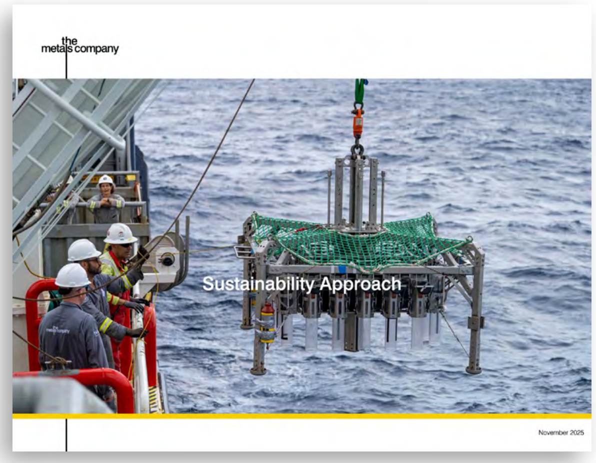
TMC was founded in 2011 as DeepGreen Metals. In 2021, Sustainable Opportunities Acquisition Corp. (SOAC) acquired DeepGreen and its business, and we became a public company (Nasdaq: TMC). TMC's wholly owned subsidiaries, Nauru Ocean Resources Inc. (NORI) and Tonga Offshore Mining Ltd. (TOML), are based in the Republic of Nauru and the Kingdom of Tonga, respectively. As an explorer of lower-impact energy transition metals we are on a dual mission: (1) supply metals for the global energy transition with the least possible negative impacts on the planet and people and (2) trace, recover and recycle the metals we supply to help create a metal commons that can be used in perpetuity.



Sustainability at TMC

Metal extraction comes with its own set of human and planetary costs, and while there are no perfect solutions, we see the collection of polymetallic nodules from the seafloor of the CCZ as an opportunity to provide an abundant, complementary supply of battery metals for the energy transition, defense and global development with the least social and environmental impact. In our sustainability approach, we share the thought processes and principles that will guide our decisions as we work towards realizing this vision.

We welcome a science-driven dialogue with a focus on solutions that consider the interconnectedness and complexities of planetary and social systems. You can contact us at impact@metals.co.



Nodules ESG Value Proposition

Nodules bring many inherent advantages compared with terrestrial ores. This resource and the decisions we have made to minimize project impacts provide a compelling ESG value proposition. Below we break it down into six advantages.

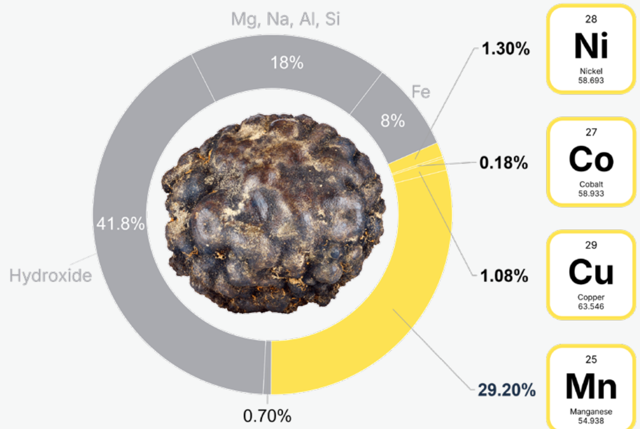
Here's how nodules deliver ESG advantages across six key dimensions.

01

Abundant, Polymetallic Resource

Seafloor polymetallic nodules found in the Clarion-Clipperton Zone (CCZ) contain rich concentrations of four metals – nickel, copper, cobalt, and manganese – all within a single rock. The demand for these metals continues to grow as they are needed for infrastructure, defense and the energy transition among other uses.

Dry Nodule Mass Composition Breakdown



Key Use Cases for Nickel, Cobalt, Copper and Manganese

- Electric vehicles and energy storage batteries
- Solar, wind, and nuclear energy generation technologies
- High-performance magnets for motors and generators
- Stainless steel, plating, and coating for industrial uses

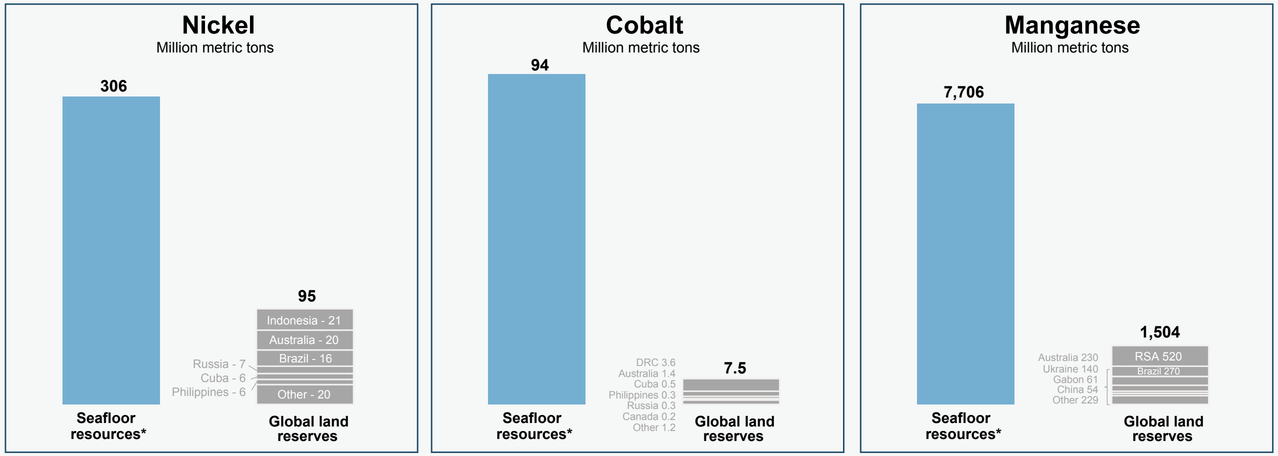
- Smartphones, laptops, and electric vehicle batteries
- High-strength superalloys for jet engines, gas turbines, cutting and drilling tools
- Chemical process catalysts for hydrogen and synthetic fuel production
- Radiotherapy for cancer treatment applications

- Grid and distributed energy electrification
- Data centers powering artificial intelligence (AI)
- Home appliances
- Building construction

- Structural steel production for renewable energy infrastructure
- Alloys for high-strength applications
- Iron production
- Fertilizers and animal feed

Extensive nodule fields in the CCZ represent the Earth's largest known deposit of nickel, cobalt, and manganese.[1] We see their collection as a promising pathway to responsibly deliver a new, abundant, and complementary source of critical metals with lower impact than existing terrestrial supply.

Most of the Earth's Nickel, Cobalt, and Manganese is Found on the Seafloor

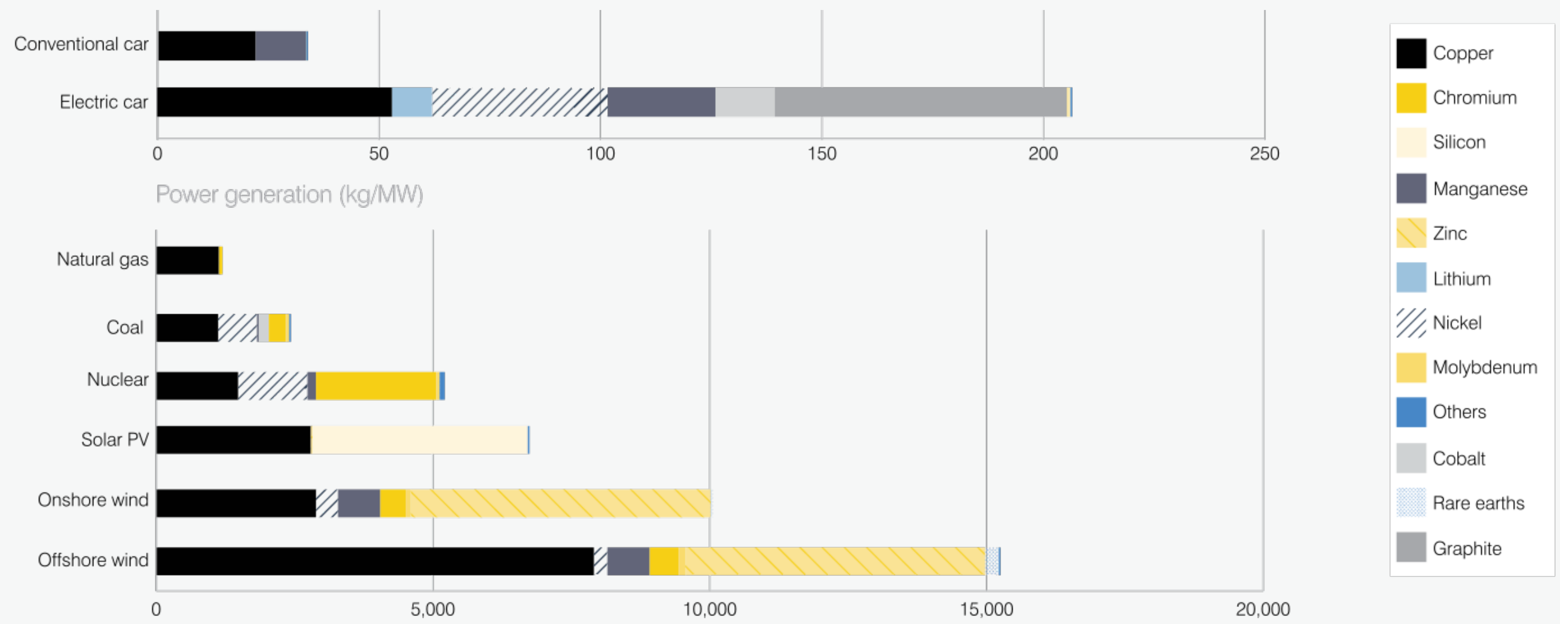


* Combined estimates for CCZ polymetallic nodules and Prime Crust Zone cobalt crusts. Sources: USGS 2021 commodity summaries for terrestrial resources; Hein et al., "Deep-ocean mineral deposits as a source of critical metals for high- and green-technology applications: Comparison with land-based resources", 2013.

Bridging the Supply Gap

The global energy transition, along with infrastructure development for a growing global population – projected to increase by an additional 2 billion people by 2050[2] – and its rising living standards require large quantities of metals. An offshore wind farm requires eight times more critical metals than a coal-fired plant,[3] while an electric car needs six times more than a conventional one.[4]

Minerals Used in Selected Clean Energy Technologies



Sources: IEA, "Minerals used in electric cars compared to conventional cars", 5 May 2021; IEA, "Minerals used in clean energy technologies compared to other power generation sources", 5 May 2021.

By 2040, demand is projected to grow 11.6 times for manganese, 7.5 times for nickel, 4.3 times for cobalt, and 3.1 times for copper.[5]

To contain climate change, more critical metals will need to be mined in the next 30 years than have been extracted in all of human history.[6]

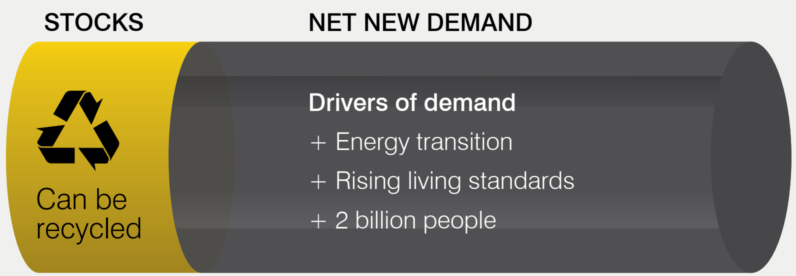
The deployment of energy transition technologies has already fueled considerable demand growth for critical minerals.[7] Between 2017 and 2024, lithium and cobalt production increased 3.5-fold and 2.4-fold, respectively, while nickel production grew 71%.[8]

Land production alone has many challenges to meet the surging demand for critical minerals. The IEA's Executive Director has warned: *"Today, the data shows a looming mismatch between the world's strengthened climate ambitions and the availability of critical minerals that are essential to realising those ambitions."* For critical metals such as lithium, nickel, cobalt, and copper, around 500 new mines on land would need to be brought online within the next 5-10 years to meet the necessary speed and scale of the energy transition alone.[9] However, with major mining projects taking an average of nearly 18 years to move from discovery to first production,[10] some argue that the critical minerals bottleneck has already rendered the goal of achieving net zero emissions by 2050 impossible.[11]

The polymetallic nature of CCZ nodules means that **a single nodule project could produce nickel, copper, cobalt and manganese – metals which would otherwise require three separate new mines on land, each with its own impacts.**

Secondary supply (e.g., from recycling) is expected to play a growing role in reducing pressure on primary supply and mitigating supply chain risks. However, even with secondary sources, demand is projected to outpace supply. The IEA's net zero emissions scenario projects that recycled copper, lithium, nickel, and cobalt from energy transition applications will meet only 10-30% of total demand by 2040.[12]

Global Metal Stocks and Future Demand



Given these looming supply constraints, leveraging the CCZ's nodule-based reserves as a new, abundant, and complementary source of critical battery-grade metals – alongside land-based supplies – offers a promising solution for rapidly bridging the supply gap.

DID YOU KNOW?

Cumulative renewable energy capacity nearly tripled between 2010 and 2024 and is expected to more than double again by 2030 compared to 2024 levels according to the IEA's Net Zero Emissions (NZE) scenario.[13] In 2024, solar and wind made up over 90% of added capacity globally, and renewables supplied 32% of global power generation.[14]

EV sales grew by 25% in 2024 compared to 2023, with roughly one in five new cars sold being electric.[15] Combustion vehicle sales appear to have already peaked and EVs are on track to account for one-third of new passenger vehicles sold in 2027.[16]

The average EV lithium-ion battery pack price has dropped over tenfold since 2010. However, due to factors such as increased demand and supply constraints, the share of cathode raw material costs – including lithium, nickel, cobalt, and manganese – has increased tenfold, accounting for one-quarter of the battery price in 2023.[17] Metals such as nickel, cobalt, and manganese are crucial to battery performance, longevity, and energy density.[18]

02

No Tailings, Near-Zero Waste

The low levels of deleterious elements in nodules allow us to utilize their entire mass and avoid producing tailings. This advantage has enabled us to develop a flowsheet that can process the whole nodule into usable products and by-products instead of waste. Our by-products include ammonium sulfate, which can be used as a fertilizer in agriculture; and the converter slag from the pyrometallurgical process is suitable as an aggregate for applications such as road construction, cement production, or filler material. We also recycle the relatively small residual stream from the refinery back into the smelting process, further increasing our metal recoveries (i.e., the percentage of metal extracted from the nodules).

How We Achieve Near-Zero Solid Waste

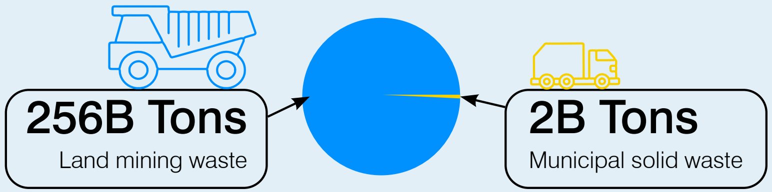
We start with nodules that have remarkably **low levels of harmful elements**

Dual pyro/hydro process allows for **residues to be recycled** to smelter

We select reagents that **produce products instead of waste**

DID YOU KNOW?

Mining is the world's largest source of waste. In 2023, it generated 270.9 billion tons of waste – 135 times more than all municipal solid waste produced globally.[19] Mining waste is projected to increase by nearly 40% by 2030, reaching 379.1 billion tons.[20]



Since 1915, 257 TSF failures have been recorded, releasing a total of ~250 million m3 of tailings, damaging up to ~5,000 km² – roughly half the size of Jamaica – causing an estimated 2,650 human fatalities, and impacting ~317,000 people through displacement, property damage, and risks to livelihoods and health. The severity and volume of TSF failures have increased since the year 2000, owing to increasing mine waste generation from the exploitation of larger, lower-grade deposits.[21] The most comprehensive survey of TSFs to date found that 10% of the 1,743 TFS analyzed pose or have posed stability risks in their history.[22]

In 2019, the Brumadinho tailings dam disaster released approximately 12 million cubic meters of mining waste and resulted in 272 deaths.

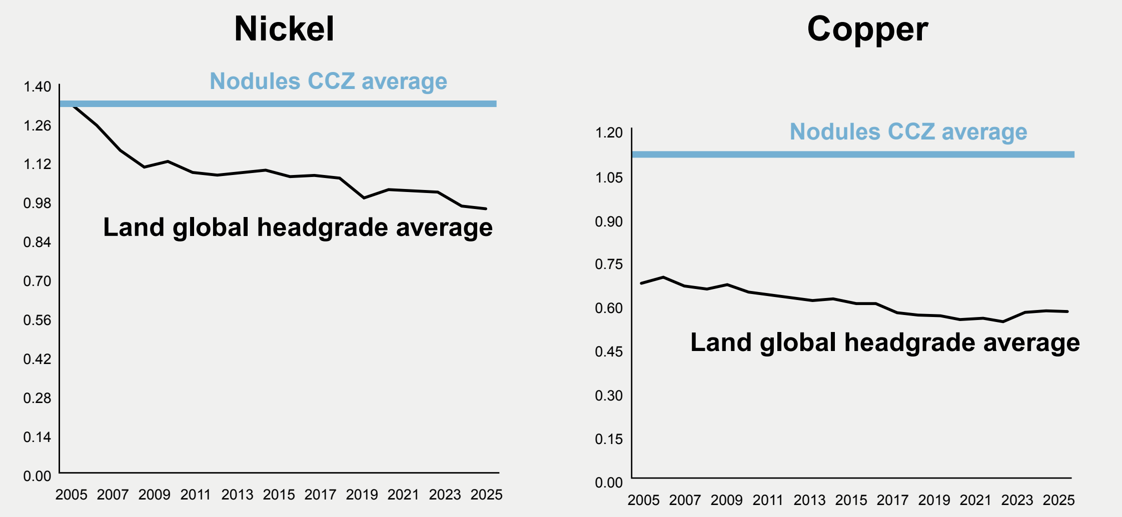
Eliminating Tailings and Enabling Near-Zero Solid Waste

Land-based mining typically generates large amounts of tailings[23] and waste – a growing challenge as ore grades decline. Since resource extraction targets the easy-to-access, high-grade resources first; today most known high-grade copper and nickel deposits have been depleted. Metal content per ton of mined ore has decreased over time. In 1900, one ton of ore yielded 30 kg of copper; and today, it can take up to 5 tons to produce the same amount.[24] As a result, more land, energy, and water are required, and more waste is generated per kilogram of metal produced.

For low-grade ores such as copper and nickel, over 98-99% of mined material typically becomes tailings or rock waste.[25] These materials often contain toxic elements – including sulfides, heavy metals, and chemical reagents – that can leach into water supplies, harm wildlife, and render land unusable without proper management.[26] Operators use various techniques to manage this waste, most commonly isolating it in tailings dams or ponds – collectively known as tailings storage facilities (TSFs) – which rank among the world's largest engineered structures. In some cases, waste is stored underground or dumped into the deep sea.[27] Although relatively rare, TSF failures can occur for a range of reasons – including natural events, poor management, or structural damage – and can cause severe environm ental and social harm. Falling ore grades leave land-based producers in a difficult predicament: they need to invest more capital to produce the same amount of metal while also facing rising costs to manage their growing waste, emissions, and other environmental impacts.

Polymetallic nodules present an alternative way to produce critical metals with near-zero solid waste. Additionally, nodules' microporous structure enhances heat transfer – facilitating efficient smelting – and their low head-grade variability (i.e., relatively consistent metal concentrations) makes metallurgical processing requirements predictable. This enables stable metal recovery rates and cost-effective nodule processing plants that operate at peak efficiency.

Head-grade Averages of CCZ Nodules vs. Land-based Ores for Nickel and Copper



Source: S&P Global for historical head-grade averages; ISA for CCZ averages.

03

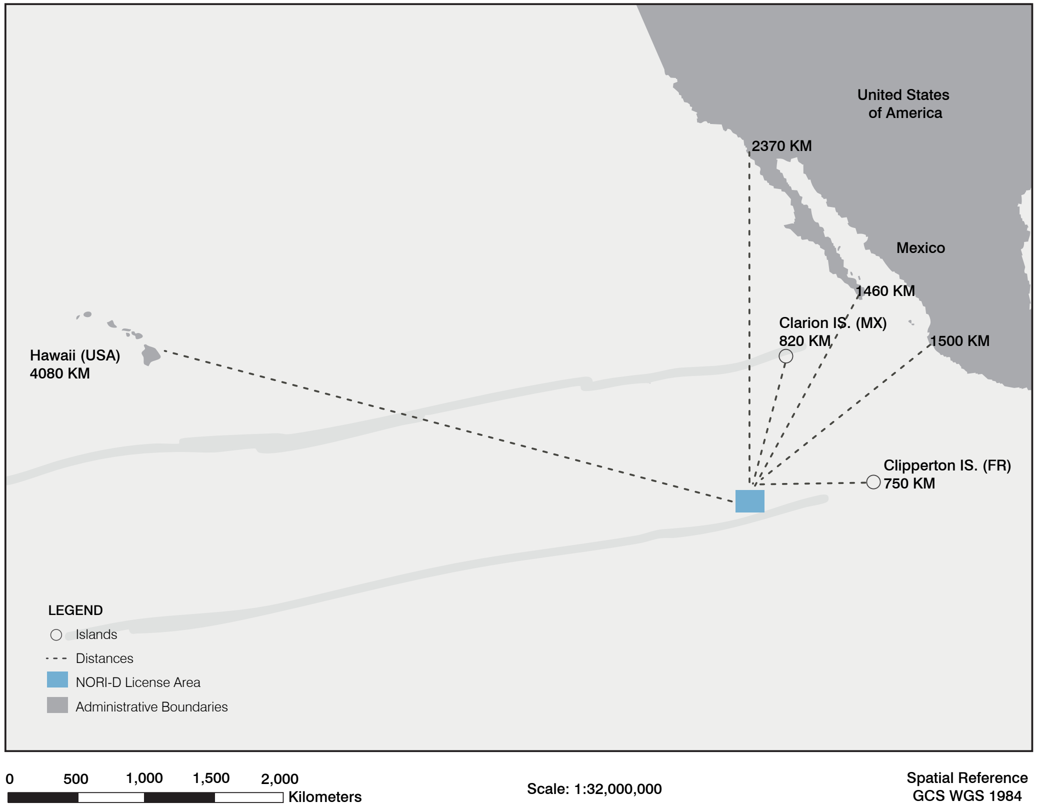
Far Offshore

We focus on polymetallic nodules located far offshore in the Clarion-Clipperton Zone (CCZ), an extensive seabed region in the Pacific Ocean that spans roughly 7,240 kilometers (4,500 miles) between Mexico and Hawaii. The area for our first project, NORI-D, lies about 1,300 nautical miles (~2,400 kilometers or ~1,500 miles) southwest of San Diego, California.

Operating in a remote area far offshore, away from any human settlements, offers the opportunity to obtain critical minerals without having adverse physical impacts on communities. While nodule collection operations come with their own operational risks, they primarily rely on remotely operated seafloor technology managed by highly trained and skilled workers aboard controlled offshore vessels. **This environment provides a strong foundation to establishing a workplace that minimizes human rights risks related to health, safety and labor practices.**

Many people assume that far-offshore, deep-sea operations will be 'out of sight, out of mind' and therefore difficult to inspect and control. Our adaptive management system (AMS) is designed to be the eyes and ears of our operations which will enable timely and transparent reporting of near real-time environmental and operational data. The AMS will leverage years of research and expertise acquired by working with leading research institutions, along with hundreds of environmental sensors that will be deployed during operations. Far offshore deep-sea operations could become among the most openly monitored resource extraction projects in the world. Refer to the Environmental Impact Management section for more information.

Distance Between NORI-D and Selected Territories



DID YOU KNOW?

Over half of energy transition-linked minerals are located on or near Indigenous Peoples' lands.[28] In the U.S., most critical mineral reserves lie within 35 miles of Native American reservations, including 68% of cobalt, 89% of copper, 79% of lithium, and 97% of nickel.[29]

An estimated 23 million people worldwide live on floodplains contaminated by potentially hazardous concentrations of toxic waste from historical and/or active upstream mining activity.[30]

Preventing Adverse Impact on Communities

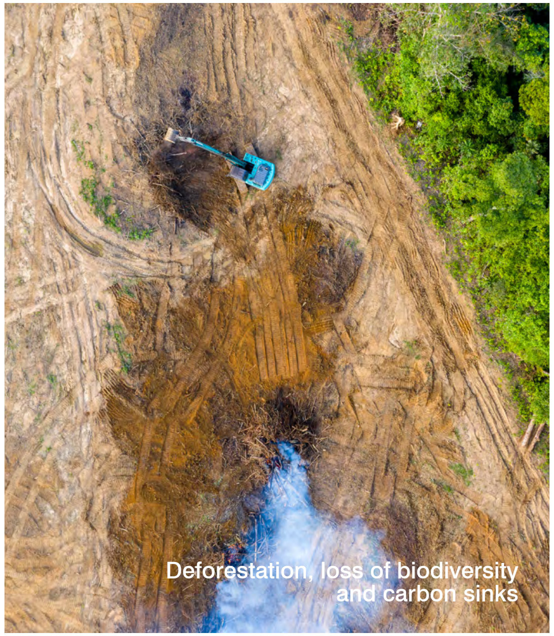
People may not always realize the high costs that terrestrial mining can impose on surrounding populations. It can involve displacing or resettling communities, disrupting the traditional ways of life and cultures of Indigenous people, and exacerbating competition over land and water resources. Communities are typically exposed to disturbances such as noise, health hazards from air pollution, water contamination, or soil degradation.[31] Additionally, they run the risk of potentially facing catastrophic tailings dam failures that can cause widespread environmental and social damage.[32] Mining also remains one of the most dangerous occupations globally,[33] and commonly involves accidents, unsafe labor practices, and, in some cases, risks of human rights abuses such as forced labor or child labor. These risks are particularly prevalent in regions reliant on artisanal and small-scale mining, which provides a livelihood for an estimated 40 million people worldwide.[34] For example, 40,000 children may be working in dangerous conditions in cobalt mines in the Democratic Republic of the Congo (DRC), facing exposure to toxic materials, grueling labor, and life-threatening hazards with little to no protection.[35]

Mining operations can be subject to vastly different regulatory standards depending on where they take place. Often, these rules have been developed in response to specific environmental, social, or economic conflicts, accidents, and disasters. Countries experiencing rapid production growth do not always have the ability, capacity, or political will to prioritize the enforcement of robust, responsible production standards.[36] For instance, the Indonesian government's policy to rapidly expand production and become the world's leading nickel producer[37] has proven effective: extraction nearly tripled in just five years, and Indonesia now accounts for approximately 59% of global production.[38] However, the growth-driven strategy behind this rapid expansion makes the enforcement of comprehensive and effective environmental and social standards challenging.

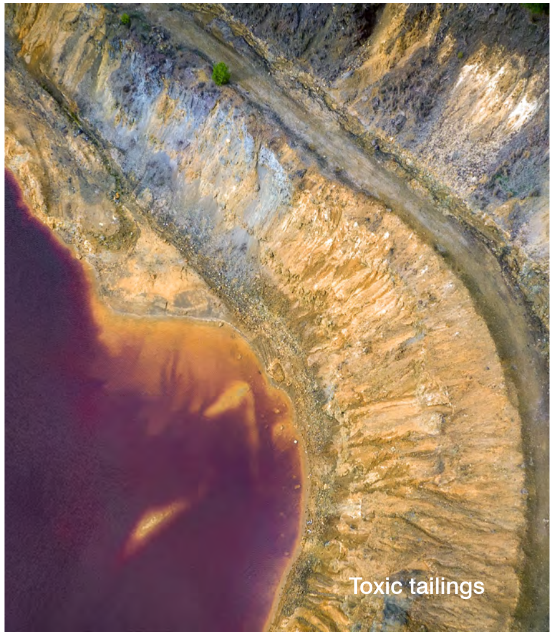
For these reasons and despite the social and economic development opportunities they can create, land-based mining operations and projects frequently face opposition.[39] **TMC is looking to collect nodules from the CCZ, far offshore away from human settlements and using remotely operated technology which enables us to better protect people. TMC's NORI-D project presents an alternative approach to sourcing critical minerals that can avoid many of the negative social risks presented today by terrestrial mining.**

More information: [Social Impact Assessment](), [Occupational Health and Safety]() pages.

Child labor



Deforestation, loss of biodiversity and carbon sinks



Toxic tailings

CO_2, SO_x and NO_x emissions

04

Very Deep

CCZ nodules lay on the seafloor of abyssal plains which represent 40% of the Earth's surface. This area comprises plains, gentle depressions, troughs and ridges, in water depth ranging from 4,000 to 6,000 meters below the sea surface. Sourcing critical minerals from such depths presents the key advantage of operating in an environment where life is relatively scarce.

The Abyssal Plain: Home to Less than 7% of Ocean Life

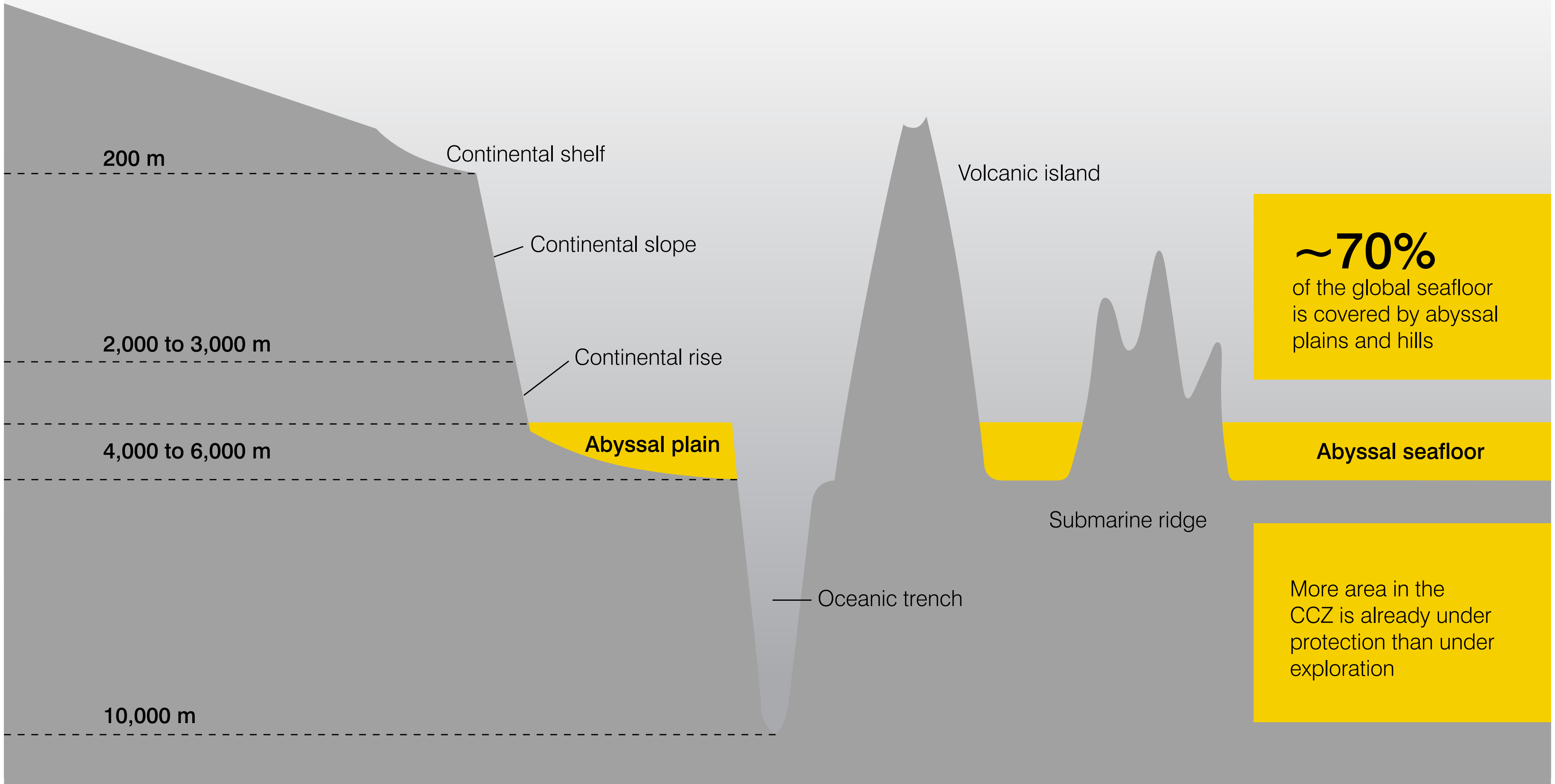
Oceans support less than 3% of Earth's living biomass, and just about 10% of ocean life is found below 4,000 meters. The deeper you go in the ocean, the less life you generally find. The abyssal plain's extreme conditions – enormous pressure (5,700-8,500 psi), near-freezing temperature (2-3°C), complete darkness, and scarce food – make it inhospitable to most life. The primary food source at these depths is marine snow – organic particles that fall from the productive photic zone near the sea surface, gradually decomposing as they sink. Bacteria make up approximately 70% of the abyssal plain's biomass.

Note: Ocean life is defined as marine life and deep-subsurface life but excluding 1.5GtC of life inside oceanic crusts as that life will not be impacted by nodule collection operations.

Sources: Bar-On et al., "The Biomass Distribution on Earth", 2018; Wei et al., "Global Patterns and Predictions of Seafloor Biomass Using Random Forests", 2010.

The abyssal seafloor is the largest habitat on Earth. Abyssal plains and hills cover approximately 70% of the seafloor, with abyssal plains alone making up about 40%.[40] This immense expanse of relatively uniform habitat presents significant potential for establishing vast protected areas. **In the CCZ, 1.97 million square kilometers have already been designated as protected areas, known as Areas of Particular Environmental Interest (APEIs), as a precautionary measure to ensure a large portion of its seafloor remains undisturbed.** This will help balance resource extraction with conservation.[41] Moreover, nodule collection operators can implement additional conservation measures within their license areas, such as creating voluntary no-take zones and retaining residual nodule cover to support species repopulation. Learn about TMC's conservation measures on the Environmental Impact Management page.

The Abyssal Seafloor: the Most Common Biogeographical Area on the Planet



Source: Harris et al., "Geomorphology of the Oceans", Jun. 2014. Note: Visual representation not to scale.

Operating in a Low Biomass Environment

Humans have already significantly altered at least three-quarters of the planet's terrestrial land surface,[42] resulting in the loss of one-third of forest cover,[43] primarily due to crop and livestock production. Today, remaining primary (undisturbed) forests account for just 10% of Earth's terrestrial surface,[44] and nearly half of the world's original tropical rainforests have already been lost to human activity.[45] Remaining rainforests are home to over 50% of all terrestrial species of animals, plants and insects,[46] but they are being destroyed at an alarming rate – a surface area larger than the Netherlands is lost every year.[47] Mapping the world's remaining known terrestrial critical metal deposits suggests mining will expand into biodiversity-rich regions.

The average abundance of wildlife has declined by 73% between 1970 and 2020.[48] Approximately 25% of species in most studied animal and plant groups face extinction, and local domesticated plant varieties and animals are also disappearing, posing a serious risk to global food security.[49]

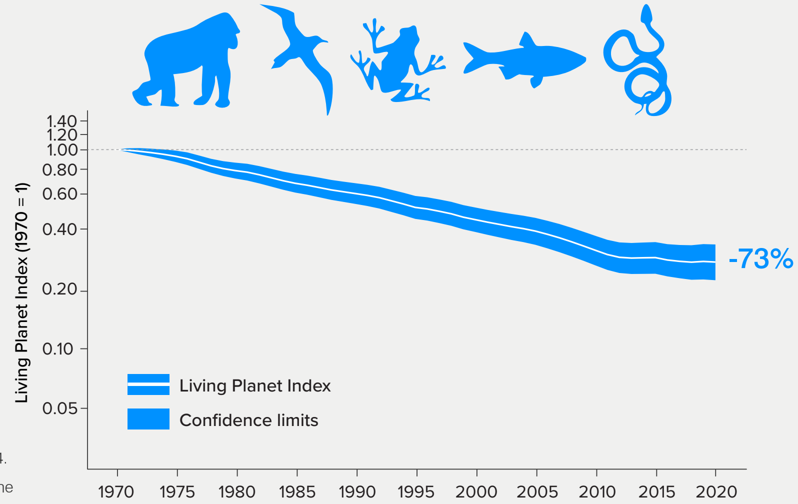
Just as terrestrial biomes vary (e.g., deserts vs. tropical rainforests), different oceanic regions exhibit distinct levels of productivity. High-productivity areas support abundant life, while low-productivity zones sustain far less. Coral reefs, such as those in the Indo-Pacific's Coral Triangle, boast the highest marine biodiversity. In contrast, abyssal plains, like those in the CCZ, are among Earth's lowest-biomass habitats, akin to deserts on land.

Most of the world's remaining known nickel and cobalt reserves – along with current production – are concentrated in equatorial regions[50] such as Indonesia and the Democratic Republic of the Congo (DRC); both considered megadiverse countries.[51] The DRC holds 55% of all known land-based cobalt reserves,[52] primarily located in the biodiversity-rich Katanga woodlands, where extensive mining has already caused severe habitat destruction and heavy metal pollution, with significant impacts on biodiversity.[53] Indonesia holds 42% of the world's land-based nickel reserves,[54] most of which are located in the Wallacea region – a critical conservation hotspot known for exceptionally high endemism. Over 40% of bird species, 55% of mammals, 45% of reptiles, 60% of amphibians, and 15% of plant species in Wallacea are found nowhere else,[55] making the region especially vulnerable to habitat loss and ecological disruption.[56] Mining operators in Indonesia are not required to implement the mitigation hierarchy or to achieve "no net loss" of biodiversity.[57]

The Global Living Planet Index (1970 to 2020)

The average change in relative abundance of almost 35,000 population trends and 5,495 species monitored across the globe, was a decrease of 73%.

The white line represents the index value, and the shaded areas represent the statistical uncertainty surrounding the value (range: -67% to -78%).

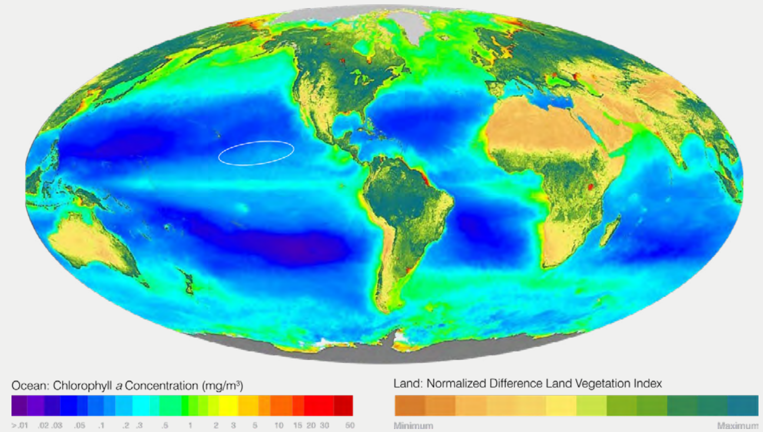


Source: WWF/ZSL, "The Living Planet Index", 2024.

Note: LPI monitors terrestrial, freshwater, and marine vertebrate populations that represent 5,495 species.

Global Surface Ocean Primary Productivity

Ocean primary productivity refers to the amount of organic material produced by photosynthetic organisms (such as phytoplankton) in the ocean, forming the base of the marine food web. Areas with high productivity tend to support diverse and abundant marine life, while areas with low productivity support less biological activity and fewer organisms.[58]



Source: NASA Ocean Color.

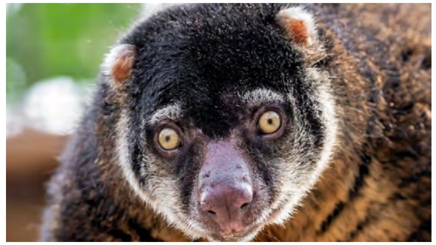
Note: As measured by chlorophyll concentration average 1997-2000, combined with the SeaWiFS-derived Normalized Difference Vegetation Index over land.

The Nickel-rich Island of Sulawesi is Home to a Remarkable Array of Endemic Species.

Sulawesi crested macaque (Macaca nigra)

Knobbed Hornbill (Rhyticeros cassidix)

Babirusa (Babyrousa celebensis)

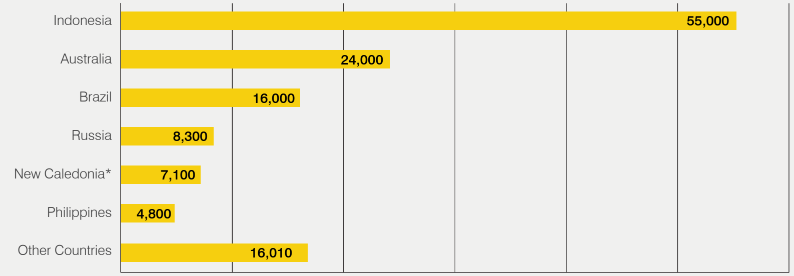


Sulawesi bear cuscus (Ailurops ursinus)

Global Land Reserves of Nickel, Cobalt, Copper, and Manganese by Country

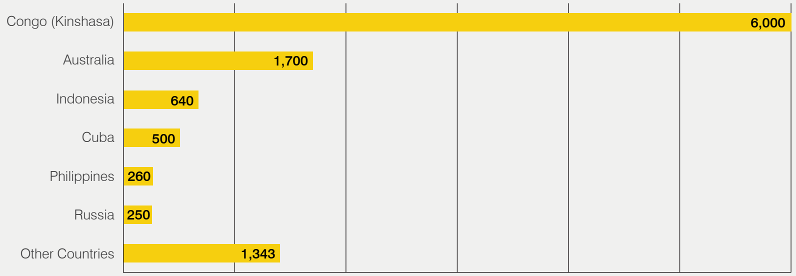
Nickel reserves (thousand tonnes)

Total worldwide >130,000 (rounded)



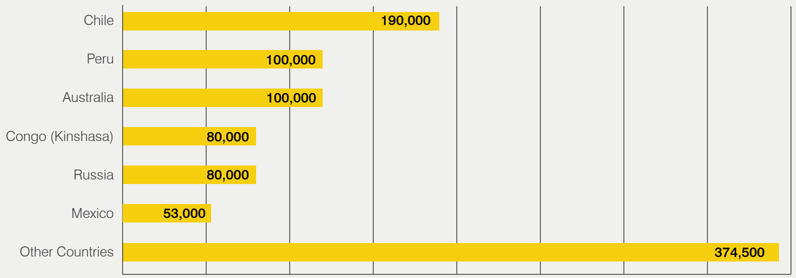
Cobalt reserves (thousand tonnes)

Total worldwide >11,000 (rounded)



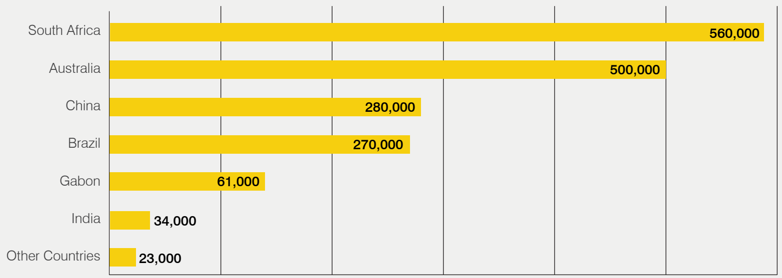
Copper reserves (thousand tonnes)

Total worldwide >1,000,000 (rounded)



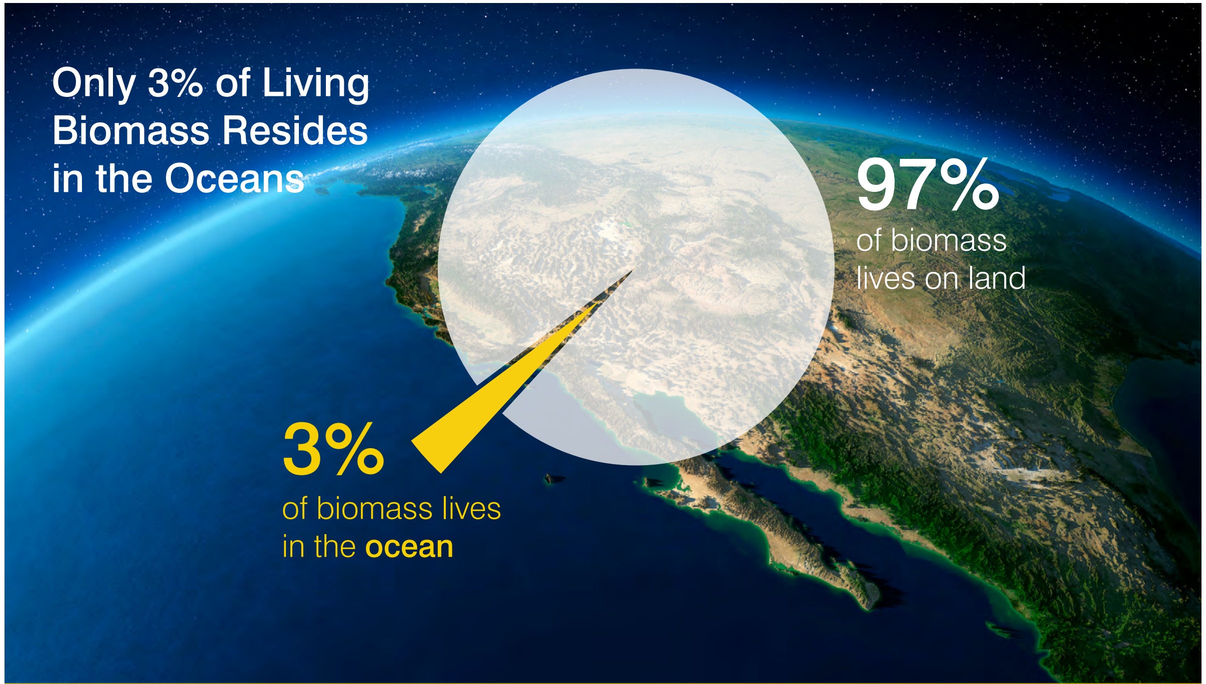
Manganese reserves (thousand tonnes)

Total worldwide >1,700,000 (rounded)



*Overseas Territory of France.

Source: USGS Mineral Commodity Summaries 2025



Oceans cover 70% of the Earth's surface but largely lack the structural complexity provided by terrestrial vegetation. As a result, they offer fewer abundant ecological niches for life to evolve. The ocean represents an expanse of similar habitats, while land features a much wider variety of smaller habitats and ecological niches mainly due to plant and tree diversity.[59] This diversity translates into greater overall biodiversity on land than in the oceans.[60]

Source: Bar-On et al., "The Biomass Distribution on Earth", 2018. Note: Ocean life is defined as marine and deep-subsurface life.

Sourcing critical minerals from the ocean provides a way to reduce pressure on land ecosystems which support 97% of all living biomass.

Polymetallic nodules on the very deep abyssal plains of the CCZ present an opportunity to source critical minerals from one of Earth's lowest-biomass environments and most extensive biogeographical area – far removed from most marine life – helping to relieve pressure on terrestrial habitats that serve as irreplaceable reservoirs of biodiversity and have already suffered significant degradation.

DID YOU KNOW?

Existing terrestrial mining sites are estimated to cover up to 100,000 km^2 of the world's surface,[61] but the actual operations site often represents only a fraction of the overall impact. As much as one million km^2 of land – an area the size of Ethiopia – could be covered with mine waste,[62] posing a potential exposure risk to humans, livestock, wildlife, and plants due to toxic metals.[63]

Coral reefs, which occur primarily in shallow, sunlit waters, cover less than 1% of the seafloor yet support more than 25% of all marine life.[64]

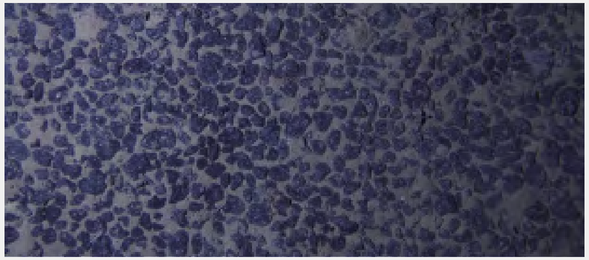
A 2021 Yale study estimated that 80-90% of all terrestrial species remain undiscovered, with Indonesia, Brazil, Madagascar, and Colombia – all nickel mining countries – accounting for roughly a quarter of potential global discoveries.[65]

05

Unattached

Among their many advantages, nodules sit unattached on the seafloor. This means that **we can collect them without cutting, digging, or blasting into the seafloor – disturbing each collection site just once**. This is another reason why we only focus on this type of deep-sea mineral resource. There are different types of deep-sea mineral resources, each located at different depths and ecosystems, and require different extraction technologies; and that is why it is important to understand the differences between them.

Main Types of Critical Deep-Sea Mineral Resources



Polymetallic Nodules

Abyssal plain

3,800-5,500 m depth

Discrete rocks, 2-10 cm in diameter, formed by dissolved metal compounds precipitating

- Growth: 10-20 mm per million years
- Unattached to the seafloor. Can be collected using gentle water jets directed at nodules in parallel with the seafloor.
- Low-food, low-energy environment.

13 grams of biomass/m²

Cobalt Crusts

Seamounts

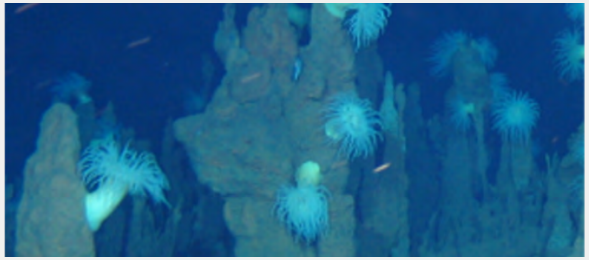
800-2,500 m depth

Rock-hard metallic layers that are 2-26 cm thick and precipitate on the flanks of submarine volcanoes.

Growth: 1-5 mm per million years.

- Integral part of the seafloor that requires hard-rock cutting to break the ore from the substrate.
- Abundant food supply due to nutrient-rich water upwelling from near-bottom currents. High-frequency destination for tuna and sharks

10-100x biomass vs. abyssal plain



Seafloor Massive Sulfides

Hydrothermal Vents

1,000-4,000 m depth

Tall chimney-like structures that form at hot vents where sulfide-enriched water flows out of the seabed, causing dissolved metals to precipitate and build chimney mounds.

- Integral part of the seafloor that requires hard-rock cutting to break the ore from the substrate.
- Abundant food supplied by chemoautotrophic bacteria that exploit energy-rich chemical compounds from the vents.

100x biomass vs. abyssal plain

Sources: Sources: Skowronek et al., "Chemostratigraphic and Textural Indicators of Nucleation and Growth of Polymetallic Nodules from the Clarion-Clipperton Fracture Zone (IOM Claim Area)", 2021; Bar-On et al., "The Biomass Distribution on Earth", 2018.

Research suggests that collecting nodules from the abyssal seafloor would have negligible impact on oceanic carbon stocks.[66] Although operations would disrupt the upper layer of the seafloor sediment by less than 10 cm deep and generate a plume; there are no known pathways for the relatively small amount of carbon in disturbed sediment to rise four kilometers up through the water column, reach the atmosphere, and contribute to global warming.[67]

Another key advantage of nodule resources are their two-dimensional nature. We are able to confidently assess the resource. By collecting samples and scanning the seafloor using autonomous underwater vehicles (AUV) equipped with geophysical instruments and cameras, we can accurately determine the composition and quantity of the resource with a high degree of confidence. We commissioned AMC, a leading global resource consultancy, to estimate the resource within the NORI and TOML contract areas. Based on the resulting technical report summaries for NORI-D and TOML, these areas were ranked as the two largest undeveloped nickel projects on the planet.[68]

2D Nature of the Resource Allows Effective Definition

BOX CORE SAMPLING[1]

250
box cores collected[2]

82,000
kg (wet) nodules collected[2]

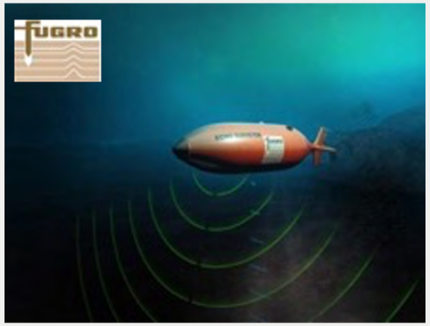
13,950
biological samples collected[2]

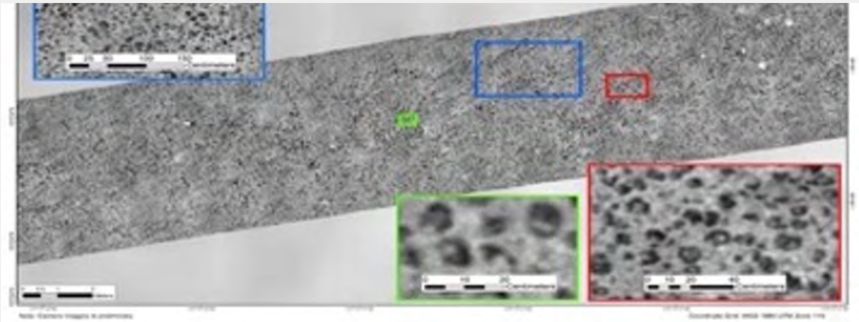


AUV CAMERA IMAGERY[1]

178,591
km² of high-res bathymetric survey[2]

5,439
km² detailed seafloor imagery[2]





1 Images from DeepGreen's resource survey offshore campaigns in NORI contract area.

2 Boxcores, nodules collected, high-res bathymetry, detailed bathymetry - compiled by DeepGreen from Canadian NI 43-101 and SEC Regulation S-K (Subpart 1300) Compliant NORI Area-D Clarion-Clipperton Zone Mineral Resource Estimate and associated financial model, AMC, March 2021. Canadian NI 43-101 Compliant TOML Clarion-Clipperton-Zone Project Mineral Resource Estimate, AMC, July 2016 and DeepOcean NORI - D Bulk Sampling Report, 2020. Erias Cruise 6a Biological and Physiochemical Co-Sampling Report NORI Area-D post cruise, 2019; Erias Cruise 6b Biological and Physiochemical Co-Sampling Report NORI Area-D post cruise report, 2019.

Assessing Resource with Confidence and Eliminating the Need for Cutting, Drilling and Blasting

The three-dimensional nature of mineral exploration on land, along with geological complexity, depth, and the variability of ore deposits, makes resource assessment complex, highly uncertain, and time- and resource-intensive. Early estimates, based on limited and widely spaced drill data, often significantly misjudge deposit size and quality, requiring extensive follow-up drilling and analysis to reduce large margin of errors. Initial estimates commonly shift significantly, sometimes by tens of percentage points as further drilling and analysis refine the understanding of a deposit.[69] This uncertainty poses a major challenge for critical minerals exploration, where companies must make strategic and financial decisions based on incomplete data, knowing that the true value of a deposit will only be confirmed after extensive work.

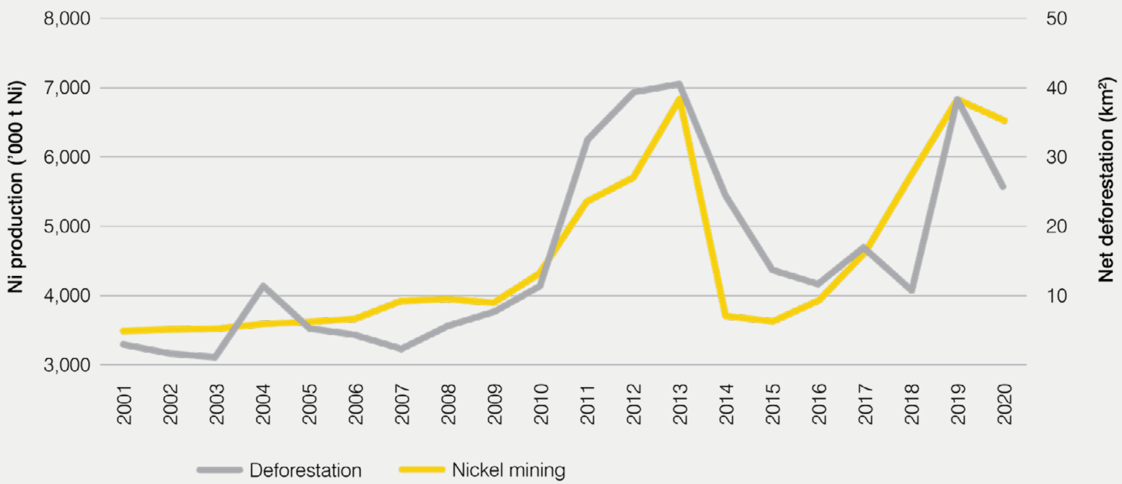
Combined with low success rates and long development timelines, these uncertainties make critical minerals exploration a high-risk endeavor. Fewer than 1 in 100 to 1,000 greenfield projects ever become mines.[70] Those that do take over a decade to reach a construction decision, with an average of 12.4 years for copper and 11 years for nickel.[71] A 2024 study of 80 major projects found that 83% faced significant cost overruns and scheduling delays, with capital expenditures exceeding initial estimates by over 40% and timelines slipping by 20–30%. For $1B+ megaprojects, overruns averaged 79%, with delays extending 52% beyond projections.[72]

Mining of three-dimensional resources is generally highly disruptive to ecosystems and the services they provide. It typically involves repeated cutting, drilling, or blasting into the ground to access the minerals. Open-pit operations – commonly used for near-surface deposits such as nickel laterites in Indonesia, copper in the DRC, and manganese more broadly – also require the removal of overburden: unwanted soil, rock, vegetation, and sediments that lie above the ore.[73] Environmental impacts include large-scale deforestation, habitat destruction and fragmentation, soil erosion, and air, soil, and water contamination, among others.[74]

The two-dimensional nature of nodules makes the resource assessment process efficient and reliable. NORI-D's in-situ resources were estimated with a high degree of confidence through a combination of sampling and seafloor scanning conducted over just 121 days on site.

Deforestation and Nickel Mining Correlation in Indonesia

A 2024 study established a strong correlation between nickel production and deforestation in Indonesia. It found that nickel production has led to the loss of over 300 km² of rainforests between 2000 and 2020, and each tonne of nickel produced caused the net loss of approximately 45 m² of tropical rainforest.[75] The region most impacted is Wallacea, which is one of the most significant biodiversity.



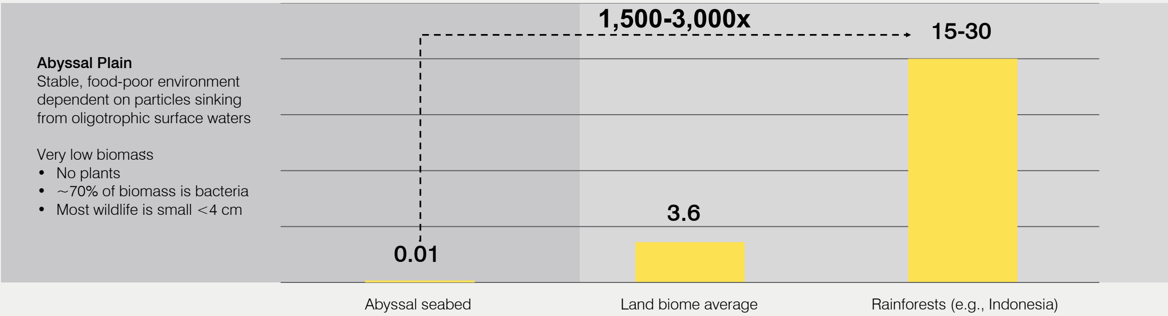
Source: Heijlen and Duhayon, "An empirical estimate of the land footprint of nickel from laterite mining in Indonesia", Feb 2024.

Rainforests provide food, water, shelter, medicine, clean air, and countless other ecosystem services essential to life.[76] They capture and store more carbon than any other terrestrial habitat and play a crucial role in climate and water regulation by for example cooling the air and driving evapotranspiration, which sustains rainfall and influences precipitation patterns worldwide.[77] Land-based mining leads to the loss of carbon stored in biomass and soils and significantly degrades their carbon sink capacity, which plays a vital role in mitigating climate change.[78]

Many people remain unaware that the extraction of most newly mined nickel and cobalt is contributing to the destruction of Indonesia's rainforests and the DRC's woodlands – an uncomfortable contradiction to the very ethos of the energy transition.

The Abyssal Plain Advantage: One of the Lowest Biomass and Carbon Sequestration Environments on the Planet

Biomass on Earth
Contained carbon kg/m²



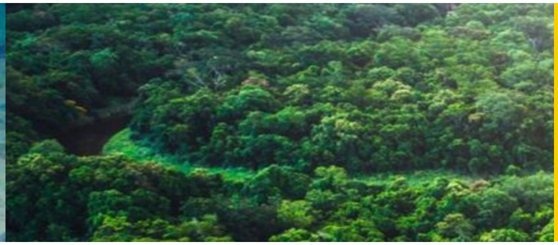
If one lines up all terrestrial and marine biomes on a scale from poorest to richest in terms of life, the scale runs from a few grams to about 30 kilograms of contained carbon per square meter (kg/m²). Rainforests, such as those in Indonesia, sit at the high end of this scale, with >15 kg/m². The abyssal plain is at the lowest end, with only about 10 grams. In other words, the abyssal CCZ has 300 times less biomass than an average land biome and up to 3,000 times less biomass than rainforest regions.

Sources: Bar-On et al., "The Biomass Distribution on Earth", 2018; Wei et al., "Global Patterns and Predictions of Seafloor Biomass Using Random Forests", 2010. Note: The abyssal seabed value incorporates an estimate of seamounts and hydrothermal vents attributed to Wei, et al., 2010. It is an overestimate because it includes all fish in the water column, rather than focusing only on the seafloor and mid-water column. The overall biomass of Earth's ice-free terrestrial area was 472.7 gigatonnes of carbon, compared to 2.49 gigatonnes of carbon for the global abyssal seabed.

DID YOU KNOW?

Roughly one-third of primary rainforests cover is estimated to remain intact today compared to the pre-industrial era.[79]

Soil erosion, primarily driven by land-use changes such as deforestation, agriculture, urbanization, and mining, significantly reduces soil fertility. Currently, soil is eroding faster than it can regenerate, undermining its capacity to store carbon dioxide.[80] As the second-largest carbon sink after oceans, soil preservation is critical for mitigating climate change.[81]



Collecting **nodules from the abyssal plains of the Clarion-Clipperton Zone (CCZ) – one of Earth's lowest-biomass and lowest carbon-sequestration environments – offers a pathway to source critical minerals without destroying primary, carbon-rich terrestrial habitats and the essential ecosystem services they provide.**

06

Portable

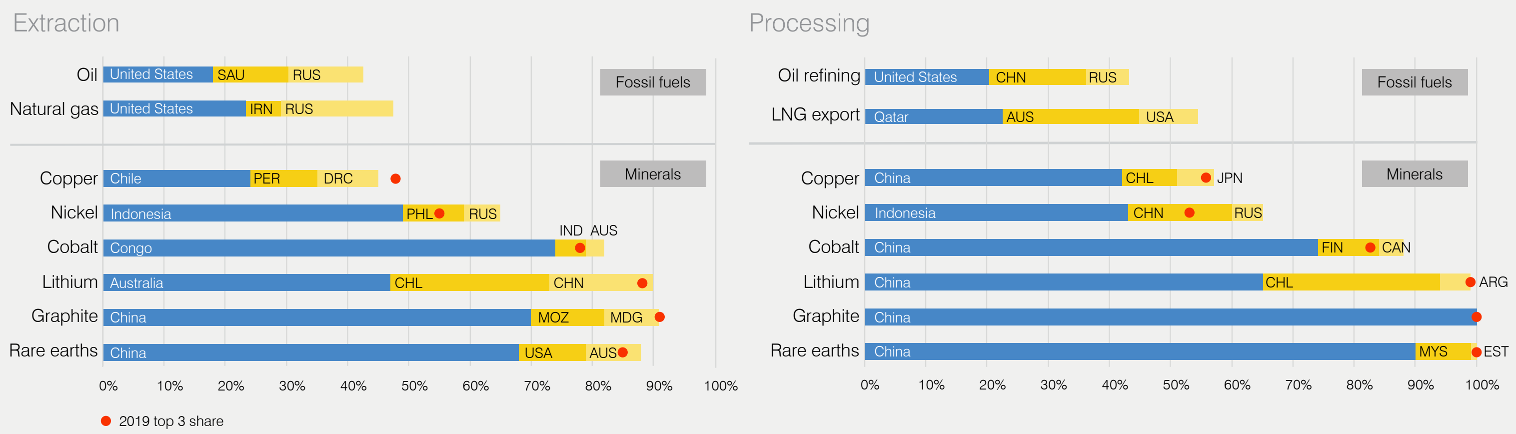
Nodules are collected from the seafloor onto a surface vessel, then offloaded to bulk cargo vessels. Once loaded, they can be shipped to any suitable onshore processing facility in the world. **The portability of nodules enables us to leverage existing, underutilized nickel-processing facilities, significantly reducing capital requirements and minimizing environmental impact.** We plan to begin small-scale commercial nodule processing at our partner PAMCO's metallurgical plant in Japan.

This portability also creates a unique opportunity to support the re-shoring of critical metals production and enhance supply chain resilience. A diversified, reliable, and secure global supply of critical metals will help accelerate the energy transition while supporting economic and geopolitical stability.

Enhancing Supply Chain Security

After decades of strategic investment and industrial policy, China has positioned itself as the dominant force in the global energy materials supply chain and the primary economic beneficiary of the energy transition. Raw materials are typically extracted from mineral-rich nations – often by companies backed by Chinese investment – then shipped to China for processing before being exported as finished metals or products or used domestically.[82] Nowadays, China controls the processing of most critical metals, producing three out of every four batteries and most electric vehicles globally – generally at significantly lower prices than in other key markets.[83]

Share of Top Three Producing Countries in Total Production of Fossil Fuels and Selected Resources and Minerals, 2022



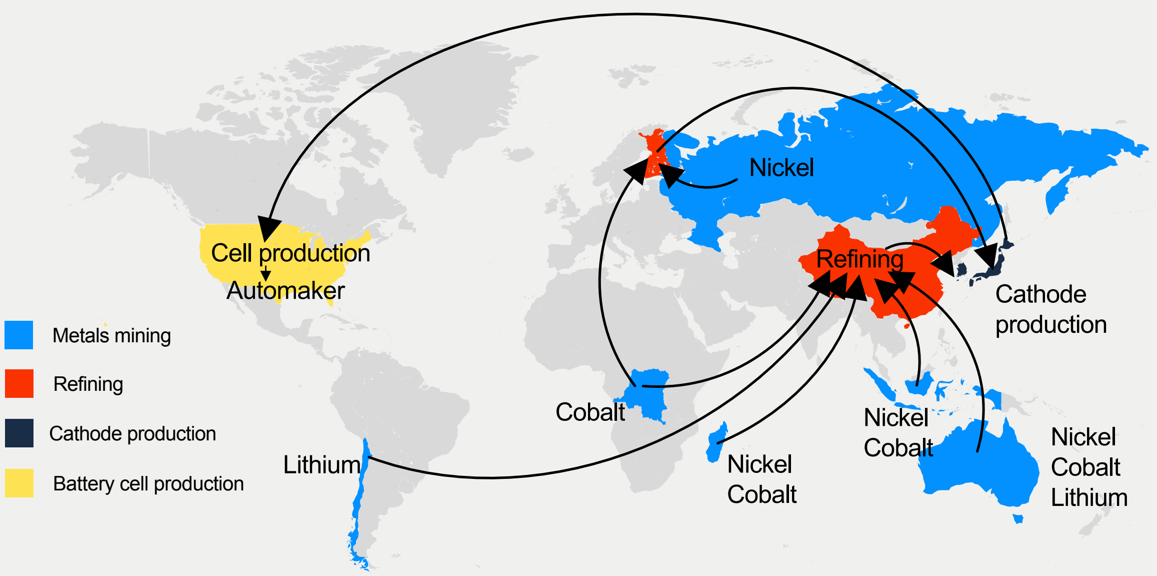
Notes: ARG = Argentina; AUS = Australia; CAN = Canada; CHL = Chile; CHN = China; DRC = Democratic Republic of the Congo; EST = Estonia; FIN = Finland; IND = India; IRN = Iran; LNG = liquefied natural gas; MDG = Madagascar; MOZ = Mozambique; MYS = Malaysia; PER = Peru; PHL = Philippines; RUS = Russia; SAU = Saudi Arabia; USA = United States. Graphite extraction is for natural flake graphite. Graphite processing is for spherical graphite for battery grade. IEA analysis based on S&P Global, USGS (2023), Mineral Commodity Summaries, Benchmark Mineral Intelligence, and Wood Mackenzie.

Sources: IEA, "Critical Minerals Market Review 2023", 2023; IEA, "The Role of Critical Minerals in Clean Energy Transitions", 2021.

> "The level of over-concentration that we see in critical minerals markets today is unlike that for any other major commodity we have come to rely on in the modern world. History has shown us that failing to properly diversify supplies and trade routes of essential resources comes with profound risks," warned IEA Executive Director Fatih Birol.[84]

Mineral dependence has become a key geopolitical concern for many countries worldwide. Both the IEA and the International Renewable Energy Agency (IRENA) list cobalt, copper, nickel, and manganese as 'critical minerals' or 'most critical materials', those they consider essential for energy security, infrastructure, and reducing carbon emissions, but are vulnerable to supply chain risks.[85] The same minerals also appear on the EU and US lists of critical minerals or materials due to their strategic significance.[86] Currently, the EU relies on imports from non-EU countries for nearly all the critical raw materials it consumes, with demand projected to continue rising, driven by the EU's target of reducing greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels.[87] Meanwhile, in 2024, the US imported 100% of the manganese consumed domestically, 76% of its cobalt, 48% of its nickel, and 45% of its copper.[88]

Status quo: ~50,000-mile supply chain controlled by China



Note: 50,000 miles describes the route, by land and sea, that some materials travel before reaching the car manufacturer as finished battery cells.

Source: BNEF, September 2021.

> The portability of nodules presents a significant opportunity to support reshoring efforts while reducing vulnerabilities and the carbon footprint of today's overconcentrated critical metals supply chain.

Some jurisdictions, such as Indonesia, ban nickel ore exports and limit processing to domestic sites, which incentivizes building on-site metallurgical facilities.[89] More broadly, land-based mining typically requires on-site beneficiation, as transporting raw ore is often cost-prohibitive as it contains large amounts of non-valuable material. Beneficiation[90] reduces transport volume by separating valuable minerals from waste, which is especially important for the many remote mines lacking infrastructure for bulk transportation such as roads, railways, or ports.[91]

On-site facilities in remote areas often lack access to low-carbon electricity. In Indonesia, many nickel mines and smelters – particularly in off-grid regions like Sulawesi and Halmahera – rely heavily on cheap coal-fired power.[92] As a result, the carbon intensity of coal-powered nickel can be two to 2.5 times higher than that of renewable-powered nickel (based on the isolated case of a major hydro-powered operation producing the country's lowest-emission nickel).[93]

DID YOU KNOW?

The Chinese province of Jiangsu alone produces more batteries than Europe and North America combined.[94]

Globally, export restrictions on critical raw materials have seen a fivefold increase since 2009.[95]

Nearly 70% of Indonesia's electricity comes from coal.[96] Nickel industrial parks alone consume up to 15% of the country's coal-fired power, a share projected to rise to 24% despite increases in renewable energy production.[97] Today, Indonesia hosts over 250 nickel smelter production lines.[98]

From Collection to Processing

From collecting nodules to producing critical metals, we have focused on developing two main operation segments:

Offshore Operations

Involve all the activities required to assess polymetallic nodule resources, collect and lift them from the seafloor to a surface vessel, offload them for transport to shore, and study and manage environmental impacts.

Onshore Operations

Involve developing, testing, and deploying a near-zero solid waste flowsheet for commercial nodule processing and refining, and selecting suitable sites and partners.

We have an experienced core team and collaborate closely with partners to deliver on our goals. Through these partnerships, we access complementary expertise and technology to develop and implement nodule collection and processing in an effective and environmentally responsible manner. In 2024, we published TMC's Supplier Code of Conduct to set clear expectations for ethical, environmental, and social performance across our supply chain.

First Project: NORI-D

Our first project, NORI-D, focuses on a 25,160 km^2 area located on the southeast margins of the CCZ. NORI-D offers an optimal combination of shore proximity (1,500 km from the coast of Mexico), water depth (~4.3 km), and high, consistent nodule abundance (15-20 kg/m^2).

We are looking for a phased scale-up approach to nodule collection operations in NORI-D.

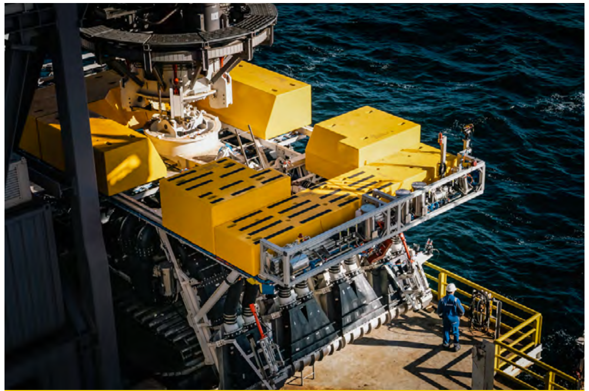
Offshore Operations

From technology development to collection of samples and data for our environmental baseline studies and impact assessments, our offshore activities focus on these workstreams:

Resource Definition

Assessing nodule abundance, composition, and metal content to determine resource size, quality, and project economic viability

Collection System



Designing, developing, and testing a system to collect seafloor nodules, lift them to the surface, and offload them for bulk transportation to shore

Environmental Program Campaigns

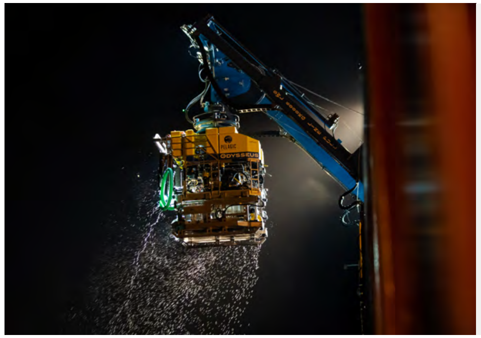
Collecting environmental samples and data to develop environmental baseline, evaluate potential impacts, and define mitigation strategies

Resource Definition

We completed nine offshore campaigns to collect samples and complete subsea surveys to define resource quality and size within the NORI and TOML areas. AMC, a leading global resource consultancy, evaluated the resource independently in compliance with two mineral project reporting standards: Canada's NI 43-101 and the U.S. Securities and Exchange Commission (SEC)'s S-K 1300 standards. In 2021, we published technical report summaries detailing the measured, indicated, and inferred in-situ resources for the NORI and TOML contract areas.[99] **In 2023, NORI and TOML were ranked as the two largest undeveloped nickel projects on the planet.**[100]

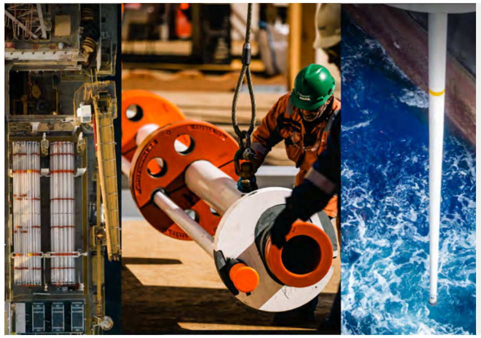
Collection System

In collaboration with our strategic offshore partner and investor, Allseas, we have designed, tested, and continue to develop an integrated nodule-collection system comprising three main components:



Seafloor collectors

Self-propelled, tracked subsea vehicles equipped with flow-optimized collector nozzles that gently lift polymetallic nodules from the seafloor using seawater jets directed parallel to the seabed. This technique elevates the nodules avoiding direct jetting into the soil and thereby minimizing seabed disruption. The collector units are remotely operated and powered via umbilical cables connected to the surface production vessel.



A riser and lift system

A riser system consisting of a semi-rigid pipe, outfitted with an airlift pump to lift nodules and seawater from the collector vehicle to the production vessel. The system then returns seawater and a small amount of sediment to the water column.

A production vessel

Collects, dewaters and stores nodules before offloading them for bulk transportation. In 2020, *Hidden Gem* – a 228-meter-long former drillship vessel – was acquired and repurposed into the world's first dedicated polymetallic nodule production vessel.

We have been studying the potential environmental impacts of our future operations and refining the technology used in this system – including laboratory tests and analysis, small-scale system trial in the Atlantic Ocean, and the first integrated collection system trials in the Clarion-Clipperton Zone (CCZ) since the 1970s.

The collection system test took place in 2022 in the CCZ, and a six-meter-wide prototype collector vehicle travelled over 80 km across the seafloor in an 8 km^2 section of NORI-D allocated for the tests.

Leveraging the wealth of data and learnings accumulated, Allseas is now scaling up the collection system for an increased production capacity, including two new 15-meter-wide collector vehicles, a larger diameter riser pipe, larger compressor spread, and improvements to the system designed to further mitigate environmental impacts.

Environmental Program Campaigns

We have designed and led the most comprehensive seabed-to-surface research program ever conducted in the CCZ, carried out in collaboration with leading scientific institutions, to ensure we sufficiently understand the deep-sea ecosystem to mitigate the potential environmental impacts that our operations could cause. The Environmental research program builds on the data gathered from 22 offshore campaigns conducted over the last 13 years, with over $250 million invested in research.

We have collected biophysical data from the NORI areas since 2012 and in 2021, we completed campaigns related to our environmental baseline assessment. These studies characterize an area's biophysical components before developing a project, and this knowledge is used to identify opportunities to minimize impacts and establish protection measures. In 2022, we conducted four additional environmental research campaigns to survey the pre-, during-, and post-collection test environment, and monitor the impacts during the trials in the CCZ. In 2023 and 2024, NORI completed two additional campaigns to collect key environmental data to assess seafloor impacts and recovery one year after the pilot nodule collection system test. You can learn more in the Environmental Approach page.

List of Offshore Campaigns and Activities

We list below the offshore exploration campaigns conducted to date, forming the foundation of TMC's resource definition, environmental research, and nodule collection pilot programs. The table also includes non-campaign activities involving our partner Allseas' vessel, the Hidden Gem, provided for our exclusive use.

Year	Area	Campaign	Scope	Campaign Length (days)
2012	NORI	Campaign 1	Exploration | NORI bathymetric mapping, geological and environmental sampling	42
2013	NORI	Campaign 2	Exploration | NORI bathymetric mapping, geological and environmental sampling	62
2013	TOML	CCZ13	Exploration | TOML bathymetric mapping, geological and environmental sampling	–
2015	TOML	CCZ15	Exploration | TOML bathymetric mapping, geological and environmental sampling	97
2017	TOML	CCZ17	Exploration | TOML mooring deployment	2
2018	NORI	Campaign 3	Exploration | NORI-D Bathymetric mapping, geological, geotechnical, and environmental sampling	60
2019	Marawa	Marawa	Exploration | MARAWA bathymetric mapping, geological and environmental sampling	–
2019	NORI	Campaign 4a	Exploration | NORI-D environmental baseline – metocean studies #1	22
2019	NORI	Campaign 6a	Exploration | NORI-D geological, geotechnical and environmental sampling	45
2019	NORI	Campaign 6b	Exploration | NORI-D geological, geotechnical and environmental sampling	40
2020	NORI	Campaign 4b	Exploration | NORI-D nodule bulk sampling, seafloor geotechnical evaluation	34
2020	NORI	Campaign 4c	Exploration | NORI-D nodule bulk sampling, seafloor geotechnical evaluation	36
2020	NORI	Campaign 4d	Exploration | NORI-D environmental baseline – metocean studies #2	24
2020	NORI	Campaign 5a	Exploration | NORI-D environmental baseline – benthic #1	49
2020	NORI	OI	Exploration | NORI-D benthic environmental baseline – ROV/ AUV survey	10
2021	NORI	Campaign 4e	Exploration | NORI-D environmental baseline – metocean studies #3	23
2021	NORI	Campaign 5b	Exploration | NORI-D environmental baseline – pelagic #1	54
2021	NORI	Campaign 5c	Exploration | NORI-D environmental baseline – pelagic #2	45
2021	NORI	Campaign 5d	Exploration | NORI-D environmental baseline – benthic #2	45
2021	NORI	Campaign 5e	Exploration | NORI-D environmental baseline – benthic and pelagic (ROV and benthic landers)	50
2022	NORI	Pre-collection test	Exploration | NORI-D | Hidden Gem conversion works, collector vehicle deep water test in the Atlantic Ocean, and transit to Campaign 7c departure point	192
2022	NORI	Campaign 7a1	Exploration | NORI-D pre-collector campaign	36
2022	NORI	Campaign 7a2	Exploration | NORI-D pre-collector campaign	41
2022	NORI	Campaign 7c	Exploration | NORI-D collector campaign (Hidden Gem)	71
2022	NORI	Campaign 7b1	Exploration | NORI-D collector monitoring campaign	43
2022	NORI	Campaign 7b2	Exploration | NORI-D post-collector campaign	43
2023	NORI	Campaign 8a	Exploration | NORI-D post-collector test ecosystem function survey	46
2023	NORI	*Hidden Gem* 2023	Vessel standby and nodules transportation	365
2024	NORI	Campaign 8b	Exploration | NORI-D post-collector test ecosystem function survey	73
2024	NORI	*Hidden Gem* 2024	Nodules offloading and vessel layup	365

1. Campaign 2 and CCZ13 was shared by NORI and TOML
2. Campaign 6b and Marawa was shared by NORI and Marawa
3. CCZ17 and OI were short campaigns conducted by vessels traveling through the CCZ
4. In 2023, the Hidden Gem was in standby for over 10 months in Mexico and was then used to ship nodules to our onshore partner PAMCO through South Korea. We report the corresponding impacts throughout 2023.
5. In 2024, the Hidden Gem completed transit to South Korea, where it unloaded nodules and remained in layup throughout the year.

Onshore Operations

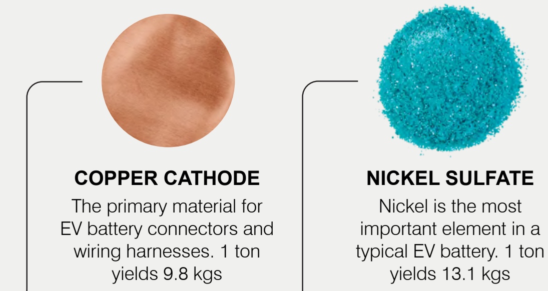
Encompassing all activities related to converting nodules into products once shipped to a port from the CCZ.

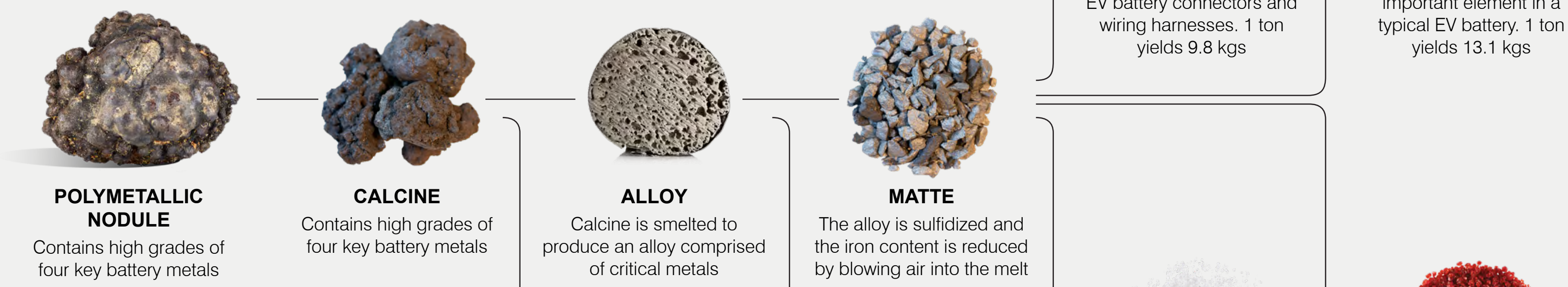
Processing System Development

We have developed a flowsheet which combines a pyrometallurgical front-end with a downstream hydrometallurgical refining process together with engineering firm Hatch and metallurgical testing service provider Kingston Process Metallurgy (KPM) to process and refine collected nodules into critical metals. **We selected this flowsheet because it meets our project objectives: generating almost zero solid waste, achieving high pay metal recoveries, producing high-value products, and reducing upfront capital expenditures.** By using a conventional flowsheet and equipment, we can leverage existing underutilized rotary kiln electric furnace (RKEF) facilities, helping streamline both development costs and timelines while heavily reducing risk.

Converting the Full Nodule Mass into Products

Through our flowsheet design, we prioritized producing by-products that are saleable into existing markets to minimize waste. Specifically, we can granulate the converter slag from the pyrometallurgical process to create an aggregate suitable for applications such as road construction, cement production, or filler material. By selecting ammonia as a principal reagent in the hydrometallurgical refinery process, we can generate fertilizer-grade ammonium sulfate as a by-product for use in agriculture. The flowsheet also enables the recycling of the relatively small stream of residue from the refinery process into the smelting process, further reducing waste and increasing our recoveries.





High-grade nickel, copper, and cobalt (NiCuCo) alloy and matte from the pyrometallurgical process are intermediary products that can be fed into a hydrometallurgical refinery process to produce high-purity, battery-grade metals such as those used in electric vehicles.

In 2021, through pilot-scale smelting, sulfidation, and converting campaigns, we successfully produced a nickel-copper-cobalt (NiCuCo) matte and a manganese silicate product. In 2022, SINTEF – one of Europe's largest independent research institutions – confirmed that TMC's manganese silicate can be used as the sole manganese source for silico-manganese (SiMn) production. In this refining stage, TMC's manganese silicate product behaves similarly to conventional manganese ores while offering significant potential advantages. As a pre-reduced product, it would reduce energy requirements for downstream clients by reducing the carbon-intensive reduction step required when using traditional manganese alloys – potentially delivering cost and emissions savings. In 2024, TMC completed a bench-scale testing program at SGS Lakefield, culminating in what is believed to be the world's first production of battery-grade nickel and cobalt sulfates derived exclusively from polymetallic nodules.

In 2023, we entered into a binding memorandum of understanding (MoU) with Pacific Metals Co Ltd (PAMCO), where PAMCO would complete a feasibility study to toll treat 1.3 million tonnes of wet nodules per year at its Hachinohe smelting facility in Japan. In 2024, TMC and PAMCO achieved a breakthrough by successfully generating calcine from nodules collected during the offshore pilot collection. In the next phase, PAMCO will smelt the calcine to generate a high-grade NiCuCo alloy and a Mn Silicate product.

> With our near-zero solid waste flowsheet now fully tested, we are focused on validating that production can be scaled while maintaining the metal recoveries observed during testing.

List of Offshore Campaigns and Activities

Below, we list all lab, pilot, and commercial-scale test work performed to date.

Year	Business Partner	Project	Scope
2016	Kingston Process Metallurgy	Decomposing manganese nitrate concept study	Identify solutions with a strong potential to produce manganese dioxide from manganese nitrate and compare against previously determined success criteria.
2019	Kingston Process Metallurgy	Bench-scale pyrometallurgical test work	Perform lab-scale testing to inform a heat and mass balance model, a pilot plant program work plan, and a pre-feasibility study.
2020	Hatch	Onshore processing scoping study	Complete scoping level trade-off studies to validate design and identify improvements for proposed TMC flowsheet.
2020	FL Smidth	Rotary kiln calcining pilot program	Process TMC's polymetallic nodules through a pilot scale rotary kiln to prove concept of first stage of TMC's proposed flowsheet, create a calcine intermediate for downstream testing, and compile data to inform pre-feasibility study. Identify potential process issues.
2021	eXpert Process Solutions (XPS) (Glencore)	Smelting, sulfidation, and converting pilot program	Process TMC's calcine intermediate product to create alloy and matte intermediate products that can be used for downstream testing and to prove concept of TMC's selected flowsheet. Gather data to inform pre-feasibility study and identify potential process issues.
2022	SINTEF	Manganese product development	Evaluate the feasibility of TMC's manganese silicate product as manganese source for silico-manganese production.
2023	SGS	Testing hydrometallurgical refinery flowsheet	Perform lab-scale testing on TMC's NiCuCo matte generated at XPS to inform key data for the refinery flowsheet development. Generate final products from TMC's flowsheet.
2023	SINTEF	KG Scale Test Work	Scale up SINTEF's previous work on processing TMC's manganese silicate product into SiMn to further evaluate the feasibility of TMC's product for that purpose.
2024	KPM	Smelting of PAMCO Calcine	Conduct various studies supporting onshore development projects
2024	SGS	Testing hydrometallurgical refinery flowsheet	Perform bench-scale testing of TMC's hydrometallurgical refinery flowsheet. SGS and TMC produced the world's first nickel sulfate and cobalt sulfate from deep-seafloor polymetallic nodules, indicating TMC's resource is suitable for battery markets.
2024	PAMCO	Commercial-scale demonstration of front-end RKEF process	Conduct a commercial-scale pilot test of polymetallic nodule processing using PAMCO's Rotary Kiln–Electric Furnace (RKEF). TMC and PAMCO successfully produced calcine from a 2,000-tonne sample of nodules collected in 2022.

Governance Approach

We have developed a governance structure to ensure that we actively embed environmental, social, and governance (ESG) considerations into our business. Accountability for ESG performance is an open and iterative process across all levels in the company. Ultimately, TMC's Chief Executive Officer (CEO) is responsible for overall sustainability management, compliance, and performance. The board of directors provides oversight of our sustainability strategy, which our Chief Sustainability Officer proposes and the board's Sustainability and Innovation (S&I) Committee vets.

Board of Directors
Responsible for ESG strategy and governance.

Sustainability & Innovation (S&I) Committee
In-depth review of strategy and performance. First stop to discuss ESG risks and opportunities.

CEO
Responsible for the company's ESG management, compliance and performance.

Chief Sustainability Officer
Identifies TMC's most material sustainability issues and sets the sustainability strategy framework, with oversight by the S&I Committee and input from external and internal stakeholders. Works with TMC leadership and department heads on strategy, goals development and implementation. Works closely with the **Chief Strategy Officer** to ensure sustainability and business strategy are fully aligned.

Leadership Team
Responsible for TMC's sustainability performance, monitoring progress and addressing challenges. Provides relevant information to identify ESG-related risks and opportunities, develops strategy and defines targets.

Department Heads
Responsible for implementing sustainability strategy, tracking progress on goals and mitigating material risks. Provide regular updates to peer leadership and the board.

Board of Directors Composition, Responsibilities, and Commitments

Our board of directors recognizes that strong corporate governance, which involves actively engaging with and seeking input from stakeholders, promotes accountability, transparency, and sound decision-making that fosters sustainable business growth over the long term. As of 31 December 2024, our board comprised seven males and two females who have significant experience as top-level executives at public companies or as entrepreneurs who founded successful organizations. See TMC's Proxy Statement 2024 for detailed information and metrics about our board of directors.

Together with management, the board focuses on bringing the polymetallic nodule resource into commercial production, scaling to meet demand with the lowest possible ESG footprint, and positioning the company for long-term growth and profitability. This includes decisions to:

- Set a new bar for responsible metals production.
- Secure the world's first polymetallic nodules commercial permit.
- Develop the world's first commercial nodule project.
- Develop strategic collaborations with offshore and onshore partners to enable capital-efficient, ESG-focused pathways to start and scale production capacity in response to critical metals demand from the energy transition and global development.

The board engages directly and regularly with management on these topics.

Board Committees

The board has four standing committees: the Audit Committee, Nominating and Governance Committee, Compensation Committee, and Sustainability and Innovation Committee, whose key responsibilities are outlined below.

Sustainability and Innovation Committee

- Oversee sustainability and innovation initiatives with potentially significant business, financial, and/or reputational impact
- Oversee sustainability- and innovation-related risks and opportunities
- Review and advise on TMC's sustainability strategy and performance

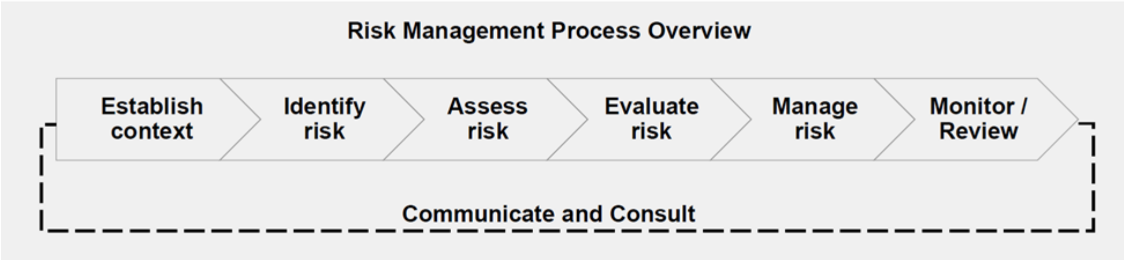
TMC's board of directors is ultimately responsible for overseeing ESG risks and opportunities. TMC's management informs the S&I Committee of ESG issues that could potentially have an impact on the business, and the S&I Committee reviews and advises on them. Such issues include material climate-, nature-, and stakeholder-related impacts and innovation matters.

The S&I committee meets at least once per quarter. It works closely with TMC's leadership, particularly the Chief Sustainability Officer (CSO), to guide the company's sustainability strategy. The Committee also reviews and makes recommendations to management on the company's progress towards its sustainability goals and issuing at minimum an annual public report on ESG performance and other non-financial strategies, initiatives, and targets. Refer to TMC's Sustainability and Innovation Committee Charter for more information.

For up-to-date information on our current Board of Directors, committee compositions, and charters, please visit TMC's Corporate Governance webpage.

Risk and Impact Management

The process we use to manage ESG-related risks is derived from TMC's Enterprise Risk Management (ERM) policy, which incorporates a consistent approach to risk management into our culture and strategic planning, and our ERM framework which describes the roles, responsibilities, and strategy that we use to manage risks. Together, they establish a systematic methodology applicable across all activities and projects, creating the context for timely decision-making in response to risks and opportunities. This constitutes the first stage of our seven-stage risk management process.



We identify risks on an ongoing basis and in response to significant changes, including the introduction of new processes, programs, or initiatives. Following a risk assessment based on likelihood and impact, we prioritize risks using TMC's risk matrix and pre-established risk appetite criteria. Each risk is listed, described, and categorized in a risk register. Risk owners are assigned responsibility for managing these risks and overseeing key mitigation procedures and controls. We manage risks by identifying, assessing, and implementing treatment options that aim not only to minimize potential downsides but also to maximize upside opportunities. Our monitoring and review process ensures the ongoing evaluation and refinement of the ERM program's effectiveness and relevance.

Sustainability- and innovation-related risks and opportunities are identified and communicated across the organization by management, with ultimate oversight resting with the Board. To inform effective risk management and execution of our strategic plan, we draw insights from continuous research and third-party engagement. For example: We continuously scan for key risks and opportunities using sources such as the International Energy Agency, World Economic Forum, Benchmark Mineral Intelligence, and other industry reports and research.

We adopt a science-driven approach to understanding and mitigating the potential impacts of our operations. This includes a comprehensive offshore science program and the development of an environmental management system (EMS), supported by technologies such as an adaptive management system (AMS). We assess the expected impacts of future operations, test hypotheses, and identify opportunities to manage our footprint and enhance positive outcomes for people and the planet.

Our project presents both unique risks, such as those related to the novel nature of deep-sea activities, and more conventional industrial risks, such as those from onshore metallurgical processes. For both operational contexts, TMC has initiated the development and implementation of robust environmental and social risk management systems aligned with internationally recognized frameworks.

Our environmental impact assessment follows the ISO 31000 management framework, which provides structured principles and processes for risk identification, analysis, and treatment. This approach facilitates alignment with systems such as ISO 14001 (Environmental Management) and ISO 45001 (Occupational Health and Safety), promoting consistency and integration across operational practices.

In 2024, TMC published five key policies to support the implementation of best international practices for ESG risk management:

- **Environmental Policy**
- **Health and Safety Policy**
- **Human Rights Policy**
- **Supplier Code of Conduct**
- **Climate Change Policy Statement**

Our policies outline clear, actionable commitments that offer stakeholders visibility into the standards we uphold – for ourselves and our partners – to operate responsibly and in alignment with our ESG goals. We incorporated third-party expert feedback from the independent ESG advisory firm Prizma.

Stakeholder Engagement

We engage a wide range of stakeholders. Through open communication, meaningful dialogue, and relationship-building based on trust and inclusion, we aim to use stakeholder engagement as a feedback loop that continuously informs and improves how we develop this resource from the outset.

Our engagement builds on good practice approaches such as those outlined in IFC guidance. The table below broadly shows the main stakeholder groups with whom we engage and the key topics we discuss with them.

Stakeholder	Engagement Method	Examples of Key Topics Discussed	Objectives
Employees	Townhalls, in-person meetings, company chat, emails, internal committees for topics such as the environmental research program, ESG, Pacific Islands engagement	Vision, plan, strategy, company values, projects performance and updates, climate change, ESG performance expectations and progress	• Communicate strategy and progress • Gain feedback and insights • Maintain an engaged purpose-driven workforce
Strategic Partners and Contractors	Meetings, emails, website, reports, contracts, exploration campaigns, technology development and testing	Project updates, opportunities, megatrends, vision, our policies, sustainability approach and goals, ESG performance expectations and due diligence process, scope of work, sustainability initiatives.	• Create shared value • Leverage expertise • Mitigate risk • Deliver science-based solutions • Foster innovation to decarbonize value chain
Communities of Sponsoring States	Meetings, townhalls, website, social media, information videos, local newsletter, local events, community programs, consultation, press releases	Project and industry updates, our vision, responsibilities and sustainability approach and goals, deep-sea mining regulations, shared value creation, local capacity building, education, local initiatives, grants, climate change	• Be a good partner • Engage transparently • Support local training and capacity building initiatives • Understand community priorities • Create shar ed value
Investors and Shareholders	Annual general meeting, meetings, emails, website, reports, webinars, conferences, press releases	Project updates, financial and ESG reporting, our sustainability approach and goals, climate change, energy transition, energy metals supply and market trends, governance, strategy, risks and opportunities	• Communicate strategy, updates and progress, including risks and opportunities • Understand market trends and expectations • Build transparency and drive value by sharing financial and ESG performance
Industry Groups	Meetings, emails, website, reports, webinars, press releases	Project updates, best practices, standards development, climate change, transparency, ESG, environmental and social impacts	• Go beyond compliance and support the development of transparent ESG standards and certification that drive continuous improvement for the industry
Governments, Regulators, Sponsoring States	Meetings, emails, reports, industry events, webinars	Project updates, governance, transparency, accountability, compliance, permitting, standardization, ESG strategy, climate change, ESG certification development	• Support and implement best-in-class regulations and standards that build in a high level of transparency and accountability • Support training and capacity building
Scientific Community	Meetings, emails, reports, webinars	Project updates, environmental impact assessments, management and monitoring, deep sea knowledge, conservation, innovation, climate change, carbon offsets, blue economy, transparency.	• Promote open and healthy debate and understanding that drive science-driven decisions • Advance deep-sea research and understanding of impacts • Support conservation and advance solutions from the blue economy

Stakeholder	Engagement Method	Examples of Key Topics Discussed	Objectives
Non-Governmental Organizations (NGOs) and Global Community	Meetings, website, social media, press releases, reports, consultation	Project updates, transparency, accountability, climate change and energy transition, real-world data and trade-offs, shared value, best practices, our sustainability approach, goals and impact.	• Promote transparency, inclusivity • Foster conversation and collaboration • Drive science-based understanding of impacts and receive feedback to understand and address concerns
Value Chain (Suppliers, Potential Customers)	Meetings, emails, reports, conferences	Project updates, critical metals demand trends: availability/security/ price/ ESG impacts of critical metals supply; climate change and energy transition; our value proposition; ESG performance expectations and due diligence process.	• Develop opportunities • Foster collaboration • Build ESG focus and transparency • Leverage expertise • Decarbonize value chain • Deliver science-based solutions
Media, General Public	Press releases, website, social media, reports, interviews, footages	Project updates, environmental and social impacts, deep-sea science and exploration, transparency, market demand for critical minerals, technological innovation, sustainability approach and goals,	• Promote transparency and build trust through accessible, fact-based communications • Foster public awareness and dialogue • Share scientific findings and provide updates on progress

We collaborate with leading scientific research institutions and universities to advance deep-sea knowledge. We also joined an international consortium of marine mineral developers, contractors, financial institutions, research organizations, NGOs, and regulators to develop the first ESG Handbook for Marine Minerals. The handbook promotes standardized, transparent disclosure of ESG performance specific to deep-sea projects, aligned with the rapidly evolving global ESG reporting landscape.

Business Ethics and Transparency

TMC aspires to act in ways that benefit the planet and people for generations to come. Our Code of Business Conduct and Ethics (the "code") sets out basic principles that guide all individuals who work at or for TMC to prevent any improper behavior. The company also requires collaborators and business partners to abide by the requirements and guidelines set forth in other applicable TMC policies, such as its Anti-Corruption and Anti-Bribery Compliance Policy, and Supplier Code of Conduct.

TMC requires any employee, partner or contractor who learns about anyone who may have violated the code or other TMC policies to report the violation to our ethics hotline, the board chairman, or our general counsel. A third-party service provider operates the hotline, and reports can be made in a completely anonymous and confidential manner. TMC encourages any person who, in good faith, suspects that someone has violated the code to report it without fear that they will face negative repercussions (e.g., termination, demotion, reprimand, or other harm). We logged no reported incidents in 2024.

Environmental Approach

At TMC, our approach to environmental stewardship is grounded in science, transparency, and continuous improvement. In line with our Environmental Policy, we are committed to understanding, managing, and minimizing the environmental impacts of our operations.

Environmental Impact Assessment

Our ocean research program forms the foundation of our Environmental Impact Assessment (EIA). The assessment's goal is to ensure that we sufficiently understand the deep-sea ecosystem to effectively mitigate the harm that our operations could cause to the environment. For the NORI-D area, we have designed the most comprehensive seabed-to-surface research program ever conducted in the CCZ.

We acknowledge that some level of uncertainty will always remain regarding the impact that commercial-scale nodule collection may have on biodiversity and ecosystem function in the CCZ's abyssal seafloor and overlying water column. This uncertainty stems from the reality that a complete inventory of local and regional biodiversity is unlikely ever to be achieved – much like on land, where many species remain undescribed despite more than 250 years of taxonomic classification.

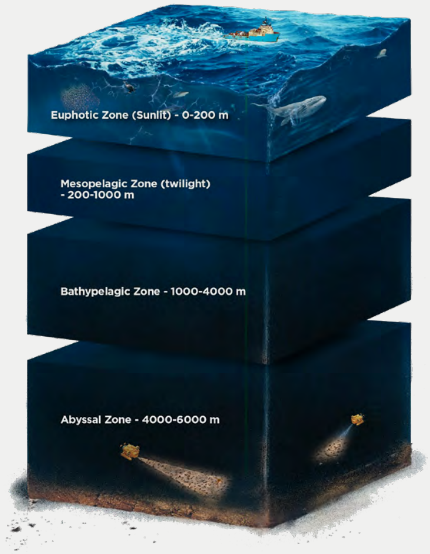
The robust scientific foundation we have established through this research program directly informs the development of our Environmental Management and Monitoring Plan (EMMP), the design of a mitigation plan, improvements to our equipment design, and adjustments to our collection operation plans.

Contribution to Science

Researchers participating in our ocean research program are contractually free to use and publish their findings without constraint from TMC. As of 31 December 2024, 10 academic papers based on data collected in the NORI contract area have already been published. We expect many more publications in peer-reviewed journals as we continue sharing the data gathered during our campaigns.

Our research program continues to advance scientific understanding of the deep-ocean ecosystem. For example, it contributes to insights on habitat connectivity and how it influences the distribution, function, and community structure of deep-sea organisms. The genetic material of these organisms could potentially inspire new medical treatments. More broadly, we see untapped potential in ocean research to advance science, medicine, and technology.

100+ Studies Seabed-to-Surface Ocean Research Program



Data for NORI-D's EIA was collected over 22 campaigns across 13 years, forming one of the largest deep-sea datasets to date. Independent, world-leading deep-sea research institutions have participated in our offshore campaigns and contributed to our environmental research program. They conducted over 100 individual studies to characterize the biota throughout the water column and determine how it is likely to respond to operational pressures.

SURFACE BIOLOGY
Surface fauna logbook (PelagOS)
Remote sensing, hydrophone acoustics

PELAGIC BIOLOGY
Microbial community characterization
Phytoplankton community characterization
Zooplankton community characterization
Gelatinous zooplankton characterization
Micronekton characterization
Trophic analysis (stable isotopes)
Temporal variability of pelagic communities
Trace element profiles in water column
Particulate profiles in water column
Discharge plume characterization (physical)
Discharge plume characterization (biological)
Midwater discharge (food webs particle composition)

BENTHIC BIOLOGY
Megafauna characterization (photo transects)
Megafauna characterization (time lapse)
Macrofauna characterization
Microfauna characterization
Mesofauna characterization

SEDIMENT ANALYSIS
Baited camera and traps
Benthic respiration and nutrient cycling
Seafloor metabolic activities
Bioturbation, sediment characteristics
Porewater sampling
Exposure toxicology studies
Metals determination by ICP analysis
Induction of gene transcripts (metals)

COLLECTOR IMPACT STUDIES
Metocean studies
Bathymetry (seabed mapping)
Habitat mapping
Database development
Digital twin development
Collector test near-field studies
Collector test far-field modeling
Plume modeling
Existing resource utilization study
Noise & light study
Meteorology & air quality study
Hazard & risk assessment
Emergency response planning
Cultural & historical resources
Waste management
Cumulative impacts

Environmental Impact Management

Offshore, environmental impacts will occur at different depths across three main zones – the surface, the open water column (pelagic zone), and the seafloor (benthic zone).

The primary environmental impacts of our operations would result from nodule removal, the benthic plume generated during seafloor collection, and the mid-water plume formed when seawater containing residual sediment and nodule fines is discharged into the water column after nodules are brought aboard the production vessel. The remoteness of the CCZ suggests that there would be few cumulative impacts from other human activities. Key impact drivers and mitigation measures are summarized below.

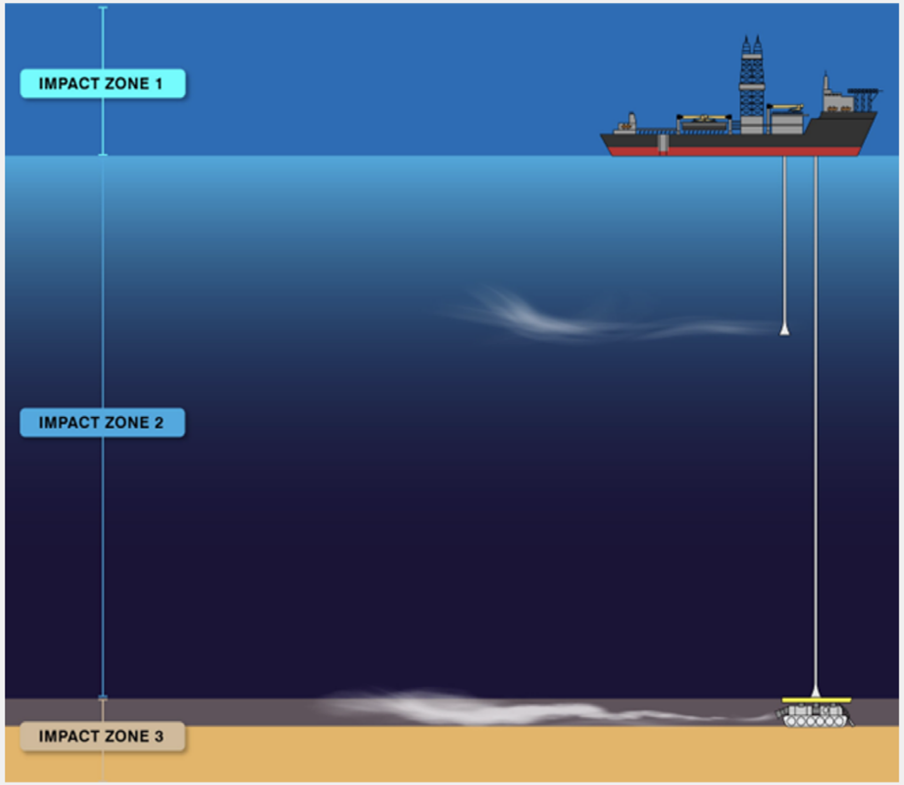
Biological and physical impacts of collecting nodules.

Impact Zone 1 - Surface
- Vessel emissions
- Noise

Impact Zone 2 - Pelagic
- Mid-water plume dispersal and characterization
- Trace metals / Ecotoxicology
- Acoustic modeling
- Phytoplankton community characterization
- Food web linkages (stable isotope analysis)

Impact Zone 3 - Benthic
- Physical and chemical disturbance of sediment
- Seafloor mapping (pre and post-disturbance)
- Fauna (mega, macro, meio, forams, micro)
- Sediment ecotoxicology
- Ecosystem function (benthic landers)
- Acoustics / Light

Courtesy of Allseas



1. Nodule removal

IMPACT:

Nodules provide hard-surface habitat for certain sessile invertebrates. Nodule collection will permanently remove most nodules along with the organisms attached to them. While some organisms rely on these hard substrates for essential life functions, many others live in the sediment itself.

MITIGATION ACTIONS:

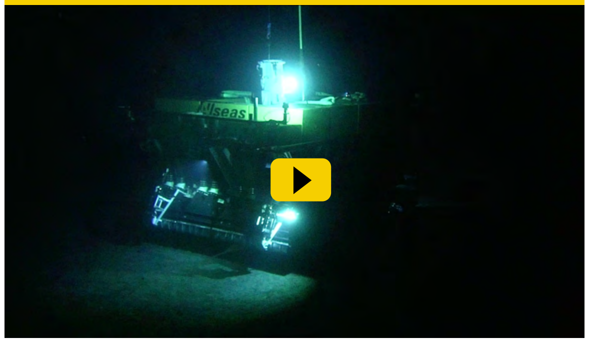
We continue researching the distribution of organisms living in the seabed sediment and on nodules to better understand the overall impact of nodule removal in the CCZ. To support ecosystem protection and facilitate repopulation, we expect that approximately 50% of nodules within NORI–D will remain after collection is complete. About 35% of these will be located in areas not traversed by the collectors, such as no-take zones (also known as Preservation Reference Zones), regions with steep topography, unfavorable bathymetric features, or gaps between collector runs. An additional 15% of nodules are expected to remain within the collector tracks after the equipment has passed. These figures may be revised as operational experience improves collector recovery rates or demonstrates that additional areas can be traversed without causing significant environmental impact. Areas of Particular Environmental Interest (APEIs) – seafloor regions never to be disturbed – have been designated to preserve habitat, covering a total of 1.97 million km^2 within the CCZ.[101]

2. Benthic plume

IMPACT:

As the collector vehicle moves across the seafloor, it disturbs and entrains a thin surface layer of sediment. Most of the entrained sediment is separated from the nodules and discharged back onto the seafloor within meters of its origin, generating a benthic plume. This plume may spread to surrounding areas, and fine particles can clog the feeding and respiratory structures of filter-feeding organisms. Sedimentation may also bury remaining nodules, making it difficult for animal larvae to attach.

During our 2022 nodule collection system trials, we partnered with DHI Water and Environment – experts in plume modelling – to implement a plume monitoring study. The team deployed over 50 assets and marine sensors across a 4 km × 2 km test field to collect data on plume dynamics, concentration, and dispersal. Based on this data, DHI developed a validated plume model.

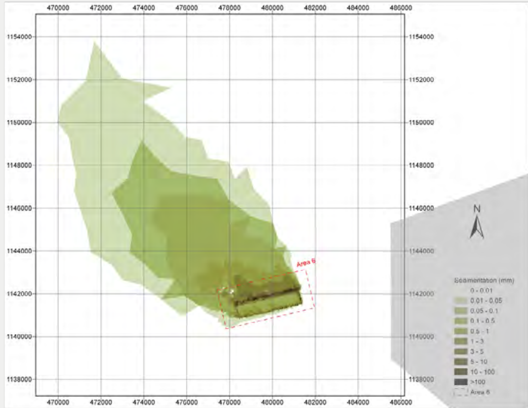


MITIGATION ACTIONS:

Building on in-field knowledge of plume behavior, we continue to explore mitigation strategies through adjustments to discharge parameters and nodule collection patterns, as well as methods to accelerate particle flocculation—thereby promoting faster sediment resettlement on the seabed.[106] We also draw on extensive expertise developed by the dredging industry over decades, applying insights on plume dynamics to design optimal parameters for reducing the benthic plume generated by the collector vehicle.

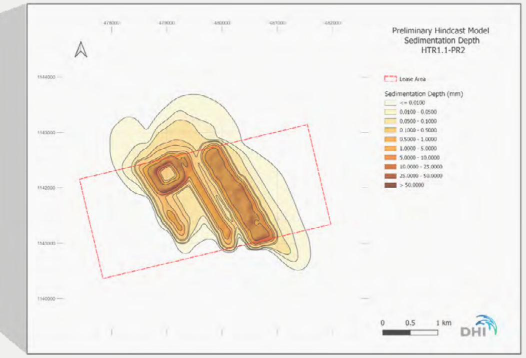
Findings Indicate a Smaller-than-Expected Plume Footprint

Initial models predicted that the plume would resettle within days and within a radius of 100 to 1,000 meters from the source. However, results from in-field pilot measurements (right-hand visual) show that the actual plume footprint was smaller than expected.



What the model got wrong

- Actual cut-depth was lower than assumed. As a result, the volume of resuspended sediments was significantly lower than assumed
- Sediment aggregation was fast leading to fast settling
- Currents were lower than assumed



From the pilot collection test, we observed heavy local plume deposition near the collector tracks, with most sediment resettling within hours to days within 500 meters of its origin. Ninety-five percent of sediment remained within 5-6 meters of the seafloor and settled within 1 km of the direct mining tracks.[102]

Plume Stays Localized

Actual Pilot Test Footage Showing Plume Stays Low

The results support earlier findings by MIT, based upon contractor GSR's own trials, which found that the sediment plume forms a gravity-driven turbidity current that hugs the seafloor and settles quickly,[103] and that 92–98% of the plume rose no more than 2 meters above the seafloor.[104] Peer-reviewed study co-author Thomas Peacock noted: *"It's quite a different picture of what these plumes look like, compared to some of the conjecture"*.[105]

3. Mid-water plume

IMPACT:

Nodules, seawater, and any residual sediment not separated within the collector vehicle enter the riser pipe and are transported to the surface vessel. Once aboard, a cyclone separator dewaters the nodules, and the transport seawater with residual sediment and nodule fines (from breakage during transit) is discharged back into the water column. This discharge forms a highly dilute mid-water plume.

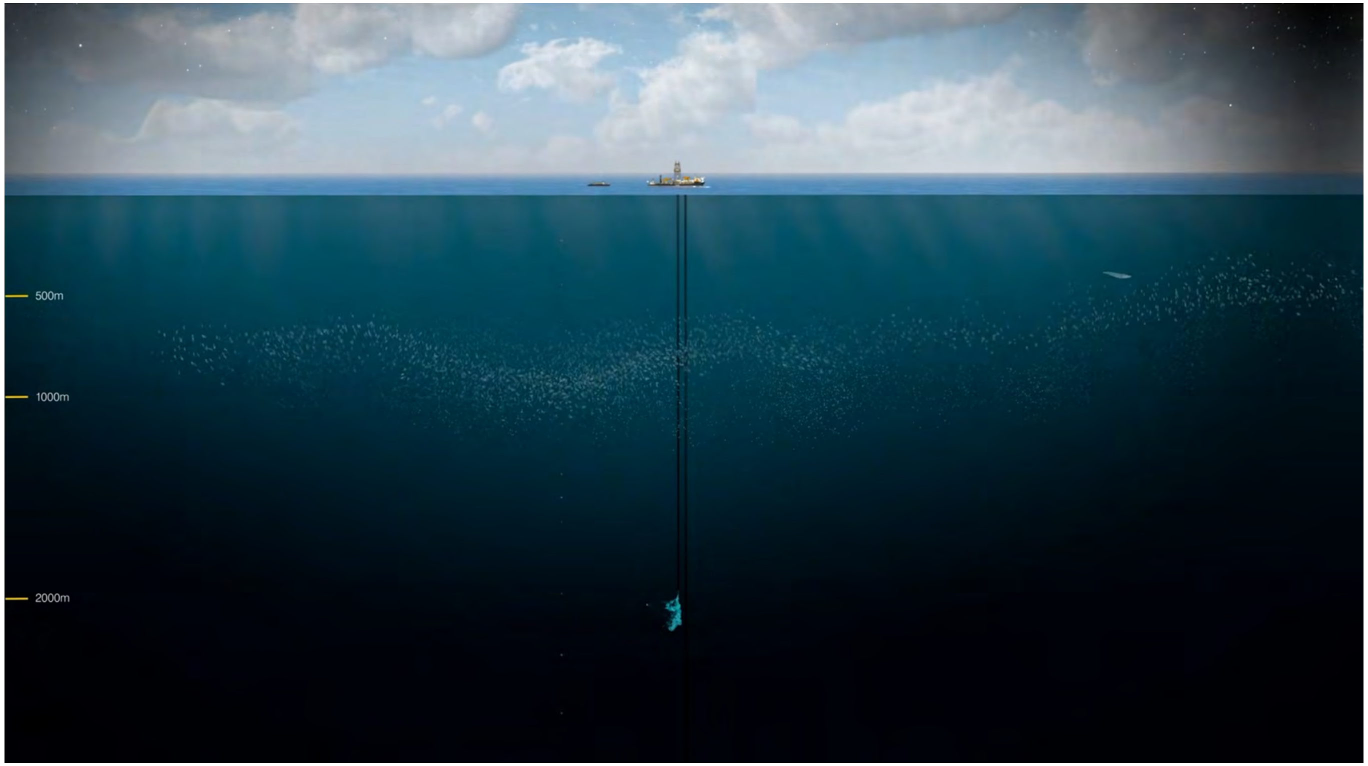
Key potential risks to the biotic environment from the mid-water plume include the clogging of respiratory and filter-feeding structures in pelagic nekton, as well as the remobilization of heavy metals and toxins previously sequestered in the sediment, potentially making them bioavailable and subject to accumulation in the food web.

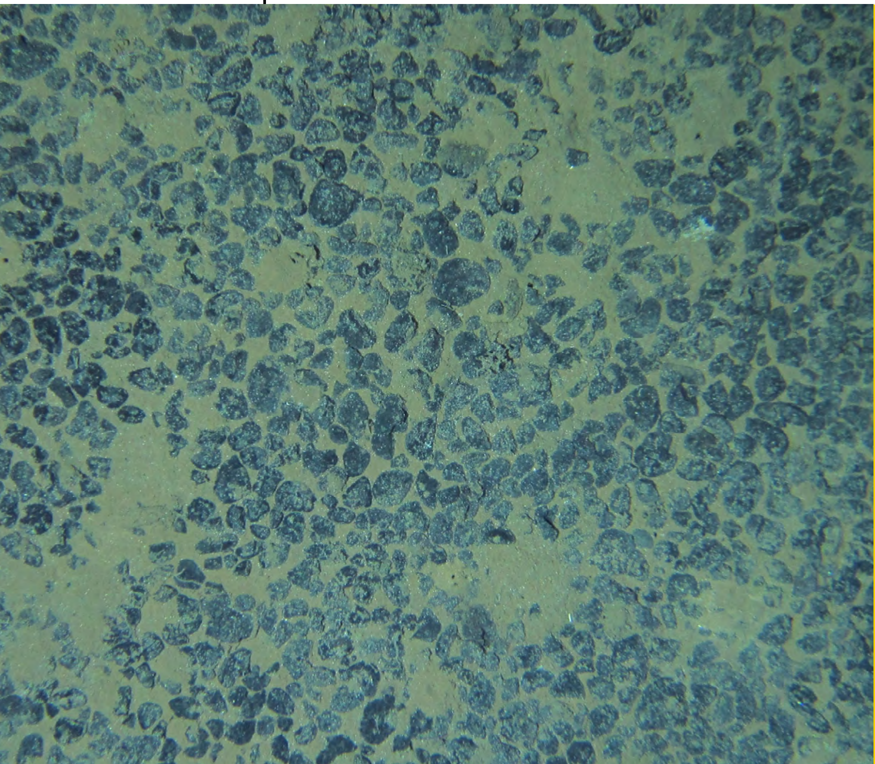
MITIGATION ACTION:

We will release midwater plume at a depth below the measured oxygen minimum zones to minimize disruption to marine life. Midwater plumes released at 2,000 meters below surface are unlikely to impact tuna fisheries and are expected to minimize the risk of metal bioaccumulation in the food web.[107]

Key Preliminary Findings from the 2022 Collection System Test

- Midwater plume particles flocculate and sink rapidly
- Plume concentration diluted to within natural range of background variation within 2 to 4 days and tens of kilometres
- Dissolved metals in midwater plumes dilute to natural range of background variation within 1.5 km of source





Minimizing Disturbance Through Engineering

We expect to be able to avoid **or minimize many operational impacts on the marine environment by refining the collection system design with environmental objectives in mind.** For example:

- **Using an adjustable collector head** to modulate the water jet used to lift nodules, thereby minimizing sediment disturbance and reducing the size of both benthic and mid-water plumes.
- **Discharge return water 2,000 meters below surface** to reduce impacts on the more biologically productive mesopelagic layer. Since most marine life inhabits the upper ocean layers, placing the discharge in the bathypelagic zone limits potential effects.
- **Applying operational parameters that minimize acoustic disturbance** to cetaceans that occasionally traverse this part of the CCZ and rely on sound for communication, navigation, and feeding (such as material selection and modifications to the position of the air injection point).

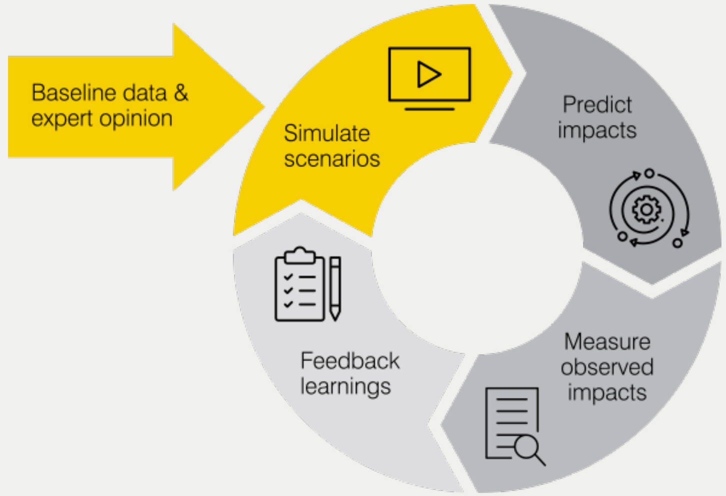
Adaptive Management System

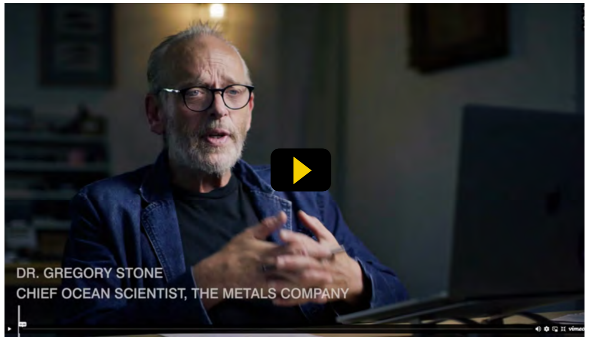
Beyond design improvements, we will fine-tune our operations using a state-of-the-art Adaptive Management System (AMS) with **three core objectives**:

1. **Enable continuous monitoring** ("eyes and ears") of operations in the deep-sea environment
2. Ensure and document **compliance with regulatory requirements**
3. Generate actionable insights to **avoid, minimize, and mitigate environmental impacts**

The AMS is a structured, iterative, and robust decision-making framework enabling us to simulate planned operational scenarios and predict their environmental impacts with increasing confidence over time, supported by continuous system monitoring and adjustments. Like guardrails on a highway, it will help ensure operations remain within specified environmental thresholds.

The AMS integrates key inputs – such as research findings, expert insights, and sensor data – into a simulation and prediction platform. This platform continuously updates a digital twin (i.e., a virtual representation) of the collector system and the deep-sea operational environment, enabling near real-time, data-driven decision-making. Owing to its iterative nature, the AMS's predictive capabilities will improve over time as more data enters the system.[108]

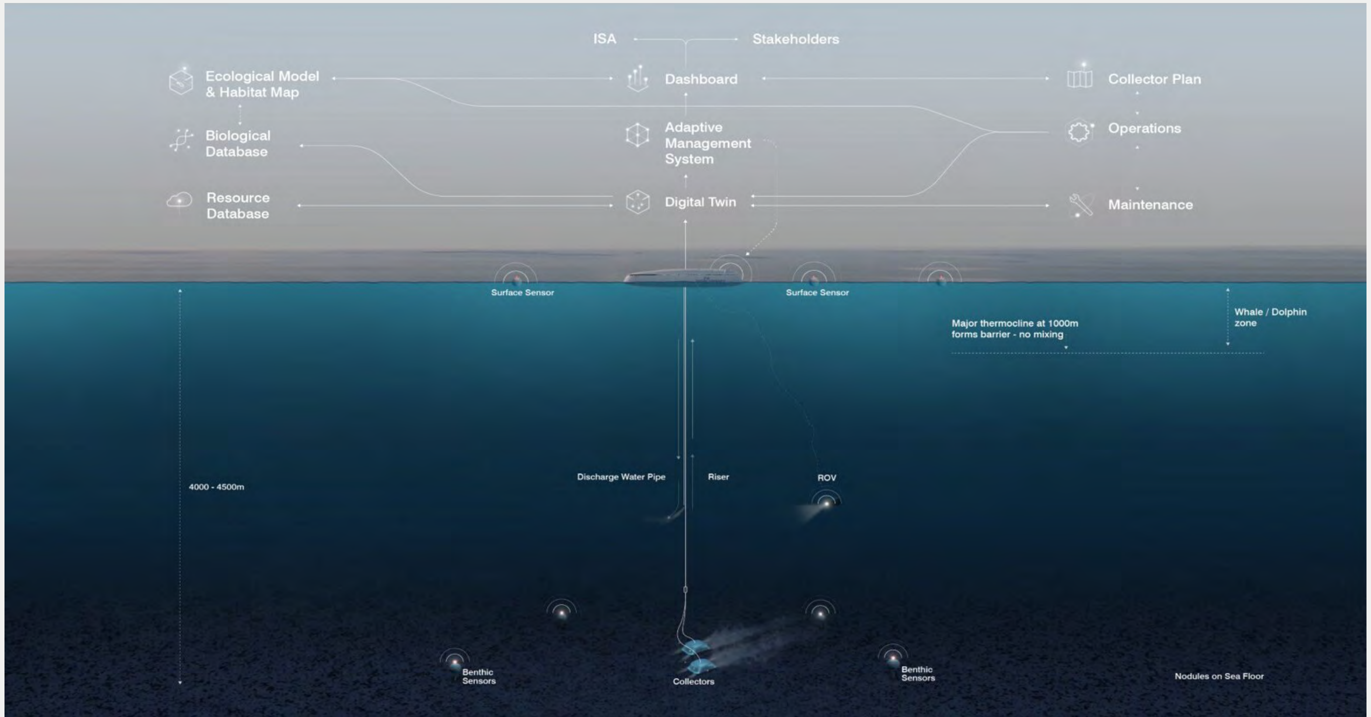




> The AMS and digital twin will offer unprecedented operational visibility to our stakeholders, enabling them to see exactly what we are doing, when, and where.

The digital twin allows us to track underwater robots and vehicles using data from a wide array of sensors. The system draws on models developed by environmental and data scientists to simulate future conditions and generate operational plans or contingencies. By applying environmental constraints and thresholds to mine planning, the digital twin will help optimize the environmental performance of operations. To power this core component of the AMS technology stack, we have partnered with Kongsberg Digital – a global leader in advanced systems for energy, maritime, defense, and aerospace sectors. Together, the AMS and digital twin will form the backbone of an integrated Environmental Management System (EMS).

Eyes and Ears of Our Operations in the Deep-Sea Environment



We tested the first iteration of the AMS and digital twin during the 2022 collection system trials. The system performed as expected, tracking equipment locations in near real time (e.g., vessel, collector, remotely operated vehicles, and riser), monitoring operational parameters (e.g., nodule pickup rate, riser flow rate, nodule conveyor rate, and total tonnage collected), and comparing the actual collector vehicle trajectory to the planned path. The next phase of our collaboration with Kongsberg Digital will integrate artificial intelligence (AI) and hybrid machine learning to further enhance system capabilities.

Through a dynamic, interactive 3D dashboard, stakeholders could visualize deep-sea operations in near real time. For example, the system might display the mine plan of a collector vehicle on the seafloor, along with the production vessel and an ROV operating synchronously over time. Hovering over the collector vehicle could reveal data such as speed, direction, depth, and efficiency metrics at any point in time. As part of TMC's commitment to transparency and accountability, we will share data from the AMS with researchers and academic institutions to advance global understanding of the ocean and support the conservation of deep-sea and connected ecosystems.

Comparative Life-Cycle Studies

To quantify the potential life-cycle environmental impacts of nodule-derived metals, we commissioned a series of studies to evaluate the associated impacts of TMC's planned operations and to compare them with those of major land-based production routes for the same metals. These studies quantify how energy-transition metals derived from the NORI-D project reduce most life-cycle environmental impacts compared to metals produced from conventional land-based ores. You can access these studies on TMC's life-cycle analysis webpage.

Findings from these LCA studies support our hypothesis that polymetallic nodules offer a promising pathway to supply critical metals with lower impact. Because these life-cycle benefits stem largely from polymetallic nodules' intrinsic properties, their location, and over a decade of technology development and testing, we have a reasonably high confidence in our ability to deliver these benefits.

As we approach commercial operations, we are able to provide higher-resolution data, improving the accuracy of the NORI-D LCA model. The granularity of terrestrial comparisons is also increasing as more detailed, site-specific data becomes available. In 2025, we published an updated comparative LCA.

Climate Change

TMC's mission includes supplying the critical minerals for the energy transition with the lowest impact to people and the planet. We are committed to transparently track and report our carbon footprint – and to systematically pursue a pathway to net-zero greenhouse gases (GHG) emissions as stated in our Climate Change Policy Statement.

To date, our carbon footprint has primarily resulted from the use of marine gas oil on our business partner's vessels during offshore exploration campaigns. Onshore technology development projects conducted at third-party facilities have also contributed a small portion. We take full accountability for the operational impacts of our exploration activities and report the corresponding emissions as our own in the Environmental Performance Data section.

Once commercial operations begin, offshore emissions will stem mainly from fuel consumption by vessels engaged in nodule collection, operations support, and nodule transport to shore. Vessels may also generate GHG emissions from occasional use of grid electricity supplied by port facilities while docked. Onshore, pyrometallurgical processing will represent the largest source of emissions. The primary contributor will be the use of bituminous coal as a reducing agent to produce Manganese Silicate (MnSi) and nickel–copper–cobalt (Ni/Cu/Co) alloy. Other significant emission sources include natural gas for process heat generation and electricity used by the rotary kiln electric furnace (RKEF).

Studying our impacts is central to our Sustainability Approach and informs the climate-related risks and opportunities register we started developing, which leverages TMC's Enterprise Risk Management (ERM) framework and aligns with TCFD recommendations. We assess climate-related transition risks and opportunities that could potentially have a material impact on TMC's value proposition and financial prospects in the short term (before 2030), medium term (from 2030 to 2040), and long term (from 2040 to 2070). We selected these horizons based on the expected timeline of our project development and the projected 30- to 50-year lifespan of offshore vessels and onshore facilities.

Although still in the exploration stage, we are actively identifying decarbonization levers and working to mitigate climate-related risks in line with our ambition to achieve net-zero emissions as soon as feasible. As we move toward commercial operations, we are collaborating with partners to evaluate technologies and opportunities that can help reduce future emissions. Access to clean energy is a top priority when evaluating potential onshore processing sites, as we aim to power metallurgical operations with low-carbon electricity and maximize process electrification to reduce our carbon footprint. Another key component of our onshore decarbonization strategy will be to minimize the use of metallurgical coal. During testing of our near-zero-waste process flowsheet, we identified opportunities to cut metallurgical coal consumption by at least 10% and evaluated alternative inputs to further reduce processing emissions. Other factors influencing site selection include proximity to markets, supplier networks, and transportation infrastructure, as well as exposure to physical climate-related risks such as extreme weather events, water scarcity, and sea-level rise. For offshore operations, we are working with our vessel provider and offshore system designer to explore maritime decarbonization strategies, including improving system efficiency and adopting alternative fuels.

Looking ahead, we aim to define measurable targets aligned with the Paris Agreement, develop decarbonization pathways to support our net-zero ambition, and continue assessing potential carbon offset initiatives.

Water

Offshore operations primarily rely on seawater, offering an opportunity to source critical minerals with minimal impact on freshwater availability and quality. Collector vehicles use seawater to lift nodules from the seafloor to the surface through a riser pipe. Once dewatered aboard the collector vessel, the residual water – containing small amounts of sediment and nodule fines – is discharged back into the ocean's water column. Seawater is also used onboard offshore vessels for various operational purposes, including cooling systems, ballasting, onboard desalination for freshwater production, and general washing and service needs. Occasionally, vessels load freshwater from port facilities to meet some of their water requirements – typically when they are docked and not permitted or able to operate onboard desalination systems.

During past campaigns, approximately 70% of water withdrawals for vessel operations was seawater, primarily used to produce freshwater for crew consumption. The remaining 30% was freshwater loaded at port facilities. Any water not consumed onboard – such as greywater, blackwater, and other operational wastewater – was treated in accordance with applicable regulations before being discharged at sea. Learn more in the Water Performance Data section.

Onshore operations will involve pyrometallurgical processing of nodules to produce intermediate metal products – a process that typically requires substantial volumes of water for cooling, dust suppression, and other industrial purposes. Operations may also involve hydrometallurgical refining, which similarly involves significant water usage.

To date, our onshore activities have had minimal impact on water resources, as we have remained focused on pilot-scale demonstrations of the first three metallurgical processing steps: calcination, smelting, and sulfidation/converting. As we progress toward commercial operations, we value our partner PAMCO's initiatives to reduce water withdrawals through recycling, to ensure treated discharges meet water quality standards, and to mitigate water-related risks – including those arising from natural disasters (e.g., typhoons, storms, tsunamis) and accidents (e.g., leaks involving water or chemical substances).[109] We continue to optimize our process flows and aim to implement closed-loop water systems to minimize freshwater intake.

Waste

Offshore operations primarily generate non-hazardous waste, in the form of domestic trash (e.g., food waste, plastic, glass, metal, paper and cardboards, etc.) and operational waste (e.g., scrap metal, textiles, packaging, wood, and used filters). These are typically handled through third-party treatment at port facilities and, where permitted and in accordance with applicable regulations, occasionally incinerated on board. To a lesser extent, vessels also generate some hazardous, operational waste (such as oily rags, used filters and other equipment maintenance waste, chemicals residues and containers, batteries, e-waste, or medical waste, among others). Hazardous waste requires adequate treatment and onboard capture and storage systems and is primarily handled at port facilities for third-party treatment.

For our future onshore operations, we achieved a key milestone by developing a near-zero solid-waste flowsheet that intentionally converts potential solid waste streams into usable by-products. The absence of toxic levels of deleterious elements in nodules enables full mass utilization, allowing us to produce a by-product aggregate instead of tailings. Our integrated pyrometallurgical-refinery approach also allows for the recycling of the relatively small residue stream from the refinery back into the smelter, thereby increasing metal recoveries – that is, the percentage of metal extracted from nodules relative to their actual metal content. We selected reagents for their ability to promote by-product generation over waste creation.

Our activities to date have generated relatively little waste, most of which was domestic waste from offshore campaigns. A small portion was processed onboard using a certified incinerator in compliance with applicable regulations, while the remainder was delivered to third-party processors during port calls. Onshore activities have produced minimal waste. Learn more in the Waste Data Performance section.

Social Approach

While environmental impact of the NORI-D project often receives the most attention, we are also conducting the first ever Social Impact Assessment (SIA) and a Cultural Heritage Impact Assessment (CHIA) for a deep-sea minerals project in international waters to identify and manage potential impacts on people, communities and cultural heritage assets.

Sourcing critical metals from CCZ polymetallic nodules resting on the seafloor would come with social impacts that differ significantly from those typically associated with land-based mining. These land-based operations, along with their extensive, long-term infrastructure developments, often create social and economic opportunities for local communities that the deep-sea mineral projects may not deliver to the same extent. However, they also frequently generate tensions – due to factors such as community displacement, pollution, competition for water and other local resources, and the disruption of traditional ways of life – which would not arise in a deep-sea mineral operations context. Nodule collection operations are likely to create fewer, but generally safer and higher-skilled jobs, and could potentially eliminate or mitigate many of the hazards associated with conventional land-based mining, including fatalities, injuries, illnesses, and disproportionate impacts on vulnerable populations.

Given NORI-D's remote location, we had to rethink how we assess social impact. We adopted a broad and inclusive approach and partnered with Prizma, an independent advisory firm specializing in environmental and social impact assessments. Prizma supported our efforts to evaluate the project's potential positive and negative impacts, engage with external stakeholders, and develop a management and monitoring plan for NORI's operational and social performance management systems.

We incorporate feedback from extensive stakeholder engagements and public consultations into the design of assessments and mitigation strategies. We also publish our environmental and social documentation, newsletters, and media updates that present how community input has informed decision-making. We expect to complete both the SIA and CHIA in 2025.

Preliminary Findings From NORI-D's SIA and CHIA

- **No direct negative impacts on communities are expected,** due to the project's remote location far from human settlements and proactive management efforts to address any perceived impacts on livelihoods form fisheries and local fishing.
- **No significant interference is anticipated with existing marine economic activities** (e.g., shipping, fishing, tourism, or subsea cable operations), given the project's remote location.
- **The NORI-D project is expected to provide socio-economic benefits,** including training and capacity-building opportunities for Nauru.
- **There is no indication of intersection with Indigenous rights or lands** that would trigger Free, Prior, and Informed Consent (FPIC) requirements under international frameworks.
- **No significant impacts on tangible cultural heritage have been identified** within the project's area of influence, and no intangible cultural heritage is considered to be at risk.

Fourteen stakeholder meetings were held in Nauru and Tonga over a 16-day period in July 2024 to share information about the CHIA for the NORI-D Project and to discuss potential tangible and intangible cultural heritage impacts.

We recognize that our operations and supply chain are not immune to potential human rights risks. Our Human Rights Policy, published in 2024, emphasizes the importance of open dialogue and stakeholder engagement in identifying and managing these risks.

People

TMC has purpose-driven team members who, together, focus on creating a hard-working, impact-driven culture with high tolerance for change, uncertainty, and adversity. As of 31 December 2024, we employed 47 employees and full-time consultants. Our team is distributed across several continents and time zones, and most staff work remotely as the norm. Collective bargaining agreements do not cover any TMC staff member. In addition, we work with over 250 partners and contractors. TMC's leadership team and, indeed, all our employees and consultants bring relevant professional backgrounds and diverse perspectives to the company.

Diversity and Inclusion

We are committed to attracting, developing, and retaining diverse talent across age, gender, gender identity, race, sexual orientation, physical ability, ethnicity, beliefs, and perspectives. Our highly skilled team includes 53% with post-graduate degrees, 28% women, and nearly 25% from ethnically diverse backgrounds. Read more in Our People Data Performance section.

We also support talent development in Nauru, Tonga, and in the broader Pacific region by engaging young professionals and funding science scholarships that help students develop skills to benefit society. For the third year in a row, all recipients of our discretionary scholarships and grants were nationals from developing countries. The offshore industry remains predominantly male. Empowering women and ensuring they feel safe and welcome in offshore work environments continues to be a key focus of our community development initiatives. Fifty-seven percents of scholarships recipients we supported in 2024 were women.

Compensation and Benefits

We strive to compensate our staff competitively. In addition to base salaries, our compensation and benefits program includes annual discretionary bonuses, equity awards, an employee stock purchase plan, a 401(k) contribution/superannuation or RRSP benefit contribution (as applicable), healthcare and insurance coverage, health savings accounts, and flexible spending accounts. Our annual equity compensation is aligned with company priorities that drive long-term stakeholder value.

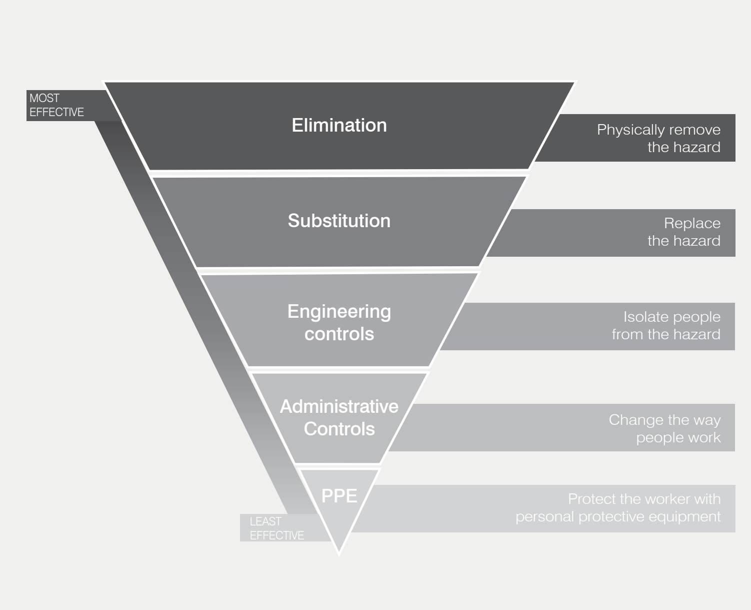
Health and Safety

We aim to protect people by ensuring the right policies and programs are in place to support their well-being. In 2024, we published TMC's Health and Safety Policy describing our approach and commitments underpinning our 'Zero-Harm' culture's goal to achieve zero incidents and zero injuries. To realize this ambition, we seek to leverage technology and our partner's expertise and shared commitment to ensuring the safety and wellbeing of everyone who works for and with us.

We select and develop technology that help us mitigate or eliminate people's exposure to safety risks. For instance, our offshore operations rely on autonomous robots to collect nodules and collector vehicles are brought to surface for maintenance activities, which eliminates people's exposure to underwater occupational risks. Onshore, our near-zero solid process waste flowsheet eliminates risks associated with waste management – which in the mining industry occasionally involves fatalities from tailings storage dam failures.

Residual risks that technology cannot eliminate must be carefully managed. Offshore maritime operations present health and safety risks stemming from both operational hazards (e.g., collision, or handling of heavy equipment) and the isolated nature of operations in the CCZ. For metallurgical operations, hazards are typical linked to handling high-temperature materials, exposure to hazardous substances, or operating heavy machinery. We work with our partners to manage these risks by implementing third-party verified environmental and health and safety (EHS) management systems aligned to ISO 14,001 and ISO 45,001 that incorporate thorough training, planning, risk assessment, and disciplined control implementation. For instance, our offshore nodule collection partner Allseas, provides an average of 27.5 hours of EHS training for every 1,000 man-hours worked.

We routinely collect health and safety performance data from organizations that perform work on our behalf. To date, we have recorded no lost-time injuries across any offshore exploration campaigns or onshore projects. The few incidents that have occurred were limited to minor first-aid cases. We are committed to investigating all incidents thoroughly and treating them as valuable learning opportunities to inform and improve future practices.



With our partners, we actively seek to use the control hierarchy to manage EHS risk for our people and the environment.

Community Development

The deep-sea minerals industry has the potential to create valuable opportunities in developing countries. We remain committed to continuing to support shared value creation through our community and social programs. Our pre-commercial community development program focusses on three main areas – training opportunities, scholarships, and community projects – that aim to generate long-lasting value for beneficiaries while creating positive spillovers for our subsidiaries, our stakeholders, and the industry as a whole.

Training Opportunities

Since 2011, we have supported a range of training opportunities – including at-sea trainings, participation in conferences and workshops, and scholarships – primarily for nationals of developing states. We voluntarily offer traineeships to nationals of Nauru and Tonga, recognizing the long-term value of cultivating a highly skilled talent pool. As TMC continues to grow, we remain committed to supporting initiatives that expand deep-sea knowledge and participation.

At-Sea Trainings

In 2023, we created opportunities for three offshore trainees from Nigeria, Tonga, and Nauru, to participate in our post-collector test research campaign 8b (C8b), which evaluated seafloor ecosystem function after the 2022 nodule collection test. The traineeship began with the completion of all required safety perquisites before going offshore in December 2023, and concluded in March 2024 with the end of the campaign. The trainees learned from distinguished engineers and scientists and gained hands-on experience in deep-sea exploration techniques – including operating Autonomous Underwater Vehicles (AUVs) and Remotely Operated Vehicles (ROVs), which are used for surveying and sampling the seafloor. They also received training in data acquisition and processing, as well as shipboard safety and operations.

Scholarships

At TMC, we prioritize support for educational opportunities and recognize the important role scholarships play in building capacity in developing nations. In addition to technical trainings, we continue to provide secondary school, undergraduate, and graduate scholarships, to foster education across a variety of fields, including science, technology, engineering, and mathematics (STEM), and to promote women's participation in these disciplines. We also offer pre-university scholarships, which we call "academic upgrading," delivered through the University of the South Pacific (USP). This program consists of eight foundational courses designed to equip students with the knowledge and skills needed to successfully progress to bachelor's degrees at USP or other universities worldwide. In 2024, we supported 11 academic upgrading and secondary school programs, along with 13 multiyear bachelor's degree scholarships – most of which were in the fields of science and education. Secondary school scholarships cover tuition costs, exam fees, school materials, and uniforms, while undergraduate scholarships cover tuition, accommodation, annual return airfare, university fees, books, a new laptop, and a living allowance for the duration of the three- or four-year programs.

Internships

In 2024, as in the previous year, TMC had an intern from the Environmental Defense Fund (EDF) Climate Fellows program to help us look into decarbonization pathways and conservation projects. In Tonga, TOML sponsored an internship for a recent graduate of TMC's scholarship program to gain practical work experience in their field of study.

After completing her bachelor's degree in marine science, Ms. Mele Matoto started a three-month internship in February 2024 at the Ministry of Lands, Survey, Planning & Natural resources as an Assistant Geologist. She was then offered a full-time position within one of the government's projects.

Ms. Matoto shared: *"This opportunity allowed me to gain firsthand experience in the professional work environment, helping me to better understand workplace culture. Additionally, it provided valuable practical insights that complemented my academic studies."*

Ms. Matoto at her graduation ceremony

Community Programs

Through our subsidiaries, NORI and TOML, we voluntarily support community-led initiatives in Nauru and Tonga that promote community development and well-being. The initiatives we support focus on key areas – often interconnected – including ocean health and the environment, education, women's empowerment, agriculture and food security, culture and traditions, healthy living, youth, and sanitation and water. In Tonga, we also established a special priority area to support disaster relief projects following the devastating earthquake and tsunami that occurred in 2022.

Nauru Community Assistance Grants

In 2024, NORI received 59 applications – 20% more than in 2023 – and funded 33 projects, that benefited an estimated 6,859 people in total. These included 26 new initiatives and seven multiyear projects with a proven track record of benefitting local communities.

Food Security & Agriculture

- NORI promoted sustainable farming by encouraging ornamental gardens to shift toward edible crops and partnering with the Nauru Farmers Association.
- Support was extended to pig and duck farming projects, vegetable farms (e.g., CACA Farm), and tree planting efforts, helping enhance local nutrition and agricultural sustainability.

Women's Empowerment & Health

- Initiatives such as Anibe Nibok and WENA focused on mental health, family relationships, and empowering women through workshops and life skills training.
- Programs also supported safe, inclusive fitness environments for women and provided education on traditional knowledge preservation.

Youth Engagement, Sports & Fitness

- Sports initiatives such as Anabar Amo Sports, BBHP (Basketball Health & Positivity), and "Bible/Basketball is Life" provided structured athletic programs, often with mentoring and spiritual guidance, to keep youth engaged and away from harmful influences.
- Community gyms (e.g., Buada Gym, Gareow Gym, Just Do It Gym) received funding for equipment to improve access and encourage physical activity, especially among women.

Education & Youth Development

- Funding was provided to schools (e.g., Anetan School PTA, Lovoni Baptist) for essential infrastructure like kitchen equipment and classroom furniture.
- The Seven Mango Tutor program and youth court upgrades improved learning and recreational opportunities in underserved districts.

Water Access & Infrastructure

- Projects in Buada, Ijuw, and Atta-One focused on brackish water well rehabilitation, desalination, and rainwater harvesting to address water scarcity.
- Entrepreneurs received support to expand water access for both domestic and agricultural use.

Traditional Knowledge & Livelihoods

- Projects like the Anetan Culture and Way of Life and ULIA Craft emphasized heritage preservation through fishing, bird hunting, and artisanal skills.
- Survival skills and fishing safety training were supported through gear provision and workshops for youth and fishing communities.

Tonga Community Assistance Grants

In 2024, TOML received 223 applications – 18% more than in 2023 – and funded 35 projects that benefited an estimated 15,468 people in total. These included 3 multiyear projects with a proven track record of benefitting local communities. Key areas of impact included:

Ocean Health & the Environment

- Community groups in Mataika and Navutoka received support for village and beach clean-up efforts, including rubbish bins and cleaning equipment.
- Solar-powered streetlights were installed on Siesia Island to improve nighttime visibility and enhance safety.

Food Security & Agriculture

- Support was provided for community-based farming projects, including fruit and vegetable gardens (Popua) and cluster yam cultivation (Folaha).
- Livestock initiatives in Tatakamotonga, Neiafu, and Folaha focused on improving animal health and containment through pig feed processing equipment and the construction of secure pigsties.

Healthy Living

- Projects included water system upgrades in Fahefa and Hoi, school bathroom renovations in Niutoua, a holiday celebration for individuals with disabilities, a netball tournament, and youth engagement activities led by the Tonga National Rugby League.
- TOML also co-funded the Under-17 Women's Rugby League Cup 2024 in partnership with the Tonga National Rugby League, a tournament that brought together six girls' teams and supported the growing participation of women in rugby.

Women's Empowerment

- Sewing initiatives in Houma and Niutu'utolu provided training and equipment to help women generate income and meet household needs.
- Women's groups in Lapaha, Atata Si'i, and Mapelu were supported in traditional weaving and tapa-making, promoting both income generation and cultural preservation.
- Business, crafts, and computing workshops were funded to strengthen women's skills and economic independence.

Youth Initiatives

- Launched to address drug prevention and youth development, this new program reached over 2,500 young people through workshops, peer engagement, and sports.
- Key initiatives included outreach by Christ University of the Pacific (2,000 students), a youth camp by St. Anthony of Padua (60 youth), and a rugby-based awareness campaign by Ha'apai Warrior Rugby (500 participants).

Christmas Initiative: "Bring Joy to a Child"

- Nearly 100 individuals with disabilities and their caregivers were celebrated through a heartfelt holiday event organized in partnership with the non-profit organization Kalapu Fofo'anga.

Scope and Reporting Boundaries

We present information for The Metals Company (TMC) and its consolidated subsidiaries, covering exploration activities from 2012 through 31 December 2024. We prepared this report using the Global Reporting Initiative (GRI) Standards as guidance. In addition, we incorporated recommendations from other ESG disclosure frameworks that TMC supports, such as the Task Force on Climate-related Financial Disclosures (TCFD) and the Sustainability Accounting Standards Board (SASB) standards for the metals and mining sector and the marine transportation sector.

As detailed in this report, we have primarily relied on business partners for the majority of operations to date. Our direct impacts on people and nature have so far been limited to offshore exploration campaigns—including impacts from three offshore campaigns conducted by TOML prior to TMC's acquisition of the company in 2020, as well as technology development and testing efforts supporting both nodule collection and metallurgical operations—activities carried out by our partners at their own facilities. While we have limited operational control over these activities, we uphold our responsibilities to transparently assess and report the full stack of our impacts on planetary boundaries and social foundations. This approach reflects our broader goal: to generate a net positive impact on both people and the planet. Please note that due to rounding, totals may occasionally differ from the sum of individual figures.

Environmental Performance Data

Climate Change

TMC – Energy Consumption

Energy Consumption	2020	2021	2022	2023	2024
Total Energy Consumption (GJ)	**138,845**	**157,123**	**425,991**	**242,877**	**154,617**
Fuels (GJ)	**138,845**	**157,033**	**425,991**	**242,877**	**149,363**
Coal (GJ)	189	0	0	0	5,955
Marine Gas Oil (GJ)	138,586	157,033	425,991	242,877	143,409
Natural Gas (GJ)	70	0	0	0	0
Electricity (GJ)	**0**	**90**	**0**	**0**	**5,253**
From Grid (GJ)	0	90	0	0	5,253
Percentage From Grid (%)	0.0	0.1	0.0	0.0	3.4

Offshore Operations – Energy Consumption

Year	Campaign Name	Marine Gas Oil (MGO) (GJ)	Electricity (GJ)	Total Energy (GJ)
2012	Campaign 1	8,560	0	8,560
2013	Campaign 2 and CCZ13	12,027	0	12,027
2015	CCZ15	33,042	0	33,042
2017	CCZ17	2,397	0	2,397
2018	Campaign 3	66,297	0	66,297
2019	Campaign 4a	15,708	0	15,708
	Campaign 6a	30,174	0	30,174
	Campaign 6b and Marawa	21,100	0	21,100
2020	Campaign 4b	26,750	0	26,750
	Campaign 4c	37,322	0	37,322
	Campaign 4d	29,703	0	29,703
	Campaign 5a	36,209	0	36,209
	OI	8,603	0	8,603
2021	Campaign 4e	16,478	0	16,478
	Campaign 5b	44,512	0	44,512
	Campaign 5c	33,726	0	33,726
	Campaign 5d	26,365	0	26,365
	Campaign 5e	35,952	0	35,952
2022	Pre-Collection Test	263,138	0	263,138
	Campaign 7a1	23,894	0	23,894
	Campaign 7a2	15,411	0	15,411
	Campaign 7c	92,264	0	92,264
	Campaign 7b1	15,717	0	15,717
	Campaign 7b2	15,566	0	15,566
2023	Campaign 8a	14,184	0	14,184
	Hidden Gem 2023	228,693	0	228,693
2024	Campaign 8b	27,295	0	27,295
	Hidden Gem 2024	116,113	5,253	121,367
Total		**1,297,200**	**5,253**	**1,302,453**

Footnotes:

1. Limited data was available for Campaign 1 and MGO consumption was estimated based on data for Campaign 2.
2. In 2022, a supply vessel from Allseas that was conducting activities in the region made a detour to deliver equipment to the *Hidden Gem*. We conservatively calculated the associated fuel consumption and added them to Campaign 7c.

Onshore Operations – Energy Consumption

Year	Coal (GJ)	Natural Gas (GJ)	Electricity (GJ)	Total Energy Consumption (GJ)
2020	189	70	0	259
2021	0	0	90	90
2022	0	0	0	0
2023	0	0	0	0
2024	5,955	0	0	5,955
Total	**6,143**	**70**	**90**	**6,304**

TMC – GHG Emissions

TMC	2020 (tCO_2e)	2021 (tCO_2e)	2022 (tCO_2e)	2023 (tCO_2e)	2024 (tCO_2e)
Gross Operational Emissions	**10,547**	**11,924**	**32,347**	**18,416**	**12,124**
Scope 1 Emissions	10,547	11,924	32,347	18,416	11,524
Scope 2 Emissions	0	0	0	0	600
Gross Value Chain Emissions	**2,773**	**3,182**	**9,879**	**4,769**	**3,655**
Fuel-Related Activities	2,412	2,729	7,403	4,221	2,594
Business Travel	361	453	2,476	548	1,060

Footnotes:
1. We report Scope 1 and Scope 2 GHG emissions from TMC-related operations conducted by our onshore and offshore contractors as part of TMC's Scope 1 and Scope 2 emissions, using the GHG Protocol's operational control approach.
2. To calculate GHG emissions, we have used emission factors from the United Kingdom's Department for Environment, Food, and Rural Affairs (DEFRA).
3. Scope 2 emissions are calculated using the location-based method.
4. We estimate and report air travel emissions from offshore campaigns participants, whether TMC employees or contractors, as scope 3 emissions.
5. Given our small, primarily remote workforce and the limited activities conducted directly by TMC and its subsidiaries, we consider other emission types to be immaterial at this stage of our development.
6. These footnotes apply to other GHG emissions tables below.

Offshore Operations — GHG Emissions

Year	Campaign Name	Scope 1	Scope 2	Scope 3		Total GHG Emissions
		MGO Consumption	Electricity Consumption	Fuel-related activities	Air Travel	
		(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)
2012	Campaign 1	650	0	148.77	110	909
2013	Campaign 2 and CCZ13	913	0	209	110	1,232
2015	CCZ15	2,509	0	574	213	3,296
2017	CCZ17	182	0	42	-	224
2018	Campaign 3	5,034	0	1,152	76	6,262
2019	Campaign 4a	1,193	0	273	69	1,535
	Campaign 6a	2,291	0	524	117	2,933
	Campaign 6b and Marawa	1,602	0	367	122	2,091
2020	Campaign 4b	2,031	0	465	91	2,587
	Campaign 4c	2,834	0	649	94	3,577
	Campaign 4d	2,255	0	516	62	2,834
	Campaign 5a	2,749	0	629	114	3,494
	OI	653	0	150	-	803
2021	Campaign 4e	1,251	0	286	57	1,595
	Campaign 5b	3,380	0	774	90	4,244
	Campaign 5c	2,561	0	586	83	3,230
	Campaign 5d	2,002	0	458	114	2,574
	Campaign 5e	2,730	0	625	109	3,464
2022	Pre-Collection Test	19,981	0	4,573	1,587	26,141
	Campaign 7a1	1,814	0	415	189	2,418
	Campaign 7a2	1,170	0	268	63	1,501
	Campaign 7c	7,006	0	1,604	460	9,070
	Campaign 7b1	1,193	0	273	50	1,517
	Campaign 7b2	1,182	0	271	127	1,580
2023	Campaign 8a	1,075	0	246	161	1,483
	Hidden Gem 2023	17,341	0	3,974	387	21,702
2024	Campaign 8b	2,070	0	475	82	2,626
	Hidden Gem 2024	8,804	600	2,018	925	12,348
Total		**98,457**	**600**	**22,545**	**5,662**	**127,264**

Footnotes:
1. The footnotes provided in the first table of the GHG section also apply to this table.
2. In two instances, TMC leveraged vessels already transiting through the CCZ by contracting them for short-term use: once in 2020 for a photographic survey, and once in 2017 to deploy moorings. We estimated fuel usage for these instances, as well as for Campaign 1, to calculate the corresponding GHG emissions.
3. GHG emissions were notably higher in 2022 due to the pilot collection test conducted in the CCZ. This involved over 250 personnel aboard two vessels, operating for a total of 426 days and covering nearly 31,000 nautical miles—substantially more than in any other year. We also report the footprint of pre-collection test activities, including conversion work on the *Hidden Gem*, a deep-water collector vehicle test in the Atlantic Ocean, and the *Hidden Gem's* transit from Europe to the Campaign 7c departure point. In addition, a supply vessel from Allseas that was operating in the region made a detour to deliver equipment to the *Hidden Gem*. We conservatively estimated the associated GHG emissions from fuel consumption and included them in the footprint of Campaign 7c.

Onshore Operations — GHG Emissions

Year	Scope 1		Scope 2	Scope 3		Total GHG Emissions
	Coal Consumption	Natural Gas Consumption	Electricity Consumption	Fuel-Related Activities	Air Travel	
	(tCO2e)	(tCO2e)	(tCO2e)	(tCO2e)	(tCO2e)	(tCO2e)
2020	21	4	0	4	-	28
2021	0	0	0	0	-	0
2022	0	0	0	0	-	0
2023	0	0	0	0	-	0
2024	650	0	0	102	53	805
Total	**671**	**4**	**0**	**106**	**53**	**834**

Footnotes
1. The footnotes provided in the first table of the GHG section also apply to this table.
2. Air travel emissions were estimated for onshore operations personnel from TMC.

Air Pollution

TMC	2020 (metric tonne)	2021 (metric tonne)	2022 (metric tonne)	2023 (metric tonne)	2024 (metric tonne)
CO	-	-	-	10.2	5.2
SO_X	-	-	27.3	10.4	5.8
NO_X	-	-	140.2	54.7	56.6
Volatile Organic Compound (VOCs)	-	-	15.8	-	-

Footnotes
1. SO_X includes SO_2 and SO_3
2. NO_X Includes NO and NO_2, but excludes N_2O

Water

TMC — Water Withdrawals and Discharges

TMC	2020 (m^3)	2021 (m^3)	2022 (m^3)	2023 (m^3)	2024 (m^3)
Water Withdrawals	2,417	3,056	12,780	5,846	4,274
Other Water (>1,000 mg/L Total Dissolved Solids)	1,277	1,884	10,584	5,845	1,044
Seawater	1,277	1,884	10,584	5,845	1,044
Freshwater (≤1,000 mg/L Total Dissolved Solids)	1,140	1,172	2,196	1	3,230
Third-party Water	1,140	1,172	2,196	1	3,230
Water Discharges	49	492	8,072	5,297	5,421
Other Water (>1,000 mg/L Total Dissolved Solids)	47	492	8,072	5,296	5,421
Seawater	47	492	8,072	5,296	5,421
Freshwater (≤1,000 mg/L Total Dissolved Solids)	2	0	1	1	0
Third-party Water	2	0	1	1	0

Footnotes:
1. The table does not include seawater withdrawals for nodule collection during the 2022 pilot test.
2. Seawater withdrawals were primarily used to produce freshwater onboard via the vessel's desalination system and to support general vessel operations.

Offshore Operations — Water Withdrawals and Discharges

Offshore	Campaign Name	Withdrawals: Freshwater bunkered at port (m3)	Withdrawals: Seawater for vessel operations (m3)	Discharges (m3)
2012	Campaign 1	LR	LR	LR
2013	Campaign 2 and CCZ13	LR	LR	LR
2015	CCZ15	LR	LR	LR
2017	CCZ17	NA	NA	NA
2018	Campaign 3	498	336	18
2019	Campaign 4a	109	99	0
	Campaign 6a	533	465	22
	Campaign 6b and Marawa	312	315	4

2020	Campaign 4b	172	233	13
	Campaign 4c	298	336	8
	Campaign 4d	110	102	8
	Campaign 5a	558	606	18
	OI	NA	NA	NA
2021	Campaign 4e	149	126	14
	Campaign 5b	398	449	7
	Campaign 5c	150	370	237
	Campaign 5d	475	457	24
	Campaign 5e	0	482	210
2022	Pre-Collection Test	1,389	5,174	5,009
	Campaign 7a1	0	525	34
	Campaign 7a2	0	598	39
	Campaign 7c	806	3,003	2,906
	Campaign 7b1	0	642	42
	Campaign 7b2	0	642	42
2023	Campaign 8a	0	653	620
	Hidden Gem 2023	0	5,192	4,676
2024	Campaign 8b	0	1044	992
	Hidden Gem 2024	3140	0	4,339
Total		**9,097**	**21,849**	**19,280**

Footnotes:
1. NA: Not applicable. Vessel was already fully staffed traveling through the CCZ
2. LR: Limited records
3. Discharges primarily consist of treated greywater and blackwater released at sea.
4. Campaign 7C: Figures do not include seawater withdrawals for nodule collection during the 2022 pilot test.

Onshore Operations – Water Withdrawals and Discharges

Onshore	2020 (m3)	2021 (m3)	2022 (m3)	2023 (m3)	2024 (m3)
Water Withdrawn	2	0	1	1	90
Water Discharged	2	0	1	1	90
Water Consumed	0	0	0	0	0

Footnotes:
1. Water withdrawn primarily consists of freshwater supplied by third parties.
2. Water discharged primarily consists of freshwater used in operations, treated in compliance with applicable regulations prior to discharge.

TMC – Waste Generated

TMC	2020 (tonnes)	2021 (tonnes)	2022 (tonnes)	2023 (tonnes)	2024 (tonnes)
TOTAL WASTE GENERATED	**82**	**105**	**184**	**52**	**182**
Non-Hazardous Waste	80	103	162	40	168
Food Waste Discharged at Sea	-	-	0.7%	0%	0%
Disposed of Through Third-Party	-	-	85.4%	100%	100%
Incinerated Onsite	-	-	13.9%	0%	0%
Hazardous Waste	2	2	23	12	14
Disposed of Through Third-Party	-	-	94.7%	100%	100%
Incinerated Onsite	-	-	5.3%	0%	0%

Footnotes:
1. Non-hazardous waste disposed through third-party mostly includes paper, glass, metals and other types of residual waste.
2. Non-hazardous waste incinerated onsite primarily includes food waste, packaging, and other types of residual waste incinerated on vessels.
3. Hazardous waste disposed of through third-party primarily includes e-waste, incinerator ashes, batteries, and plastic.
4. Hazardous waste incinerated onsite primarily includes operational waste (e.g. oily rags and filters) incinerated on vessel in compliance with MARPOL regulations.

Offshore Operations – Waste Generated

Offshore Waste Generated	Campaign Name	Non-Hazardous Waste (tonnes)	Hazardous Waste (tonnes)
2012	Campaign 1	LR	LR
2013	Campaign 2 and CCZ13	LR	LR
2015	CCZ15	LR	LR
2017	CCZ17	NA	NA
2018	Campaign 3	15	0.4
2019	Campaign 4a	7	0.4
	Campaign 6a	19	0.4
	Campaign 6b and Marawa	13	0.4
2020	Campaign 4b	25	0.4
	Campaign 4c	19	0.4
	Campaign 4d	13	0.4
	Campaign 5a	20	0.4
	OI	NA	NA

2021	Campaign 4e	18	0.4
	Campaign 5b	22	0.4
	Campaign 5c	18	0.4
	Campaign 5d	25	0.4
	Campaign 5e	20	0.4
2022	Pre-Collection Test	79.9	13.2
	Campaign 7a1	14.2	1.6
	Campaign 7a2	6.9	0.9
	Campaign 7c	46.4	4.7
	Campaign 7b1	6.6	1.1
	Campaign 7b2	7.8	1.2
2023	Campaign 8a	6.4	0.7
	Hidden Gem 2023	33.8	11.3
2024	Campaign 8b	5	0
	Hidden Gem 2024	163	14
Total		**604**	**54**

Footnotes:
1. NA and LR refer to *"Not Applicable"* and *"Limited Record"*, respectively.
2. For campaigns completed prior to 2022, our vessel contractor provided a conservative estimate of 0.4 tonnes per campaign.
3. Figures represent the total mass of waste generated prior to incineration or offloading at port.
4. Hazardous waste primarily includes cooking oil, incinerator ash, e-waste, and operational waste such as rags, filters, and paint waste.

Onshore Operations – Waste Generated

Waste Type	**2020** (tonnes)	**2021** (tonnes)	**2022** (tonnes)	**2023** (tonnes)	**2024** (tonnes)
Non-Hazardous Waste	3	0	0	0	**0**
Hazardous Waste	0	0	0	0	**0**

Social Performance Data

Our People

Executive Management Composition by Gender

TMC (as of 31 Dec. of each year)	**2022**	**2023**	**2024**
Total Number of People	8	8	8
Number of Male	6	6	6
Percentage of Male	75%	75%	75%
Number of Female	2	2	2
Percentage of Female	25%	25%	25%

Footnotes:

1. We define executive management as the CEO plus Officers
2. Scope: TMC plus wholly owned subsidiaries NORI and TOML

Workforce Diversity and Inclusion

Diversity Metrics	**2020**	**2021**	**2022**	**2023**	**2024**
Total Employees & Consultants	20	32	39	46	47
New Hires & Turnover					
New hires	-	-	11	9	8
Turnover	-	-	5%	4%	8%
Gender Breakdown					
Men	90%	69%	77%	74%	72%
Women	10%	31%	23%	26%	28%
Generation Breakdown					
1997 – 2012 | Gen Z	-	-	2%	2%	2%
1981 – 1996 | Millennials	-	-	41%	50%	55%
1965 – 1980 | Gen X	-	-	49%	42%	37%
1946 – 1964 | Boomers	-	-	7%	6%	6%
Education Breakdown					
People with a Master's Degree or Higher	-	-	61%	56%	53%
Location Breakdown					
North America	-	-	44%	38%	35%

Asia	-	-	7%	6%	4%
Europe	-	-	12%	13%	16%
Oceania	-	-	37%	44%	43%
South America	-	-	0%	0%	2%
Ethnic Background					
Ethnic Diversity	25%	32%	29%	29%	25%
Prefer Not to Say	-	-	-	-	12%

Footnotes:
1. Scope includes TMC and its wholly owned subsidiaries NORI and TOML
2. Data is reported as of December 31 for each year
3. Ethnic diversity refers to individuals who self-identify as belonging to an ethnic diversity group (i.e., those connected with or relating to a different cultural background or place of origin). For our reporting, this includes individuals from Middle Eastern, Pacific Islander, African, Hispanic, and Asian backgrounds.

Health and Safety

	2018	2019	2020	2021	2022	2023	2024
Contractor Hours	26,317	45,814	96,160	663,724	743,294	218,804	269,287
Lagging Statistics							
Fatalities	0	0	0	0	0	0	0
Fatality Rate	0	0	0	0	0	0	0
Lost-Time Incidents	0	0	0	0	0	0	0
Lost Time Incident Rate (LTIR)	0	0	0	0	0	0	0
Medical Treatment Cases	0	0	0	2	2	0	4
First-Aid Cases	1	1	3	2	4	1	1
Environmental Incidents	0	0	0	2	1	0	0
Security Incidents	1	0	0	1	0	1	0
Lost Time Injury Frequency Rate (LTIFR)	0	0	0	0	0	0	0
Near Misses	-	-	-	-	-	0	1
Behavioral Statistics							
Hazard Identification and Risk Assessments (HIRAs) Completed	1	3	10	17	753	88	49
Drills	6	9	8	13	154	144	133
Inductions	50	73	80	152	215	30	0
Safety Observations	633	3,136	5,801	16,047	753	121	28
Stop Work Authority Used	19	0	18	40	1	0	0
Job Safety Analysis	275	25	22	44	6,635	4	2

Footnotes:
1. Contractor Hours Worked include the total hours contributed by our partners and contractors across both onshore and offshore operations. Please note that the previously reported figure of 249,683 hours for 2023 was incorrect and has been updated to reflect the accurate total of 218,804 hours.
2. All lagging and behavioral performance statistics relate specifically to our partners and contractors.
3. Toolbox talks and drills are part of our routine activities to reinforce awareness of sound environmental, health, and safety risk management in the workplace.
4. Safety observations and Stop Work obligations are preventive measures intended to ensure that work proceeds only when it is safe to do so.
5. The fatality rate is calculated as the number of work-related fatalities divided by total hours worked, then multiplied by 200,000 hours.
6. LTIR (Lost Time Incident Rate) is calculated as: (Number of lost time incidents × 200,000) ÷ Total hours worked
7. A near-miss is a potential hazard or incident in which no property was damaged and no personal injury was sustained, but where, given a slight shift in time or position, damage or injury could have occurred.

Community Development

Trainings Opportunities

TMC	2020	2021	2022	2023	2024
Total Number of Trainings and Scholarships Started During the Year	**22**	**17**	**24**	**37**	**25**
Vocational Trainings	**16**	**8**	**4**	**7**	**1**
Internships	0	0	0	1	1
At-sea Trainings	11	8	4	3	0
Workshops / Courses	5	0	0	3	0
Developing States Capacity Building	**0**	**0**	**2**	**0**	**0**
Scholarships	**6**	**9**	**18**	**30**	**24**
Secondary School / Academic Upgrading	0	4	9	17	11
Trades	6	4	0	0	0
Bachelor's Degree	0	1	8	13	13
Postgraduate Degree	0	0	1	0	0
Breakdown by Educational Field					
Engineering	0%	0%	8%	5%	12%
Environmental Studies	73%	47%	21%	19%	4%
Law	0%	0%	0%	0%	4%
Geology	0%	0%	4%	0%	0%
Marine Studies	0%	0%	29%	14%	8%
Science	0%	29%	17%	35%	24%
Education	0%	0%	0%	0%	16%
Business	0%	0%	0%	0%	4%
Trades	27%	24%	0%	0%	0%
Interdisciplinary	0%	0%	21%	27%	28%

Breakdown of Beneficiaries by Gender and Origin					
Male	50%	35%	42%	49%	40%
Female	50%	65%	58%	51%	60%
From Developed Countries	41%	6%	0%	0%	0%
From Developing Countries	59%	94%	100%	100%	100%

Footnotes:
1. Programs are included in the year they started, regardless of their end date.
2. "Capacity Building" refers to training programs offered to representatives of the Republic of Nauru and the Kingdom of Tonga.
3. "Interdisciplinary" refers to programs at the pre-university level.

Community Projects

TMC	2022	2023	2024
Total Number of Grants Awarded	**40**	**43**	**68**
NORI	13	22	33
TOML	27	21	35
Priority Areas (% of Total Number of Projects Funded)			
Agriculture & Food Security	13%	19%	16%
Culture & Traditions	0%	2%	7%
Education	13%	29%	9%
Healthy Living	8%	5%	15%
Ocean Health & the Environment	15%	12%	6%
Sanitation & Water	5%	5%	6%
Women Empowerment	20%	14%	19%
Disaster Assistance	23%	0%	0%
Youth	5%	14%	22%
Total Estimated Number of People Benefitted	**19,690**	**4,768**	**22,327**

Footnotes:
1. Projects are recorded for the year when funding was awarded, which may occasionally differ from the project’s start year and end year.
2. We updated our methodology to estimate the number of people benefited and we now report this figure for the year the project’s grant was awarded and for the entire project’s lifetime. As a result, the figure for 2022 is higher than previously reported.
3. In 2024, we have defined more granular priority areas for community projects. For example, initiatives previously grouped under the single category “Youth & Healthy Living” are now reported separately under “Youth” and “Healthy Living.” Additionally, we introduced a new category, “Culture & Traditions.” As a result, the percentage of projects funded in each category may differ from those presented in previous reports.

Governance Performance Data

Economic Contributions

Fees and Contributions (USD)	2021	2022	2023	2024
Developing States Fees (Administrative)	$ 445,000	$ 464,109	$ 735,724	$ 925,229
ISA Fees	$ 132,000	$ 278,396	$ 324,677	$ 258,000
Developing States Community Projects	$ 140,600	$ 149,183	$ 244,915	$ 251,710
ISA Training Programs	$ 23,082	$ 69,043	$ 219,096	$ 166,589
Developing States Training Programs	$ 41,218	$ 70,786	$ 127,812	$ 173,937
TOTAL	**$781,900**	**$1,031,517**	**$1,652,224**	**$1,775,464**

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