



OCEAN MINERALS

**Developing Seafloor Deposits of
Critical Minerals**

May 2023

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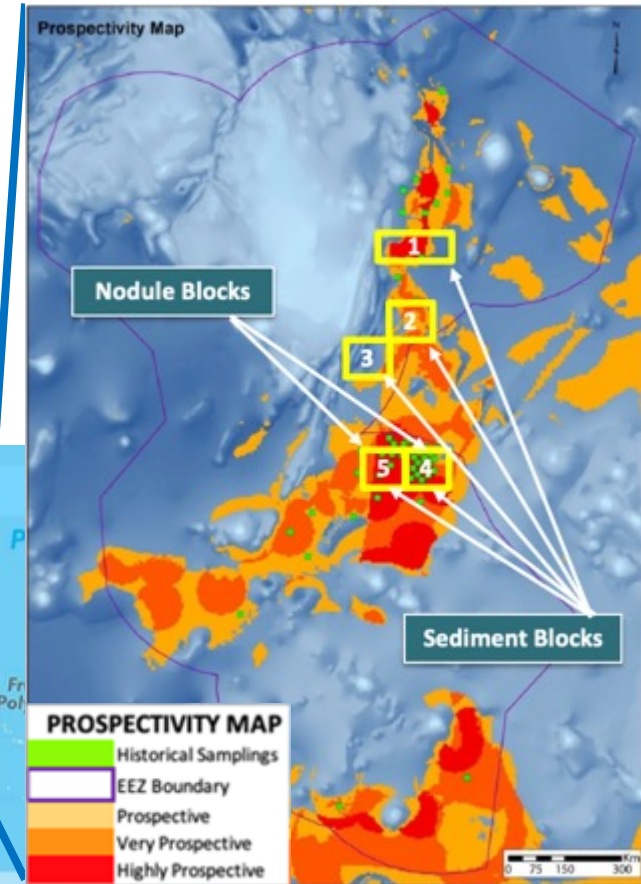
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OML's Cook Islands Critical Minerals Project

- Ocean Minerals LLC (OML)'s flagship project, Moana-1, is a seafloor polymetallic nodule project in the Cook Islands.
- **Moana-1 is the largest known undeveloped primary cobalt project in the world**, with an NI 43-101 / JORC compliant Mineral Resource Estimate in place; **byproducts include nickel, manganese, copper, and rare earth elements (REEs)**.
- Exploration License granted; Work Program includes **environmental baseline data collection** (Environmental Social Impact Assessment preparation) and **additional exploration work** to increase (in tonnage) and upgrade (in resource confidence level) the deposit.
- **Developing product specifications to supply the battery-grade cathode market, as well as legacy metals markets.**
- **Final Cook Islands mining legislation in place by end 2023.**
- Working towards a final Mining License, with **first production anticipated in 2027-28.**
- OML also has an option to apply for Exploration License over REE-enriched sediment areas.

OML has Transocean Ltd. as its upstream mining partner and is currently looking for a downstream processing and off-take partner(s).



Investment Highlights

1

Strong Metals Demand Growth

Strong demand for metals is projected to continue for the foreseeable future due to growth from legacy metals markets (high-performance alloys), as well as new and rising demand from lithium-ion battery production.

2

World-Class Resource

OML's Moana-1 is a large, high-grade polymetallic project located in a pro-business jurisdiction. NI 43-101 resource estimate describing the world's largest known undeveloped primary cobalt project – including byproducts of Ni, Mn, Cu, and REEs.

3

Attractive Project Economics

Moana-1 has an attractive sustainability profile and project economics, competitive with existing and new sources of cobalt (including to battery-grade material) and other metals, as outlined by an NI 43-101 Preliminary Economic Assessment (PEA).

4

Successful Operating Milestones

Moana-1's project development relies on proven technology – and with support from Transocean Ltd. (upstream partner) and use of the proven Cuprion processing method, OML continues to advance the project towards first production.

5

Experienced Board & Management Team

OML is led by an experienced Board and Management Team with unique and successful experience in deepwater seafloor minerals development – who together, can take Moana-1 into production.

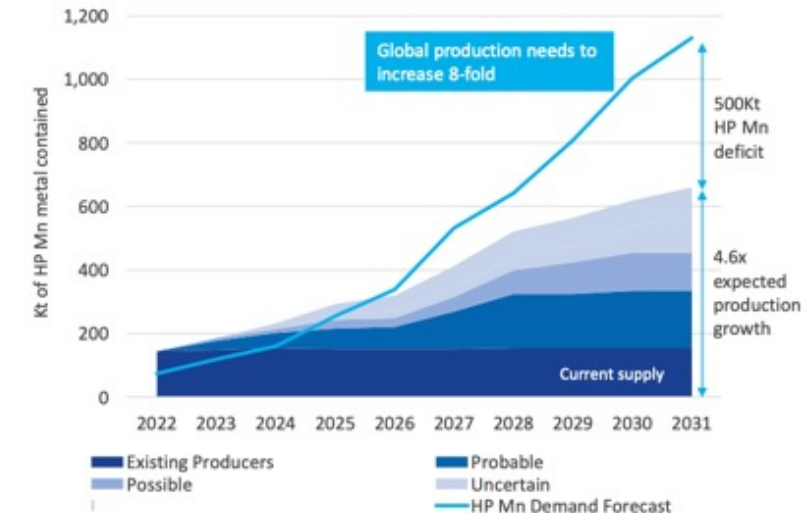
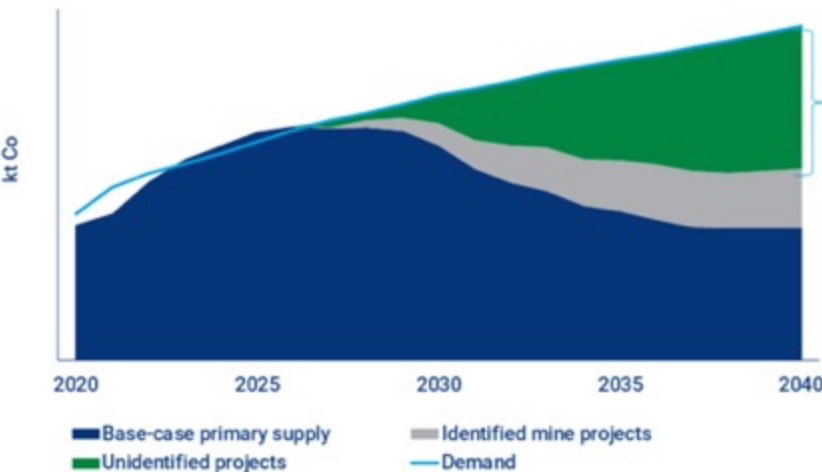
Strong Metals Demand Growth

- The outlook for a growing list of metals points to **future deficits without a clear supply solution due to strong and rising demand from legacy metal alloy markets and lithium-ion battery production.**
- NMC-series Li-ion batteries are **driving demand for cobalt, nickel, and manganese** – all of which are also used in high-performance alloys.
- Each of these markets are projected to have difficulties in keeping up with anticipated demand.

Base case cobalt mine supply will struggle to meet demand (Cobalt supply / demand)

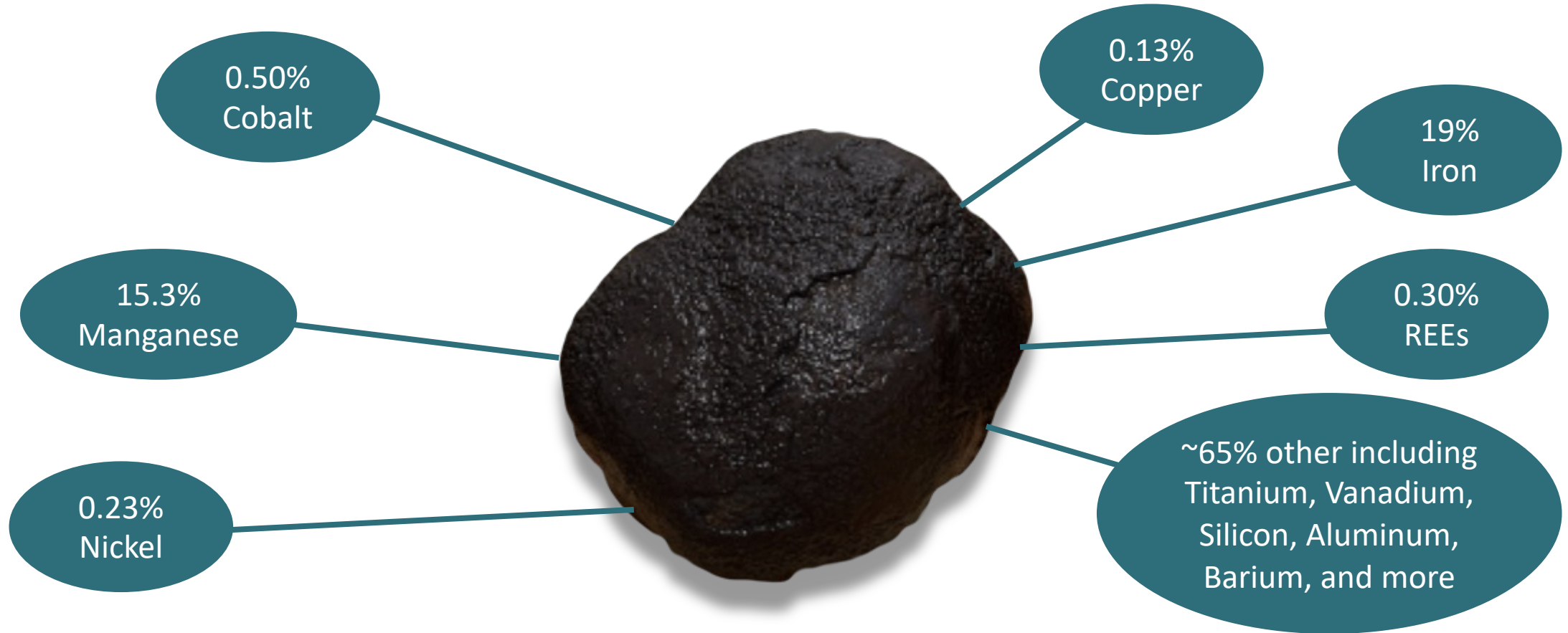
Nickel market is unprepared for the rise in battery demand (Class 1 nickel supply / demand)

Critical niche of manganese market (High-purity manganese supply / demand)



Sources: Wood Mackenzie (Q1 2023); Goldman Sachs Global Investment Research (Q1 2023); Euro Manganese Inc. (Q1 2023)

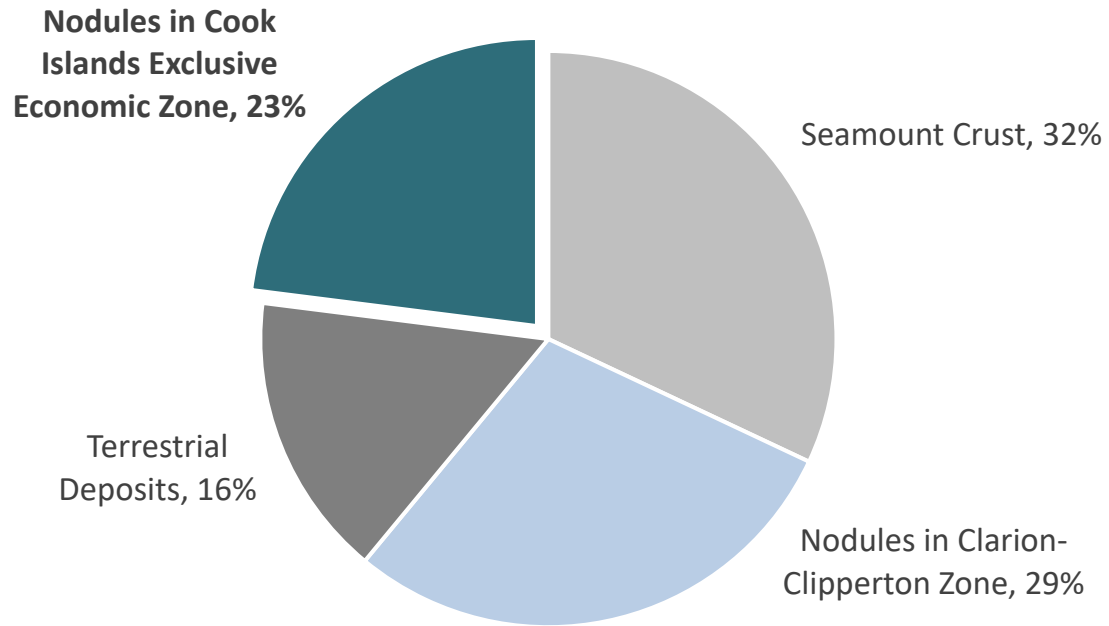
Cook Islands Polymetallic Nodules as a Solution



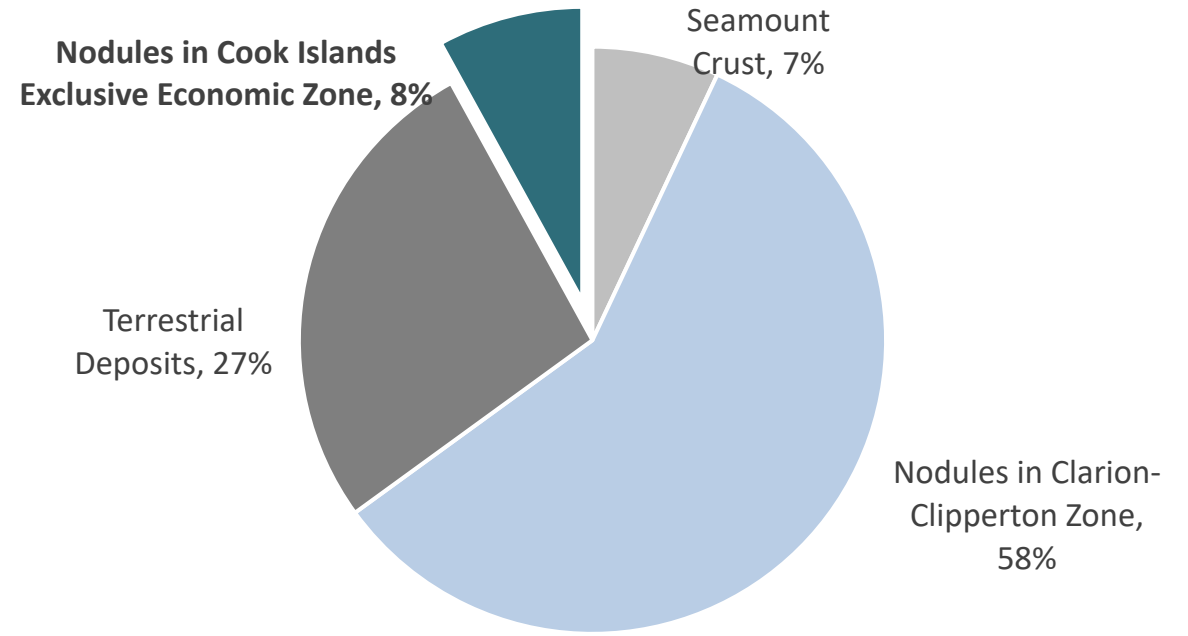
Cook Islands polymetallic nodules are uniform in shape, roughly the size of golf balls. These two-dimensional nodule fields are located at ocean depths of approximately 5,000 meters and are completely uncovered by overburden – with very little ore grade variability, and low levels of heavy metals and other impurities or deleterious elements.

Total Global Resources - Seafloor Deposits are the Largest

Cobalt



Nickel



The Cook Islands EEZ alone hold nearly 23% of the world's known cobalt and 8% of the world's nickel, in addition to significant volumes of manganese and REEs – all held within an area that makes up less than 1% of the total seafloor (~2 million km² out of total ~360 million km²), and OML's Moana-1 represents only about 1% of the Cook Islands EEZ, a very small footprint.

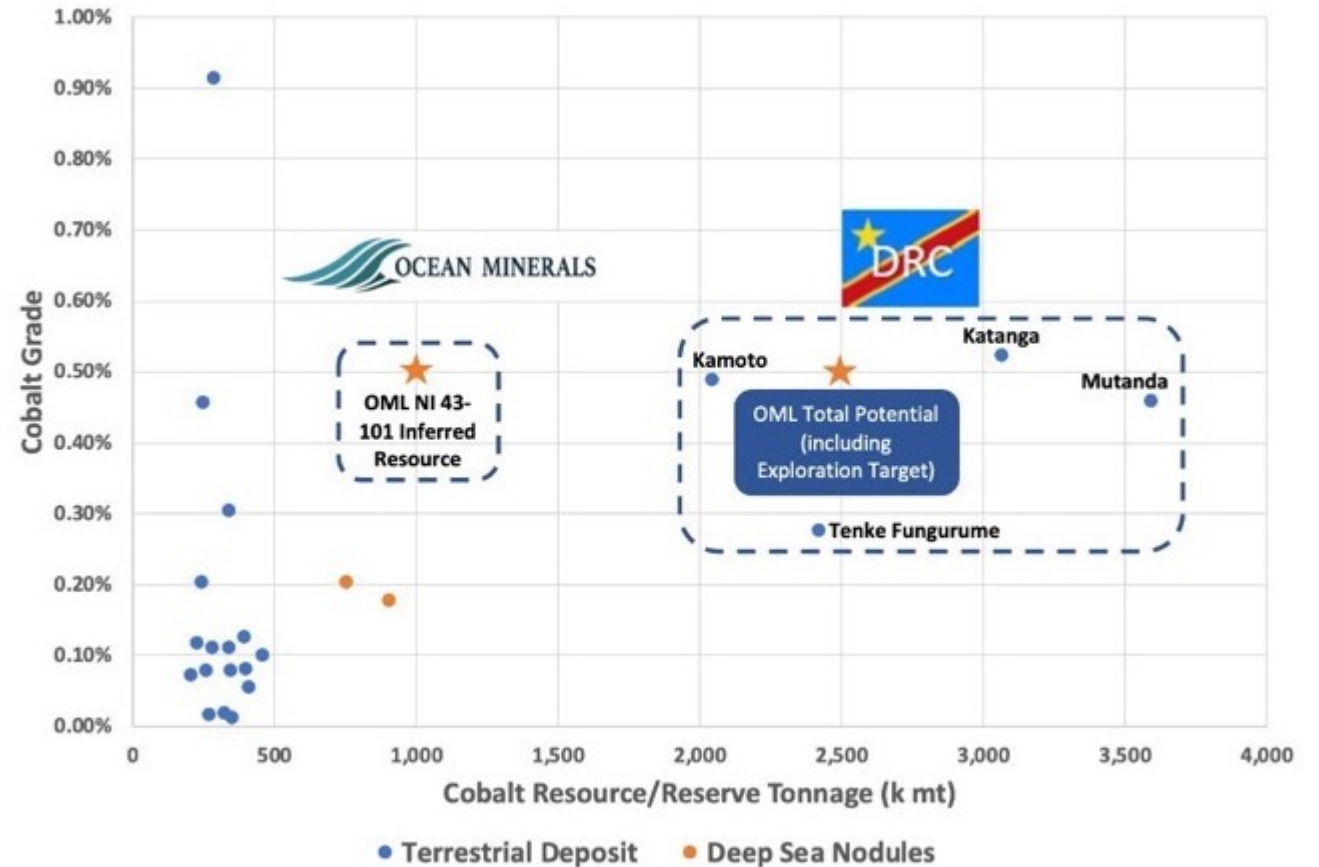
Sources:

- USGS National Minerals Information Center Commodity, Summaries for Cobalt and Nickel (Terrestrial Resource)
- James R. Hein, Francesca Spinardi, Nobuyuki Okamoto, Kira Mizell, Darryl Thorburn, Akuila Tawake, 2015, "Critical metals in manganese nodules from the Cook Islands EEZ, abundances and distributions", *Ore Geol. Rev.* 68, 97-116
- Hein, J.R., Mizell, K., Koschinsky, A., Conrad, T.A., 2013, "Deep-ocean mineral deposits as a source of critical metals for high- and green-technology applications: comparison with land-based resources". *Ore Geol. Rev.* 51, 1-14.

World Class Resource

- OML's Moana-1 project is the **largest known primary cobalt project in the world**, with byproducts of nickel, manganese, copper, and REEs.
- At 0.50% cobalt, it is also **one of the highest-grade cobalt deposits**, including primary copper and nickel deposits.
- Due to the nature of the nodule deposit, the entire **resource is uniquely homogenous** in grade and mineral content, and **without any overburden**.
- **Moana-1's existing resource tonnage (1 million mt Co) and exploration upside (a further 1.5+ million mt Co) are only rivaled by the large deposits located in the DRC.** Outside of Moana-1 and the DRC, the largest projects are typically large tonnage, but lower grade such as those in Indonesia, Australia, and Canada.
- The only other known primary cobalt deposits include the Bou Azzer mine in Morocco, operated by Managem Ltd.; the Idaho Cobalt Operations (ICO) in the US, under development by Jervois Global Ltd; and primary cobalt mines in parts of Chile, not currently in operation.

OML's Moana-1 Compared to World's Largest Global Cobalt Projects (% grade and tonnage, k mt)



The ore grade and tonnage of Moana-1 are in line with the biggest cobalt mines on earth, largely located in the DRC.

Source: RSC Consulting, Ltd.

Moana-1 Mineral Resource Estimate

Moana-1 NI 43-101 / JORC Mineral Resource Estimate as of October 2017 (abundance cut-off of 15kg / km²)

Deposit	Dry Tonnes (million mt ore)	Abundance (kg/m ²)	Metal	Grade	Contained Metal (k mt)	Exploration Target* (+300 million mt ore)	Total* Contained Metal (k mt)
Moana-1 Polymetallic Nodule Project	203	29	Cobalt	0.50%	1,015	1,522	2,537
			Nickel	0.23%	470	705	1,175
			Manganese	15.3%	31,060	46,590	77,650
			Copper	0.13%	260	390	650
			Iron	19.0%	37,660	56,490	94,150

**Outside of Inferred Mineral Resource Estimate, though included as Exploration Target in RSC Consulting's NI 43-101 / JORC report*

OML has an exploration target of an additional 300 million dry tonnes of ore (nodules), as this Mineral Resource Estimate only covers 1/3rd of the Exploration License area. Nodule assays also indicate Rare Earth Element (REE) mineralization, with laboratory work ongoing.

Source: RSC Consulting, Ltd.

Nodules are a More Sustainable Solution

- Relative to terrestrial deposits, seafloor **polymetallic nodules** offer a **favorable source of numerous metals**.
- Additionally, due to the nature of these deposits, nodule production **requires a reduced labor force – and certainty that no forced or coerced labor was involved** relative to many terrestrial deposits of Critical Minerals.



Environmental, Social, and Economic Impacts: Cradle-to-gate production of Co / Ni / Mn sulphate and Cu cathode for ~1 billion EVs (using CCZ nodules as example)

	Land	Nodules	% change
Climate change			
GWP - CO ₂ equivalent emissions, Gt	1.5	0.4	-70%
Stored carbon at risk, Gt	9.3	0.6	-94%
Nonliving resources			
Ore use, Gt	25	6	-75%
Land use, km ²	156,000	9,800	-94%
Incl. Forest use, km ²	66,000	5,200	-92%
Seabed use, km ²	2,000*	508,000	+99.6%
Water use, km ³	45	5	-89%
Primary and secondary energy extracted, PJ	24,500	25,300	+3%
Waste streams			
Solid waste, Gt	64	TBD	TBD
Terrestrial ecotoxicity, 1,4-DCB equivalent Mt	33	0.5	-98%
Freshwater ecotoxicity, 1,4-DCB equivalent Gt	21	0.1	-99%
Eutrophication potential, PO ₄ equivalent Mt	80	0.6	-99%
Human & wildlife health			
Human toxicity, 1,4-DCB equivalent Mt	37,000	286	-99%
SO _x and NO _x emissions, Mt	180	18	-90%
Human lives at risk, number	1,800	47	-97%
Megafauna wildlife at risk, trillion organisms	47	3	-93%
Biomass at risk, Mt	568	42	-93%
Biodiversity loss risk	Present	Present	
Economic impact			
Nickel sulfate production cost, USD per tonne Ni	14,500	7,700	-47%
Jobs created (non-artisanal), worker-years	600,000	150,000	-75%

Source: The Metals Co.: Comparing Environmental, Social, and Economic Impacts of Supplying Base Metals from Land Ores and Seafloor Polymetallic Nodules, April 2020

Current Sources are Not Sustainable



Human Rights Violations

Over 70% of the world's mined cobalt comes from the DRC, including material produced by forced or coerced labor. **If a supplier sources material from the DRC, there is little certainty that their material is non-conflict.**



Environmental Degradation

Indonesia is the world's largest source of mined nickel, and 2nd largest source of cobalt. **Many of these projects, including those planned, operate in fragile coastal environments, impacting local communities.**



Chinese Controlled Market

Most Indonesian nickel smelters are Chinese owned and 60% of world cobalt is refined in China. **Over 70% of world REEs are mined in China, with upwards of 90% of REEs refined in China – resulting in effective market control.**

Sources: Siddharth Kara; Muhammad Faldi for National Geographic; Huayou Cobalt

The Cook Islands as a Favorable Jurisdiction

- Moana Minerals Ltd., OML's wholly-owned local subsidiary, operates in the Exclusive Economic Zone (EEZ) of the Cook Islands.
- The Cook Islands is a sovereign, independent Commonwealth nation in the South Pacific with a pro-business government.
- **Both major political parties encouraging responsible development of seabed mineral resources and opposed to signing of any moratoria.**
- Support from Cook Islands tribal and religious leaders as well.
- The Cook Islands was the **first nation to establish deepwater seabed minerals regulations and a fiscal framework** in 2009 and updated in 2019.



Cook Islands Prime Minister Brown addressing guests at ceremony for OML's *Anuanua Moana* vessel.



SBMA Release: Historic First Seabed Minerals Exploration Licences Granted



Source: Cooks Islands Seabed Minerals Authority www.SBMA.gov.ck

Cook Islands Seabed Minerals Authority

- The Cook Islands Seabed Minerals Authority (SBMA) was created in 2012 as the key regulator of deepwater seabed minerals (DSM) activities in the Cook Islands EEZ.
- The SBMA administers the Seabed Minerals Act of 2019 on behalf of the Cook Islands government.
- The SBMA also sits on the International Seabed Authority (ISA) council.
- The country's **first seabed minerals Exploration Licenses were awarded in Q1 2022.**
- SBMA is **interacting with licensees, including OML's Moana Minerals on development of final regulations.**
- SBMA's vision is focused on *"transforming the Cook Islands through the sustainable extraction of seabed minerals, for the benefit of our Cook Islands people."*



Seabed Minerals Authority
Runanga Takere Moana
COOK ISLANDS

Cook Islands EEZ extends over an area of almost 2 million km² (772,000 mi²)

Cook Islands SBMA milestones and timeline to develop a fiscal and legal framework for commercial deepwater seabed mining

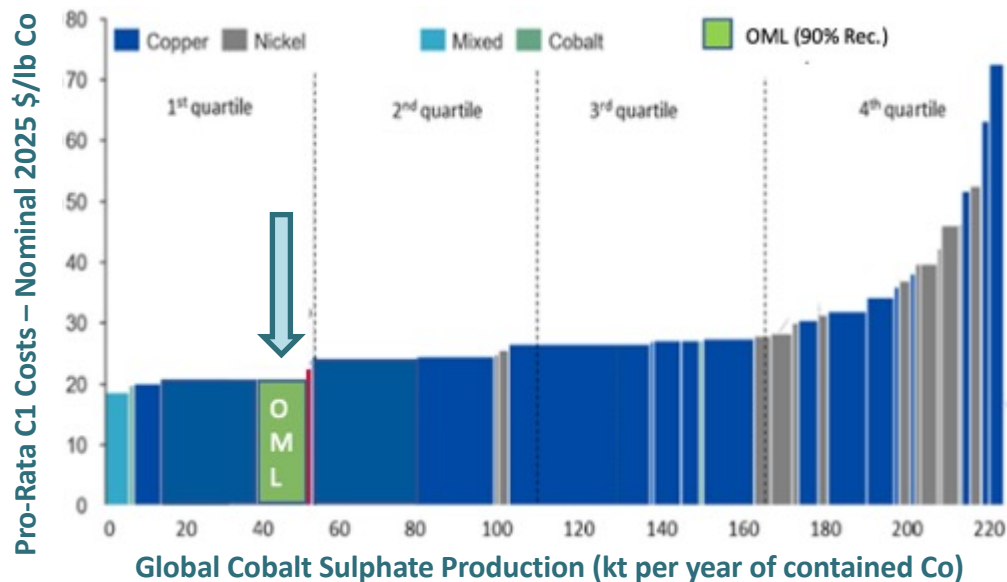
Deepwater seabed minerals (DSM) exploration regulations 	First Exploration Licenses awarded 	DSM mining regulations finalized Q4 2023	First Mining Licenses awarded 2026
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Source: Cooks Islands Seabed Minerals Authority www.SBMA.gov.ck

Attractive Project Economics

- OML's Moana-1 project has attractive project economics that are competitive with global terrestrial projects, as outlined in the maiden PEA.
- Moana-1 is expected to be a low cost producer of battery-grade cobalt sulphate relative to other global cobalt projects (mostly primary copper or nickel).
- Downstream processing capex likely to be covered by processing partner(s).
- These estimates will be updated and expanded upon with an updated Mineral Resource Estimate and the upcoming Pre-Feasibility Study (PFS).

Global Cobalt Sulphate C1 Cost Curve (\$/lb Co)



Sources: AMC Consultants (Singapore) Pte. Ltd.; Australian Mines SCONI BFS; Internal Ocean Minerals LLC Estimates

Moana-1 NI 43-101 Preliminary Economic Assessment (PEA) as of August 2019

Description	Moana-1
Production Rate (dry nodules, mt/yr)	2.7 million
Life of Mine	38 years
Average Nodule Abundance (kg/m²)	27.8
Processing Plant Feed Grade	
Cobalt	0.50%
Nickel	0.30%
Manganese	15.0%
Copper	0.13%
Processed Metal Delivered (mt/yr) ^{(1) (2)}	
Cobalt	12,150
Nickel	7,290
Manganese	364,500
Copper	3,160
Total Cash Cost (cobalt basis) ^{(3) (4)}	USD \$15.80/lb \$34,800/mt
Cash Cost - Mining	\$9.20/lb \$20,180/mt
Cash Cost - Processing	\$6.60/lb \$14,620/mt
Total Capex Cost (+ 25% contingency)	\$1,364 million
Mining System ⁽⁵⁾	\$364 million
Processing Plant (brownfield)	\$1,000 million
Pre-Tax Cash Flow (undiscounted)	\$14.4 billion ⁽⁶⁾
Internal Rate of Return (IRR)	18%
Pre-Tax NPV (incl. royalties, 10% discount)	\$908 million ⁽⁶⁾

Notes: (1) Assumes recoveries of 90%; (2) Based on OML estimates to convert existing brownfield processing plant to Cuprion plant; (3) Life of Mine avg; (4) Co: \$60,000/mt, Ni: \$16,000/mt, Mn: \$400/dmt, Cu: \$6,500/mt; (5) Mining system capex covered 100% by upstream agreement with Transocean, Ltd.; (6) Calculated using PEA for mining supported by OML estimates to establish downstream processing costs to provide the full supply chain project economics

Proven Mining System and Technology

- OML's Moana-1 project uses technology that was proven in open sea trials in the 1970s with some of the world's largest mining, energy, and industrial companies.
- Major advancements in offshore oil & gas drilling and technology since the 1970s are being used to optimize production designs to improve efficiency and reliability.
- Deepwater oil drilling rigs are able to be converted to nodule mining vessels using proven technology + new advancements.
- Since the 1980s, offshore mining of diamonds (Namibia), tin (Indonesia), aggregates (global), and oil & gas (global) have developed commercially and are now responsible for roughly 10-20% of global production for each commodity.
- Since the 1970s, the offshore mining industry has also completed numerous environmental surveys to understand the environment and impact of mining.

1970s Projects Demonstrating Nodule Production at Pilot-Scale

OMA Consortium

Deepsea Ventures, U.S. Steel, Sun Oil, Union Minière



Collected 500mt of nodules with an airlift riser and hydraulic collector

KCON Consortium

Kennecott, Mitsubishi, Noranda, RTZ, Goldfields, BP Minerals



Tested hydraulic towed collector and developed enhanced airlift model

OMCO Consortium

Lockheed, Amoco, Billiton, Boskalis



Tested self-propelled collector with mechanical pick-up system

OMI Consortium

Inco, DOMCO, Preussag, Metallgesellschaft AG, SEDCO



Collected 800mt of nodules with airlift riser and pump systems

Offshore deepwater nodule mining technology was first proven in the 1970s, and has been improved upon since then – now ready for commercial development.

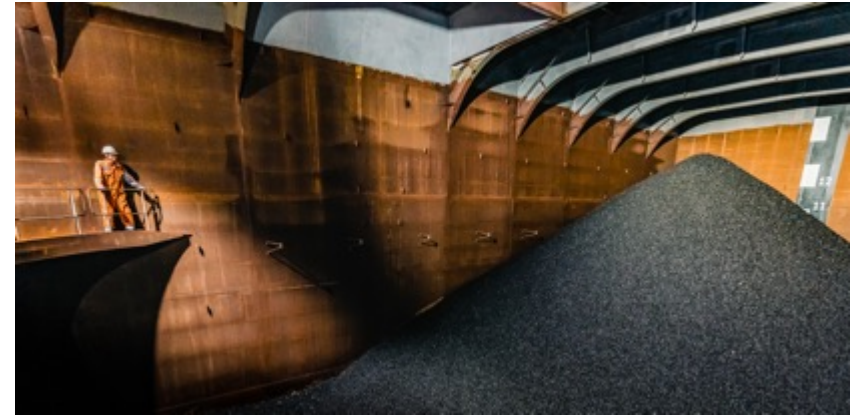
Current Commercial Developments in Nodule Mining

- In Q2 2021, Global Sea Mineral Resources Ltd. (GSR) successfully completed **open sea deepwater (4,500m) testing of their *Patania II* prototype nodule collector.**
- In Q2 2022, Allseas Group and The Metals Co. (TMC) successfully completed **pilot nodule system testing of the *Hidden Gem* in a deepwater environment (2,500m), collecting over 3,000 tonnes of nodules.**
- In Q3 2022, TMC, MIT, Scripps Institute of Oceanography, and Deep Reach Technology, Inc. (OML affiliate), **conducted a peer-reviewed study on seabed plumes, concluding that 92 - 98% of sediment was deposited locally, reducing concerns of pluming from nodule mining.**
- In Q1 2023, OML's *Anuanua Moana* completed Survey #1, **a work program focused on increasing the existing resource and collecting baseline environmental data.**

Q2 2021: GSR's *Patania II* Trial Test



Q2 2022: Allseas' *Hidden Gem* Pilot Nodule Mining



Q3 2022: MIT & Scripps Seabed Plume Study



Q1 2023: OML's *Anuanua Moana* began Survey #1



Sources: Global Sea Mineral Resources Ltd. (GSR); Allseas Group SA; The Metals Co. (TMC); Massachusetts Institute of Technology (MIT); Deep Reach Technology, Inc. (DRT); Ocean Minerals LLC (OML)

Transocean Upstream Partnership

- In Q3 2021, **Transocean Ltd. and OML signed an investment agreement in which Transocean invested USD \$20 million, made effective in March 2022.**
- Concurrently, **Transocean is now OML's upstream technical partner**, and maintains a priority right to develop, own, and operate the nodule mining vessel and nodule collection vehicle / system for OML.
- **Transocean has a team currently focused on developing the offshore technology for the Moana-1 project, and is working closely with OML on requirements, technology, and specifications.**
- In Q1 2023, Transocean also signed an investment and upstream partnership agreement with GSR to support their nodule mining development strategy.

Transocean explores seabed mineral resource recovery opportunities

Critical minerals will be vital to support a renewable energy supply chain

29 March 2022 21:57 GMT UPDATED 4 April 2022 14:52 GMT

By Naomi Klinge in Houston

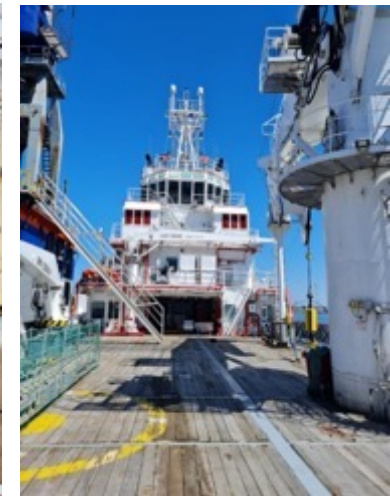
US offshore drilling giant Transocean announced on Tuesday that it has purchased a minority interest in Ocean Minerals, a company exploring seabed resources for critical energy transition minerals.



Transocean Ltd. is the world's largest offshore contractor and the global leader in technology and ultra-deepwater vessel design.

Sources: Upstream Online; MarineTraffic.com

OML's Survey & Exploration Vessel



- In 2022, OML acquired an oil services vessel (OSV) and completed an overhaul and modification work to convert it to a scientific exploration vessel, fully equipped to conduct nodule exploration and environmental survey work.
- Renamed the *Anuanua Moana* (*Ocean Rainbow* in Maori), the vessel is now permanently based in the Cook Islands, supporting OML's Exploration License work program in a cost-effective manner.
- This is a unique and strategic asset for OML, and the only vessel of its kind in the Cook Islands and the broader region.
- Through its wholly owned Cook Islands subsidiary, Kiva Marine Ltd., OML is conducting its own work program, as well as providing marine surveying and services work in the region for 3rd party customers, generating revenue for OML.
- Included on board are multiple laboratories, box coring systems, multi-corer systems, free-fall grab systems, camera systems, a water column sampler and profiling system, and a Remotely Operated Vehicle (ROV) equipped with manipulators and a depth rating of 6,000 meters.

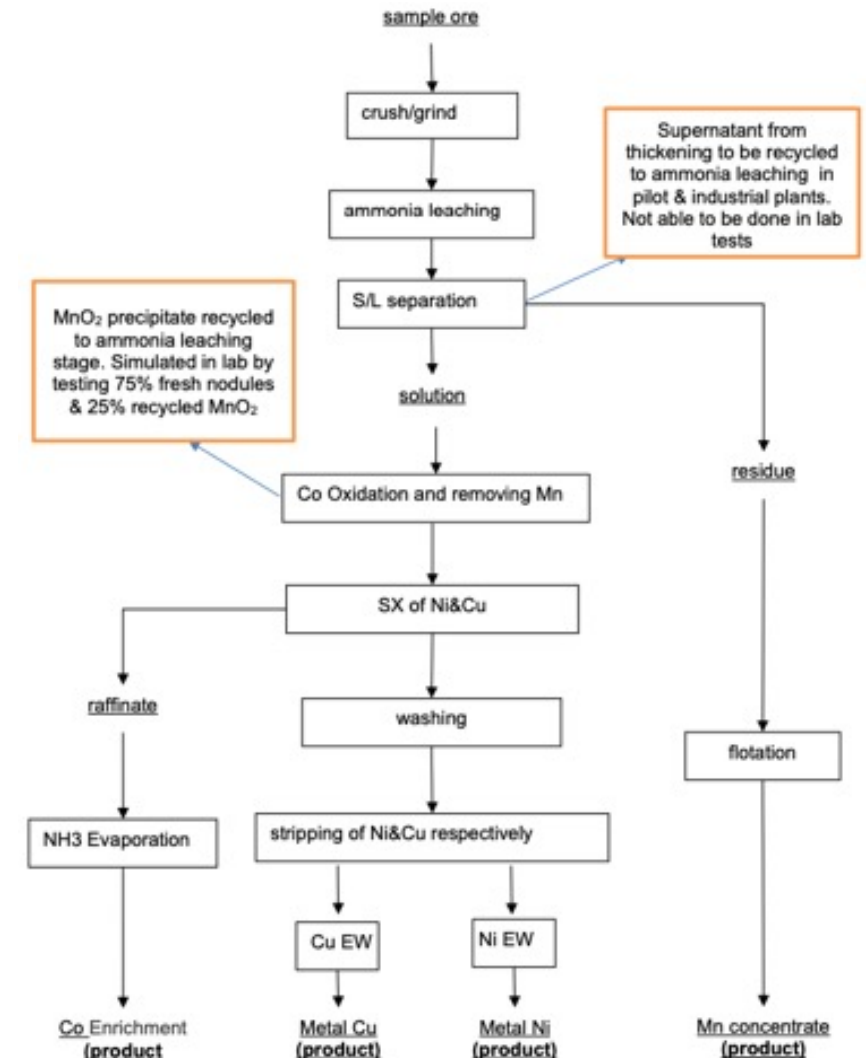
Cook Islands Nodule Downstream Processing

Developed a Cuprion Sulphate Hydrometallurgical Process Proven at Bench Scale

- **Successful independent Bench Scale demonstration** of ammonia leaching of cobalt, nickel, manganese, and copper.
- OML conducted **testing on approximately 250 kg of Cook Islands nodules** with samples sent to the following labs, chosen for their prior evidence of expertise with polymetallic nodules or other similar ore:
 - Beijing General Research Institute of Mining & Metals (BGRIMM);
 - ALS Metallurgy Holdings Australia (AMML / ALS);
 - A global mining company with downstream processing capabilities; and
 - An American company with proprietary extraction and processing capabilities.
- Overall product **recoveries of Co (90%), Ni (85%), Mn (60%), and Cu (60%)**.
- Demonstrated products: EW Cu, EW Ni, Co(OH)_2 , MnO_2 .
- **Process yields battery grade materials (high purities)**.
- Scaled-up economics very competitive with other cobalt sources; able to modify existing downstream processing facilities.
- Operates at **ambient temperature & pressure** with potential for **minimal tailings / residue**.
- REEs do not leach and are concentrated in the residue; lab work ongoing.

Source: Ocean Minerals LLC

Simplified Flowsheet of OML Extraction & Recovery



Downstream Processing Next Steps


Next Step is Pilot Plant Demonstration and Pre-Feasibility Study (2023)

- **Finalize investigative work with ALS on rare earth element (REE) recovery from nodule residue.**
- **Conduct Pilot Plant at ALS in Perth, Australia.**
- **Develop set of product specifications and evaluate samples.**
- Work with Sedgman Pty. Ltd., an Australian engineering and minerals processing solutions company, to complete Pre-Feasibility Study (PFS).
- **PFS will detail upstream + downstream project scope, including detailed project economics.**



SEDGMAN

OML's milestones and timeline to develop full upstream-to-downstream vertical integration flowsheet

Prove Cuprion process at Bench Scale 	Prove Cuprion process at Pilot Plant bulk scale 2023	Downstream partner(s) selection 2023 - 2024	Initial off-take agreement(s) signed 2023 - 2024
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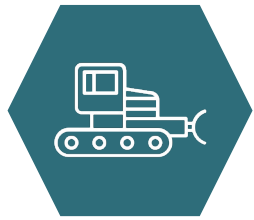
OML is currently evaluating strategic downstream partner(s) for Pilot Plant sample testing, product specification, and process development.

Moana-1 Project Flowsheet



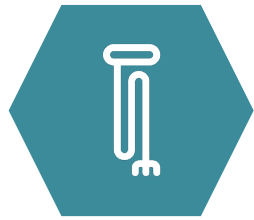
Exploration

Baseline environmental work, complete ESIA, increase mineral resource size and confidence level, collect more nodules for processing studies and ALS Pilot Plant, production and processing engineering, publish PFS.



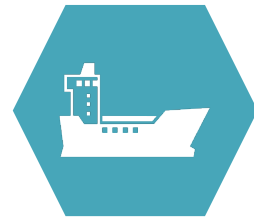
Collection

Nodules are golf ball sized and reasonably uniform in size and shape. They lie uncovered on the seafloor in dense single layer and are recovered using proven dredging technology, essentially vacuumed up and then pumped to the production vessel using a riser lift system.



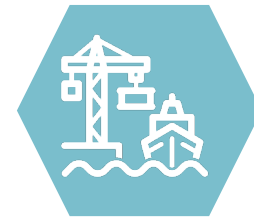
Riser Lifting

Similar to offshore oil production, a riser lift system is used (either air or electric pumps) to raise nodules to the surface. An integrated return pipe discharges seawater to well below the upper sea layers. This riser system can be disconnected or recovered to avoid severe weather.



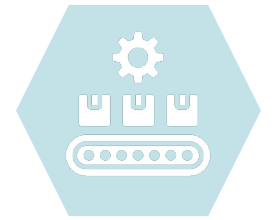
Production Vessel

A newbuild or converted oil drilling/production vessel or ore carrier serves as the Production Vessel with onboard nodule storage. It is dynamically positioned with ability to deploy and recover the riser and seafloor collector while offloading nodules.



Transportation

Bulk ore carriers shuttle nodules to various offloading ports for onward transport to processing sites around the world. As these seafloor deposits already exist offshore, logistical constraints and other bottlenecks are greatly minimized.



Processing

The proven Cuprion Sulphate process running at selected brownfield site(s) in Australia, the US, and elsewhere will produce battery-grade materials and metals for alloying and other end market uses.

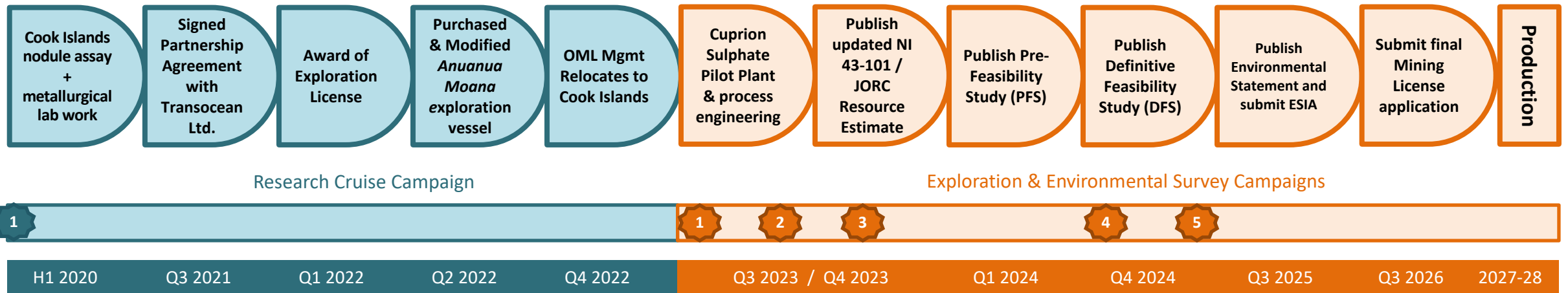
Production from polymetallic nodule deposits such as OML's Moana-1 are scalable and stand to disrupt the existing supplies of terrestrial mineral deposits.

Key Milestones & The Path to Production

- OML is focused on **responsibly developing** the Moana-1 seafloor polymetallic nodule project, with **first production expected in 2027-28**.
- The Exploration License work program includes **three years of environmental baseline collection**, as well as exploration work to **increase OML's current Mineral Resource Estimate tonnage (to NI 43-101 / JORC standards) and upgrade the Resource Confidence level (from Inferred to Measured and/or Indicated)**.
- Strategic financial and **downstream partners may support acceleration of this timeframe**.
- **Distinct milestones including PFS and DFS allow for significant uplift in valuation, as well as potential liquidity events for investors.**
- **USD \$15 – 20 million required to achieve delivery of Pre-Feasibility Study by Q2 2024, the next notable milestone.**

Solid track record of project delivery

Path to Moana-1 first production



USD \$15 – 20 million required for PFS milestone, and an estimated \$60 million for DFS + ESIA + Mining License application submitted.

Cobalt-Focused Peer Group

Ocean Minerals LLC Cobalt-Focused Peer Group

(Data as of 17 April 2023)	Market Cap	Enterprise Value													
Company / Ticker	(USD MM)	(USD MM)	Project(s)	Location	Commodities	Co Grade	Stage of Development	Contained Co (k mt)	EV/mt Co	Integrated w/ Downstream?	Strategic Partner?	Mine Life (yrs)	Annual Co Prod (mt)	First Production	
Jervois Global (JRV AU)	\$115	\$192	ICO, Nico Young	US, Aus, Braz, Fin	Co, Cu, Ni, Au	0.44%	Commissioning mine; BFS processing	73	\$2,621	Yes - Braz/Fin	Yes - Umicore	7	1,900	2023	
Cobalt Blue Holdings (COB AU)	\$87	\$74	Broken Hill, others	Australia	Co, Ni, S	0.07%	FS (2022), into BFS in 2023	81	\$914	Yes - Australia	Yes - LG, Sojitz, Mitsu	17	3,500	2024	
Electra Battery Materials (ELBM CN)	\$70	\$85	Iron Creek, others	US, Canada	Co, Cu, Au	0.26%	FS* (Co Exploration)	11	\$7,522	Yes - Canada	Yes - LG ES	TBD	5,000	2023*	
Kuniko Ltd (KNI AU)	\$21	\$17	Skuterud, others	Norway	Co, Cu, Ni	-	Exploration	-	-	TBD	No	-	-	-	
Fuse Battery Metals (FUSE CN)	\$8	\$7	Glencore Bucke, others	Canada	Co, Ag	-	Exploration	-	-	TBD	No	-	-	-	
Koba Resources (KOB AU)	\$8	\$8	Blackpine, others	US, Canada	Co, Au, Li	0.20%	Exploration	-	-	TBD	No	-	-	-	
Missouri Cobalt / US Strategic Metals (private)	-	-	Madison	US	Co, Ni, Cu	-	FS	33	-	TBD	Yes - Glencore	-	2,250	2023	
Ocean Minerals LLC (private)	-	-	Moana-1	Cook Islands	Co, Ni, Mn, Cu, REE, etc	0.50%	PFS	1,015	-	TBD	TBD	38	15,000	2027-28	

*Downstream only

- As compared to the cobalt-focused peer group, many of which are publicly-traded, OML has a much larger and higher-grade resource – and with numerous byproducts – all in a favorable jurisdiction that is supportive of responsible development.
- There is a distinctive uplift in market-based valuation as a project moves from Exploration → Pre-Feasibility Study (PFS) → Bankable Feasibility Study (BFS or FS). The peer group table above shows examples of this, with Electra and Jervois trading at a clear premium (in terms of Enterprise Value per Metric Tonne of Contained Cobalt) relative to pure exploration companies.
- Another aspect of premium valuation, in terms of the largest Enterprise Value of the group, is downstream integration + strategic partner(s).
- In terms of **potential exit opportunities**, OML could **list on a public market**; OML could be **acquired by another mining company**; OML could be **acquired by a downstream processing or black mass recycling company**; or OML could **continue as a private company** into commercial production and pay dividends to shareholders.

OML holds the largest known undeveloped primary cobalt deposit in the world, which holds significant strategic value and allows for various paths forward in terms of long-term plans for the company, including several potential exit opportunities.

Sources: Company presentations; US, Canadian, Australian exchange regulatory filings

2023 Milestones

- **Complete capital raise to fund work program towards receipt of Mining License.**
 - Use of proceeds is to fund development of Moana-1 for next ~4 years to submission of Mining License in 2026 (first production anticipated in 2027-28).
- **Conduct exploration and environmental survey campaigns with *Anuanua Moana* vessel.**
 - Nodule collection will assist in update of Moana-1 Mineral Resource Estimate to increase tonnage and upgrade level of confidence.
 - Data collection and seafloor / water column sample collection will support baseline environmental data and habitat assessment.
 - Vessel will also support benthic biological and biogeochemistry studies for future Environmental Impact Assessment (EIA) submission.
- **Commence Cuprion Sulphate Pilot Plant at ALS laboratory in Perth, Australia, using bulk samples of polymetallic nodules.**
 - Bulk sample demonstration of Cuprion Sulphate method, an ambient temperature & pressure process that has been proven at lab scale and is based on the original Cuprion process, which was designed and piloted in the 1970s by Kennecott to process nodules.
- **Confirm that extraction of rare earth elements (REEs) from nodules can be done economically.**
 - Assays done in 2020 confirmed presence of REEs, and initial lab work extracted cobalt, nickel, manganese, and copper – with REEs remaining in the residuals; testing to confirm REE economics.
- **Secure initial downstream processing partner(s) to support downstream process development.**
 - Product samples from Pilot Plant to be sent to prospective partner(s), including metal alloy fabricators, lithium-ion battery manufacturers, electric vehicle automakers, and integrated mining companies.
- **Commence work on Pre-Feasibility Study (PFS) with Sedgman Pty. Ltd. (Australia) with final publication expected in early 2024.**

Experienced Board and Management

Senior Management		Experience
Hans Smit	President & Chief Executive Officer	Former President of Neptune Minerals, Inc. and Managing Director of Royal IHC Marine & Mineral Projects
William McMahon	Chief Financial Officer	Certified Public Accountant; Former CFO of several publicly-listed and privately-held companies, including Neptune Minerals, Inc.
Gary van Eck	Senior VP, Operations	Mechanical Engineer and Naval Architect with extensive project management and operations experience in the marine and underwater mining industries
Laurie Meyer	Senior VP, Projects	Former Chief Technologist for offshore renewable projects at Lockheed Martin and Chief Engineer & Systems Integrator at Lockheed and Northrop Grumman
David S. Huber	Senior VP, Business Development	Former Co-Founder and Senior VP, Operations and Projects at Mariner Energy and Deep Gulf Energy and Deepwater Drilling Engineering Supervisor at Exxon
Dr. Colin Seaborn, FAusIMM	Chief Metallurgist	Metallurgist and Minerals Economist; Former General Manager and Metallurgist at CRA Ltd. (now Rio Tinto)
Dr. Adrian Flynn	Environmental Lead Consultant	Deep Sea Biologist and Environmental Consultant; Director at Fathom Pacific Pty. Ltd. and Honorary Research Fellow at La Trobe University

Board of Managers		
Dr. John Halkyard		Ocean Minerals LLC Founder and Chairman with over 50 years experience in deep ocean projects in mining and oil & gas
Hans Smit		Seabed Mining Executive and Engineer with over 20 years experience in underwater mining and subsea engineering, operations, and management
David S. Huber		Offshore Engineer with over 40 years experience in global oil & gas exploration and production
David Keddington		VP, Global Supply Chain at Transocean, Ltd. with over 20 years experience in corporate financial planning, project management, and engineering
Karl Winter		Ocean Engineer, executive, and entrepreneur with over 30 years experience in offshore oil & gas services and equipment fabrication



The Board and Management Team represent approximately 80% of current OML shareholders

Mission Statement & Objective

Ocean Minerals LLC's mission is to responsibly transform deep ocean natural resources into prosperity in a responsible and sustainable manner by applying a precautionary approach and by employing world-class technology and expertise.

Our objective is to be a preferred deepwater resource company creating long-term value through excellence and caring for people and our planet, particularly the ocean.



Ocean Minerals LLC
1414 Enclave Parkway
Houston, TX 77077

Telephone: +1 346 241 0690
Email: info@omlus.com
www.omlus.com



Moana Minerals Ltd.
Kiva Marine Ltd.
Grand Central Place, Main Road
Avarua, Rarotonga
Cook Islands

Email: info@moana.co.ck
www.moana.co.ck
www.moanaminerals.com