

Sustainability at Impossible Metals

Impossible Metals is aiming to deliver mining solutions that are vastly better for people and planet than existing land-based mining and concept seabed mining approaches. We firmly believe these solutions will be responsible, ethical, sustainable, cost effective and profitable. In time it may be possible to stop mining new minerals completely and rely on recycling. Until then, we believe that mining can, and should, be dramatically different. We are aiming to show that it's possible to raise the bar on environmental and social metrics, while still competing on cost.

Challenges of Metal Sourcing

- ▶ Regardless of where metals are sourced, they come with an impact.
- ▶ Geopolitical risks associated with critical mineral deposits are increasing.
- ▶ Closed-loop sourcing remains several decades away, based on current demand projections.
- ▶ Environmental and social risks associated with mining are increasing as the grade of terrestrial deposits decreases. This changes both the return on investment profile and the permitting risk associated with new terrestrial mines.

⚠ Deforestation (Biomass)

⚠ Biodiversity Loss

⚠ High (CO2) Emissions

⚠ People Displaced

⚠ Water Scarcity

⚠ Tailings Toxic Waste

Wet tailings, Prony nickel mine
in Goro, New Caledonia

⚠ Child Labour

Children work
in a cobalt mine
Kamatanda,
DR Congo

Hengjaya Nickel Mine Indonesian

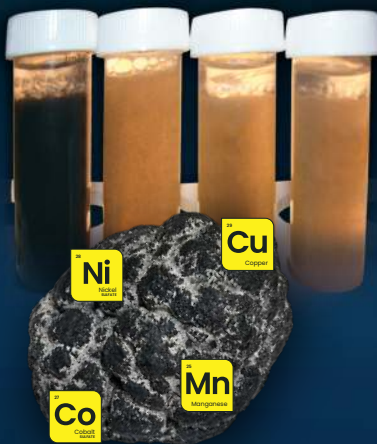
IMPOSSIBLE
— METALS —

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Impossible Metals' Approach to Harvesting of Critical Metals

- ▶ Autonomous Underwater Vehicles (AUV) robotics fleet with shipping container vessel(s)
- ▶ Image sensing technology to identify and select only nodules free of megafauna
- ▶ “Pick and place” manipulators to harvest nodules individually and minimize disturbance of sediment
- ▶ Low environmental impacts—avoidance of nodule fauna, no significant plume, no return water, no widespread sediment structure change
- ▶ Scalable— no single point(s) of failure, ability to start with low production rate and increase over time



Impossible Metals' Approach to Mineral Processing

- ▶ Naturally occurring process of bacterial respiration in which bacteria use oxidized metals as oxygen gas substitute (not leaching)
- ▶ Discovered by Co-Founder Prof. Ken Nealson, patent pending
- ▶ Bacterial respiration liberates multiple metals concurrently, leaving them in solution ready for separation
- ▶ Operating parameters - room temperature, neutral pH, fresh/saltwater, bacterial substrate/food source is organic carbon (e.g. food waste)
- ▶ No toxic chemicals, no tailings, neutral pH wastewater
- ▶ Lab testing indicates high efficacy on polymetallic nodules

What are Responsible Metals?

The mineral supply chain should move towards 100% acquisition of Responsible Metals in future. BetterEV.org defines Responsible Metals as metals that are mined and refined in a way that:

- ✓ Protects safety and human rights
- ✓ Is carbon neutral
- ✓ Maximizes the potential for recycling and circularity
- ✓ Eliminates toxic waste
- ✓ Avoids widespread habitat destruction
- ✓ Avoids water scarcity
- ✓ Avoids loss of biodiversity
- ✓ Avoids displacing indigenous people or communities

	LAND BASED MINING*	SEABED ROCK DREDGING**	SEABED ROCK SELECTIVE HARVESTING
AN EXAMPLE COMPANY	NORINICKEL	the metals company	IMPOSSIBLE METALS
CARBON NEUTRAL METALS (NET ZERO)	●	●	●
WIDESPREAD HABITAT LOSS	●	●	●
BIODIVERSITY LOSS	●	●	●
DISPLACEMENT OF PEOPLE	●	●	●
PRODUCTION OF TAILINGS/TOXIC WASTE	●	●	●
POST-MINING ECOSYSTEM RECOVERY	●	●	●

* NEW NICKEL AND COBALT RESOURCES.
 ** DREDGE BASED TECHNOLOGY IN DEVELOPMENT.

Today there are no mining companies that are delivering Responsible Metals. Impossible Metals is aiming to be the first.

Learn More at ImpossibleMetals.com/bmw22