

A white electric car is driving away from the viewer on a long, straight asphalt road that stretches into the distance. The road is flanked by dry, yellowish-brown desert vegetation. In the background, a line of wind turbines stands against a pale, hazy sky. To the right of the road, a series of solar panels are visible, angled towards the sun. The overall scene conveys a sense of sustainable energy and forward motion.

Revolutionizing the Mineral Supply Chain for Fast Growing EV Demand

Analyst Day presentation, 17 May 2021

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Agenda.

90 min Presentation	Area	Presenter
	Introduction	Scott Leonard, CEO of SOAC
10 min	Company overview	Gerard Barron, Chairman & CEO
15 min	Valuation, project economics & financing	Craig Shesky, CFO
10 min	The ESG case for nodules	Erika Ilves, Chief Strategy Officer
10 min	Regulatory context	Corey McLachlan, ISA & Sponsoring States
15 min	Developing projects on schedule & on budget	Tony O’Sullivan, Chief Development Officer
10 min	Collecting nodules from the seafloor	Jon Machin, Head of Offshore Engineering
10 min	Marine environment: baselining & mitigating impacts	Dr Michael Clarke, Environmental Program Manager
10 min	Processing nodules into metal products	Dr Jeff Donald, Head of Onshore Processing
60 min	Q&A	

DeepGreen Metals

+

SOAC

=

**the
metals company**

Investment highlights.

The world's largest estimated source of battery metals

Enough nickel, copper, manganese and cobalt in situ to electrify 280 million EVs¹

Four battery metals in high concentrations in a single resource

3.2% nickel equivalent² vs. 0.3-1.9% for the world's largest undeveloped nickel projects

Low-cost production

Expecting to be the 2nd lowest cost nickel producer on the planet³

70-99% reduction of lifecycle ESG impacts

Including zero solid waste, 90% less CO₂ equivalent emissions⁴

Attractive valuation with significant upside

0.35x P/NAV multiple only on 22% of the resource vs. 1.6x median for producing peers

Best-in-class strategic investors / partners

GLENCORE

Offtakes
Processing



MAERSK

Vessel operations



Offshore collection
technology

HATCH

Onshore processing
technology



“EV battery in a rock”

¹ Assuming 75kWh batteries with NMC811 chemistry and nodule resource grade and abundance, “Where Should Metals for the Green Transition Come From?”, Paulikas et al, LCA white paper, April 2020. Calculation based on estimated contained value of nickel.

² Nickel equivalence calculation uses NORI-D Model price deck as stated on page 53. Based on converting the economic value of other metals into nickel using the average commodity prices across life of mine for NORI-D. Life of mine model based on Canadian NI 43-101 Compliant Preliminary Economic Assessment (PEA) for NORI-D Area, AMC, February 2021.

³ Canadian NI 43-101 Compliant Preliminary Economic Assessment (PEA) for NORI-D Area, AMC, February 2021; Metals Cost Curve, Wood Mackenzie, August 2020.

⁴ “Where Should Metals for the Green Transition Come From?”, Paulikas et al, LCA white paper, April 2020. “Life cycle climate change impacts of producing battery metals from land ores versus deep-sea polymetallic nodules”, Paulikas et al, December 2020.

Business combination.

The business - Founded in 2011, DeepGreen Metals, Inc. is the developer of the world's largest estimated deposit of battery metals¹—seafloor polymetallic nodules—with the lowest expected lifecycle ESG footprint on the planet and people²

Transaction size - Sustainable Opportunities Acquisition Corp. (NYSE: SOAC) is a special purpose acquisition company with \$300mm of cash in trust
- Fully committed, upsized \$330 million PIPE

Valuation - Pro forma equity value of \$2.9bn
- Attractively valued entry multiple for a unique resource with significant upside, proven technology, timing of estimated first production/ revenue aligned with expected significant shortages in key battery metals
- 2027E EBITDA of \$2bn³
- Net present value of \$6.8n³ for NORI-D
- Net present value of \$31.3bn³ for the full portfolio

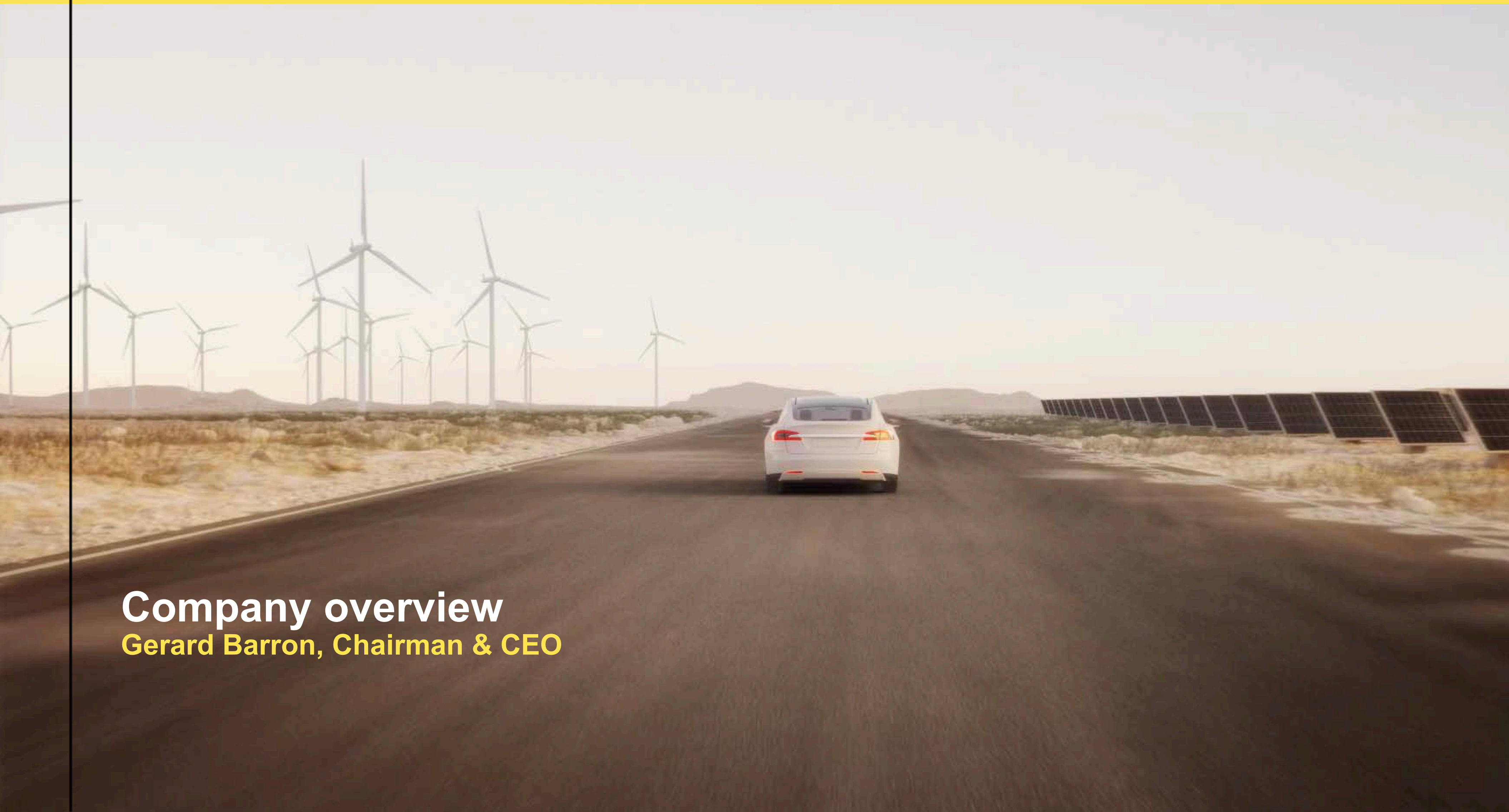
Capital structure - DeepGreen shareholders rolling 100% of their equity
- \$570mm net cash (assuming no redemptions) expected to fully fund operations to first expected revenue in 2024

Pro Forma Ownership - 76% existing shareholder equity roll over
- 12% SPAC and founder shares
- 11% PIPE investors

¹ Global Nickel Industry Cost Summary, Wood Mackenzie, August 2020.

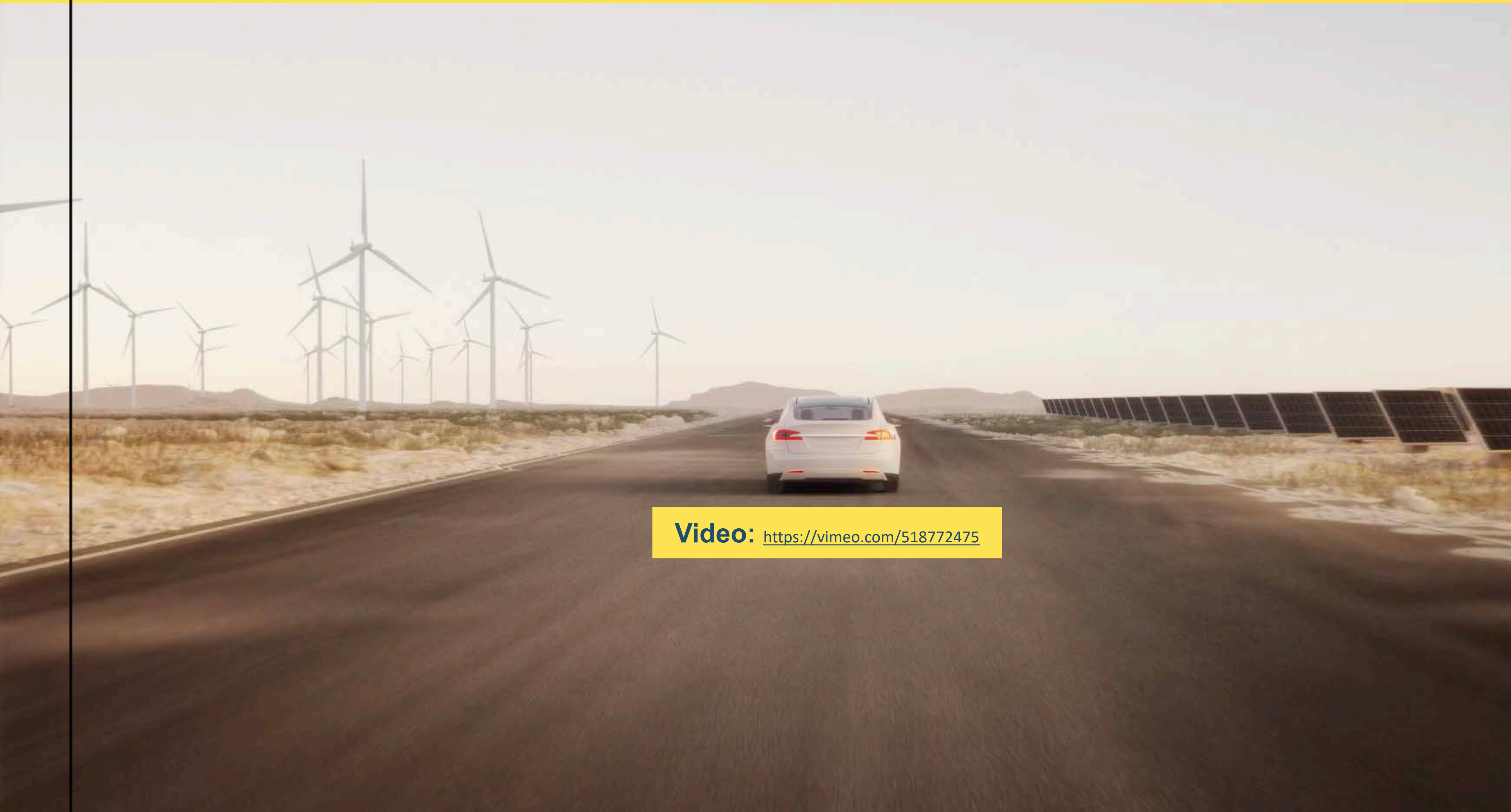
² "Where Should Metals for the Green Transition Come From?", Paulikas et al, LCA white paper, April 2020.

³ 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, March 2016. Canadian NI 43-101 Resource Statement for full field financial model (internal DeepGreen development scenario). Net present value as of January 1, 2021, assuming 9% discount rate.



Company overview

Gerard Barron, Chairman & CEO



Video: <https://vimeo.com/518772475>

**Using a rock to
change the world.**



**Our mission is to build
a carefully managed metal commons
that will be used, recovered, and
reused again and again—for millennia.**



Nickel Sulfate

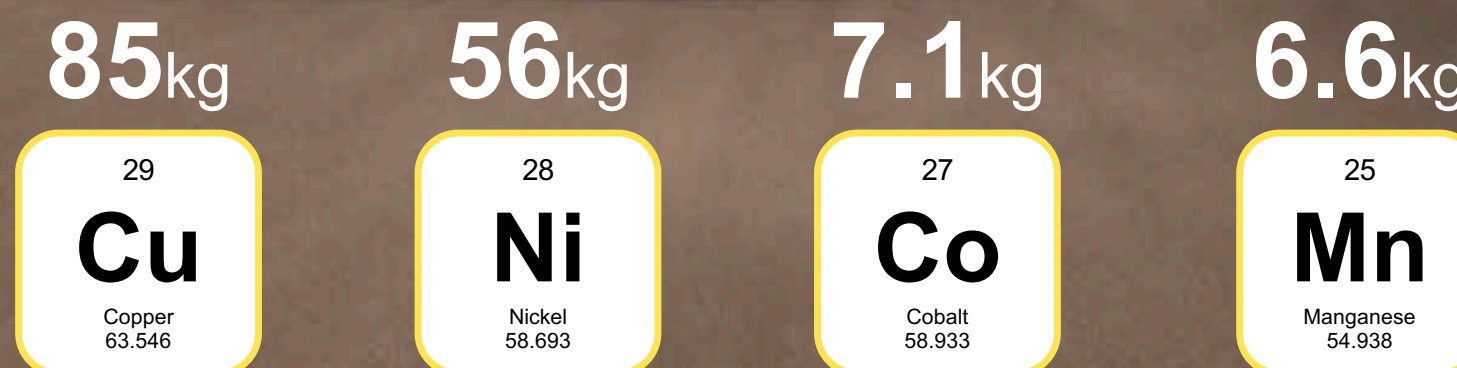
28

Ni

58.693

[Ar]3d⁸4s²

EV revolution is metal intensive.

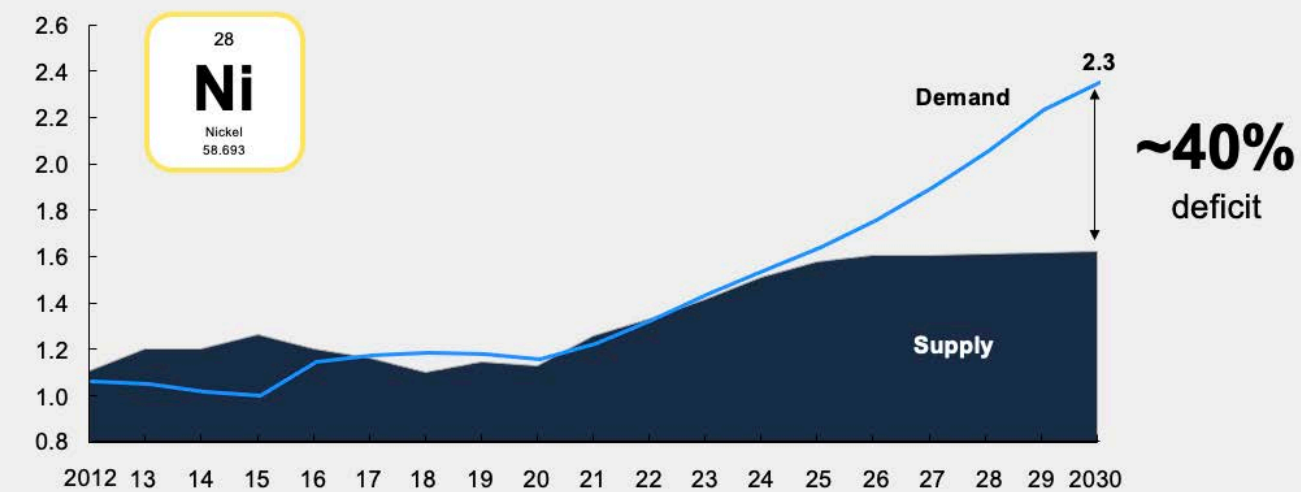


Metal requirements for a 75kWh battery with NMC cathode chemistry and average copper contents for electric harness and connectors. Different battery size and cathode chemistries would have different metal requirements.

Four upstream challenges EV manufacturers should be worried about.

Availability: Shortages expected

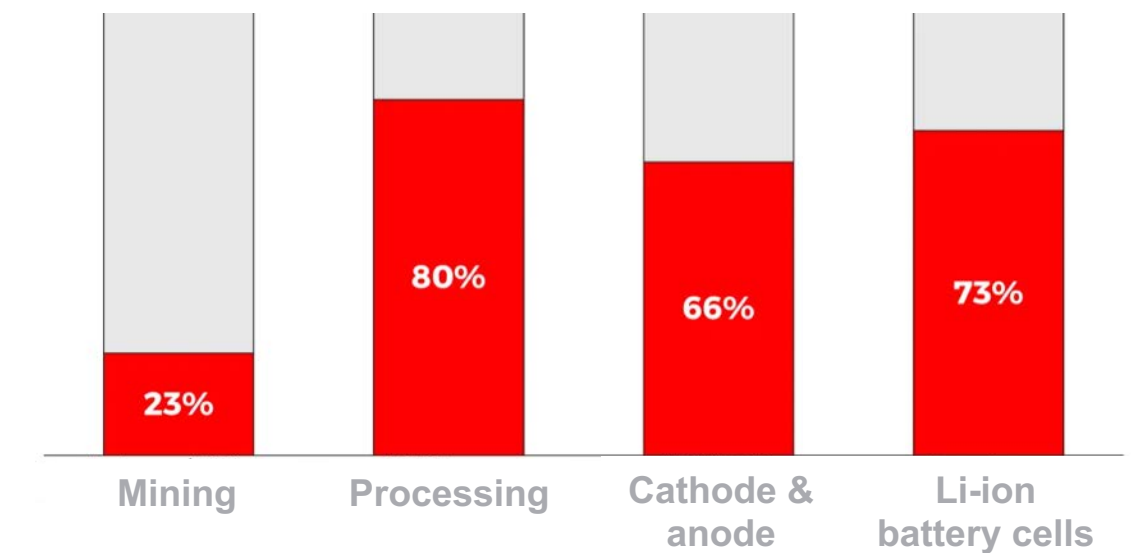
Nickel class 1 deficit without greenfield developments
Global refined nickel supply and demand, in Mt¹



Security: China dominates supply²

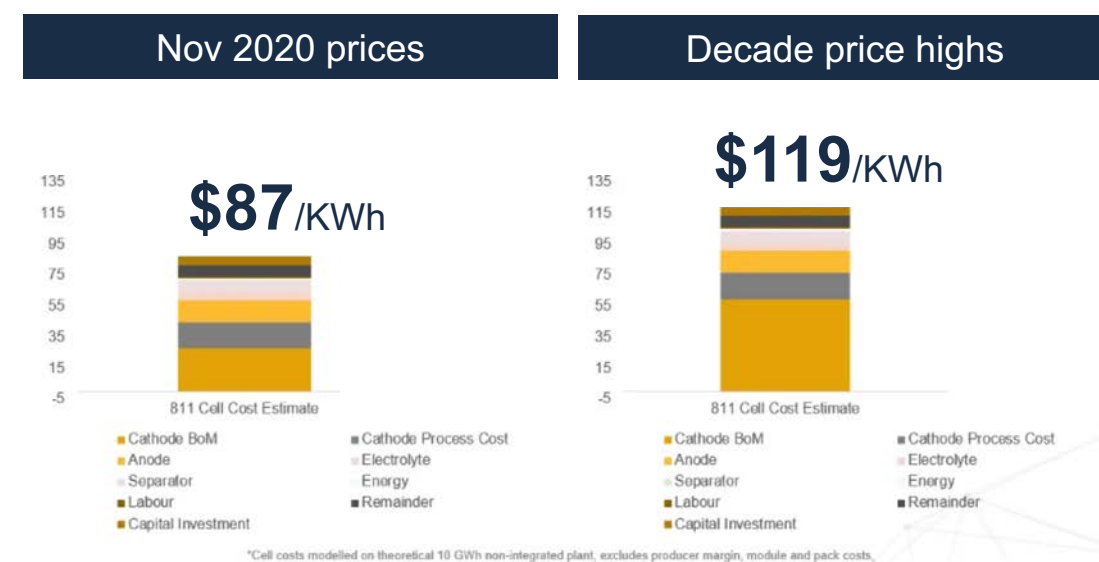
China's share of production, 2019

Lithium, cobalt, nickel, manganese, cathode, anode & cells



Price: EV/ICE price parity?³

What happens to next generation NMC 811 Li-ion battery costs if critical mineral shortages see price increases?



ESG: The dirty secret

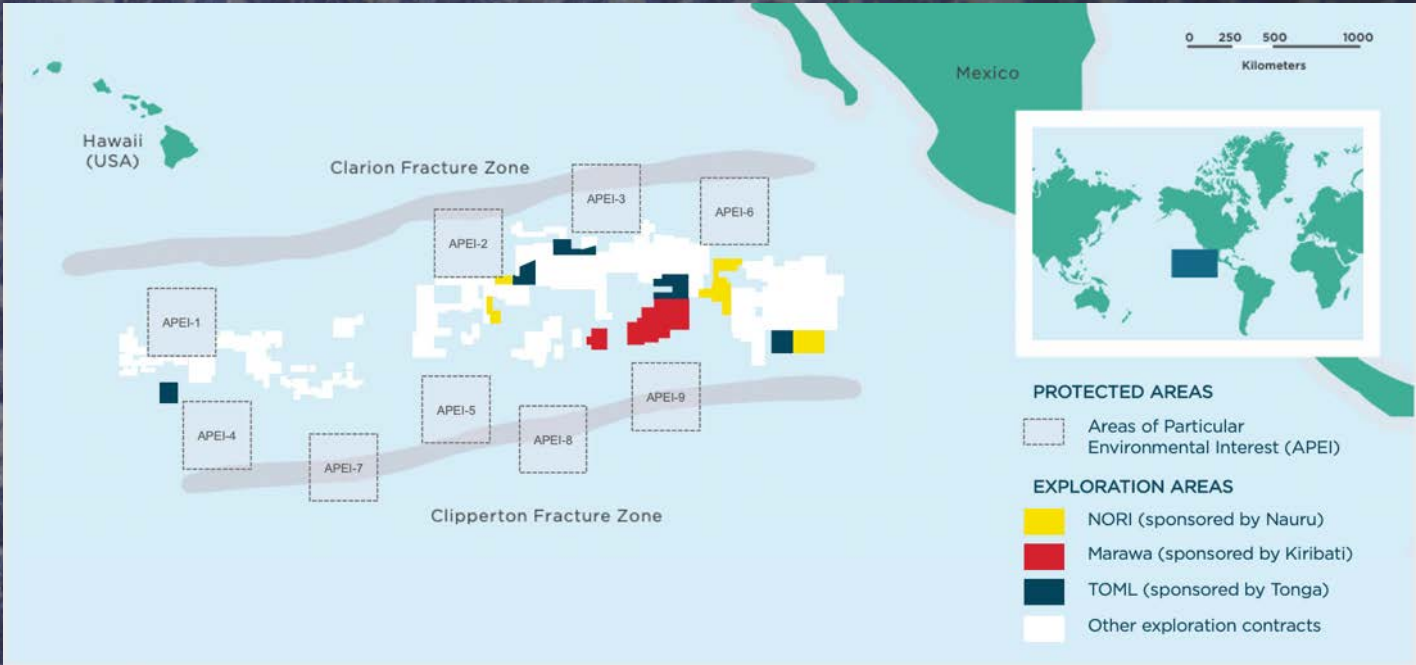


¹ "How clean can the nickel industry become?", McKinsey, September 2020.

² Graphite based on natural flake, spherical and anode material. Can also be synthetically manufactured; Benchmark Mineral Intelligence

³ Benchmark Minerals Intelligence, Dec 1, 2020

Solving availability:
in situ resource
sufficient to electrify
the entire U.S. car fleet.



Exploration contract area	NORI ¹	TOML ²	Marawa
Sponsoring state	Republic of Nauru	Kingdom of Tonga	Republic of Kiribati
Exploration area	74,830 km ²	74,713 km ²	74,990 km ²
Technical resource statement	Yes	Yes	Resource definition work in progress
Polymetallic nodules Inferred resource	866 ⁴ million tonnes (wet)	756 million tonnes (wet)	--
Metal grade	25 Mn	29.5%	29.2%
	28 Ni	1.3%	1.3%
	29 Cu	1.1%	1.1%
	27 Co	0.2%	0.2%
Electric vehicles <i>in situ</i> resource sufficient for ³	150 million EVs	130 million EVs	--

¹ 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.

² Canadian NI 43-101 Compliant TOML Clarion Clipperton Zone Project Mineral Resource Estimate, AMC, July 2016.

³ Assuming 75kWh batteries with NMC811 chemistry and nodule resource grade and abundance; “Where Should Metals for the Green Transition Come From?”, Paulikas et al, LCA white paper, April 2020. Calculation based on estimated contained value of nickel.

⁴ Canadian NI 43-101 and SEC Regulation S-K (Subpart 1300) Compliant NORI Area D Clarion Clipperton Zone Mineral Resource Estimate, AMC, March 2021 – 11 Mt inferred @ 1.4% Ni, 1.1% Cu, 0.1% Co and 31.0 % Mn and 15.6 Kg/m2 abundance, 341Mt Indicated @ 1.4% Ni, 1.1 %Cu, 0.1% Co and 31.2% Mn and abundance 17.1Kg/m2, 4 Mt Measured @1.4% Ni, 1.1% Cu, 0.1% Co and 32.2% Mn and 18.6 Kg/m².

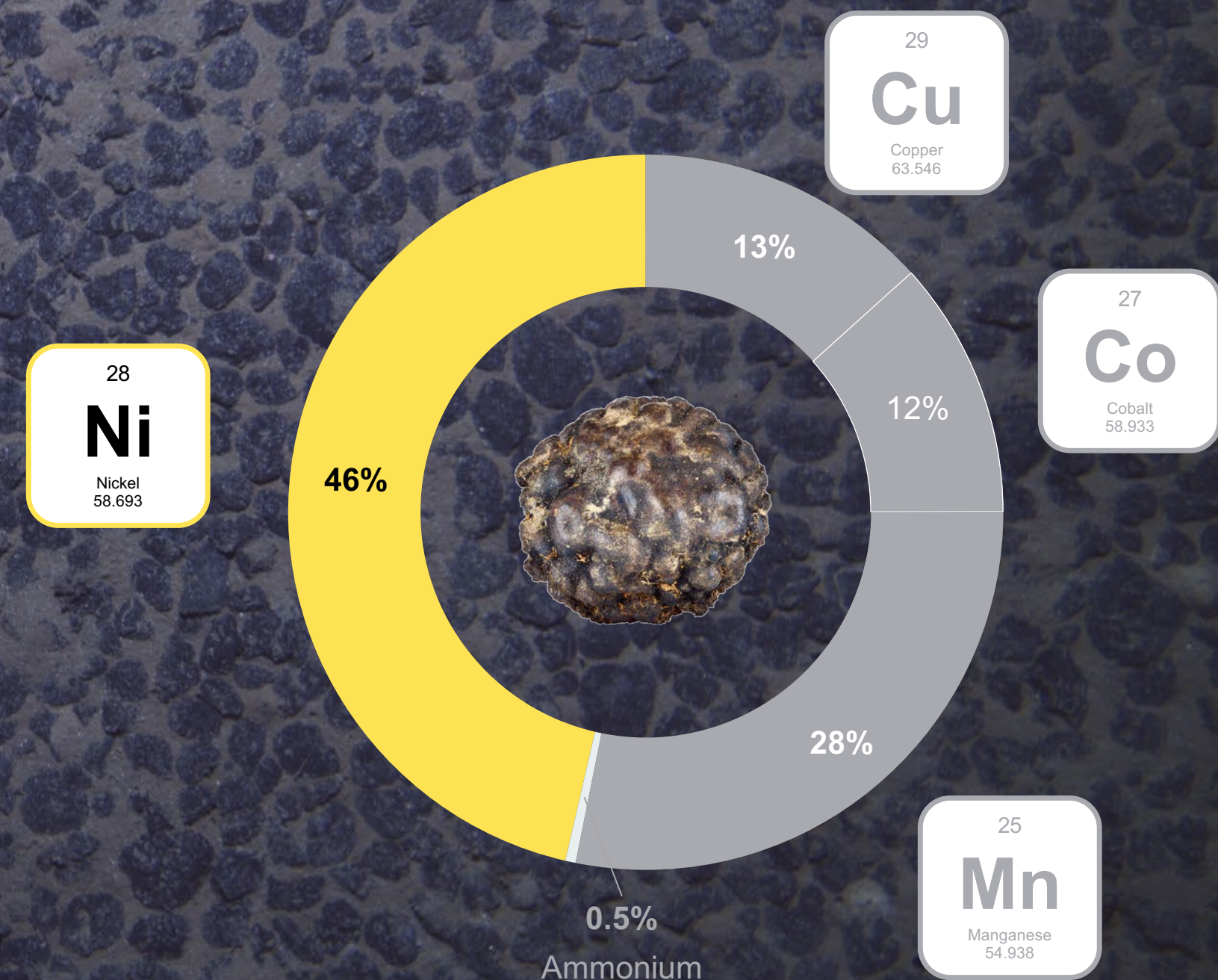
Solving availability: nickel for nickel-rich battery chemistries.

920,000 tonnes
Expected nickel supply deficit, 2030¹

120,000 tonnes
Expected production, NORI-D²

~500,000 tonnes
Production potential, NORI+TOML³

NORI-D project revenue by product²

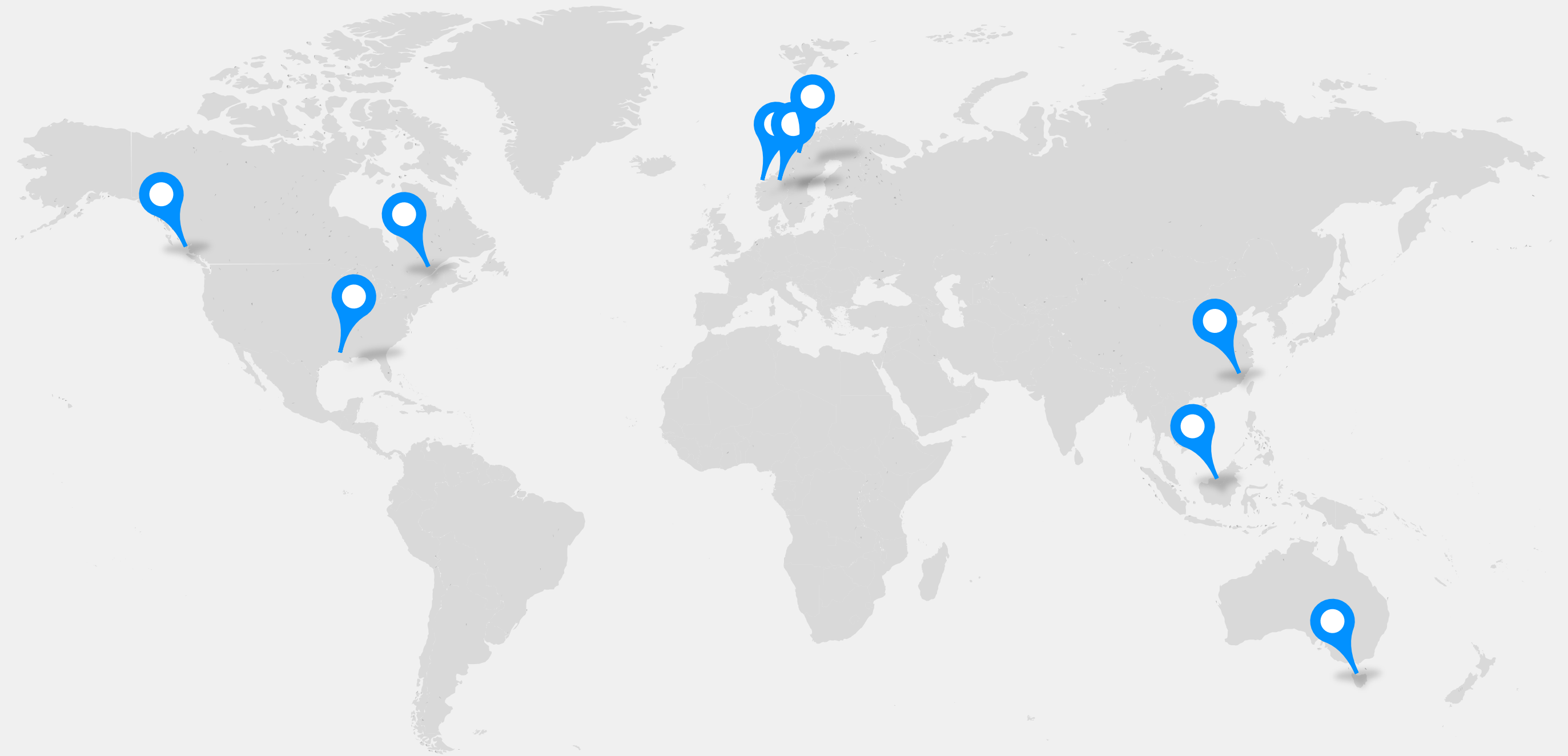


¹ "How clean can the nickel industry become?", McKinsey, September 2020.

² 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.

³ Canadian NI 43-101 Resource Statement for full field financial model (internal DeepGreen development scenario).

**Solving security:
we can localize our
onshore plants on
any continent.¹**

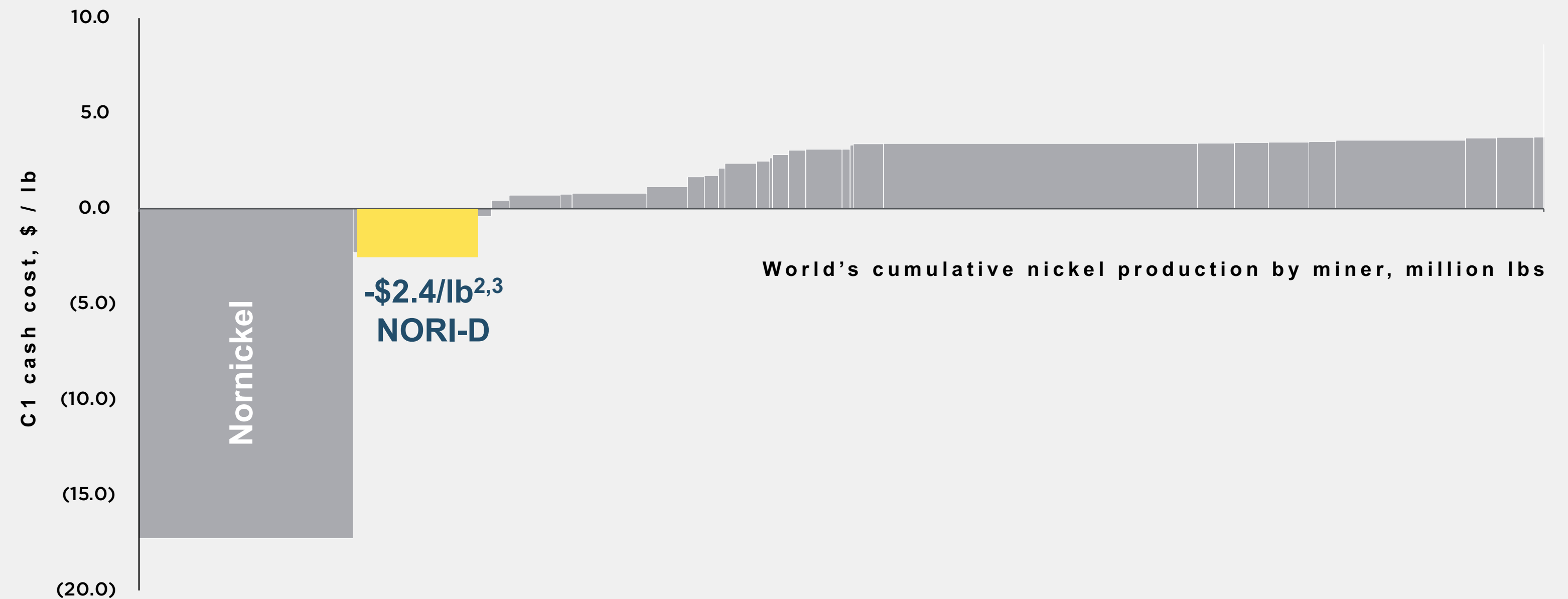


¹ GSL Location Study prepared for the company. Locations selected based on access to deep-water port, access to renewable power and proximity to manganese and battery customers.

Solving price:
we expect to become
the second lowest-cost
nickel producer
in the world.

Nickel C1 cost curve on a by-products' basis¹

C1 Cash Cost represents all direct costs, incl. mining, processing, freight, SGA minus revenue from by-products



¹ Nickel C1 Cost Curve, Wood Mackenzie, August 2020.

² Average for the steady state years 2030-45.

³ Canadian NI 43-101 Compliant Preliminary Economic Assessment (PEA) for NORI-D Area, AMC, February 2021.

Solving ESG footprint:
we expect to be able to
compress most of it.

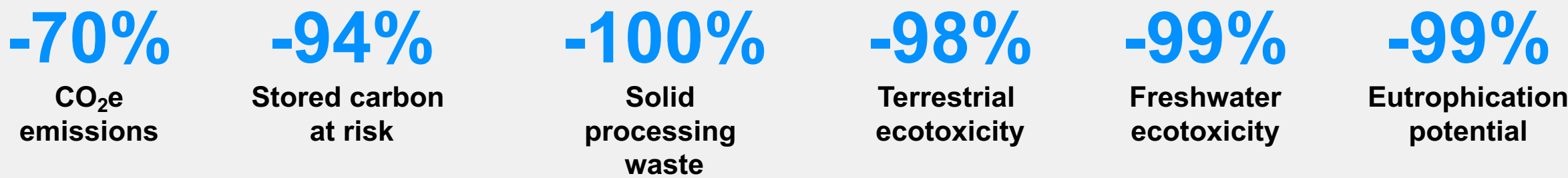
Land ores vs. nodules

Resource use



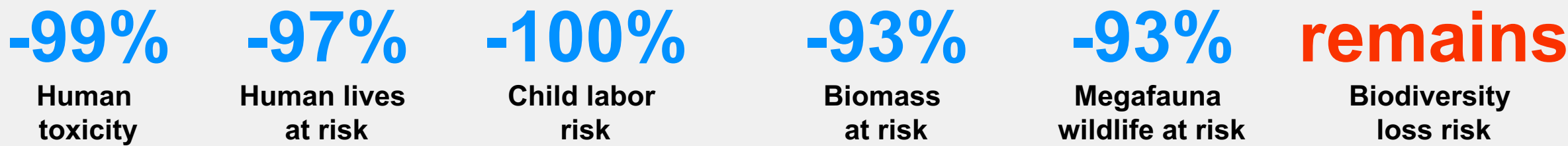
Climate change

Habitat damage



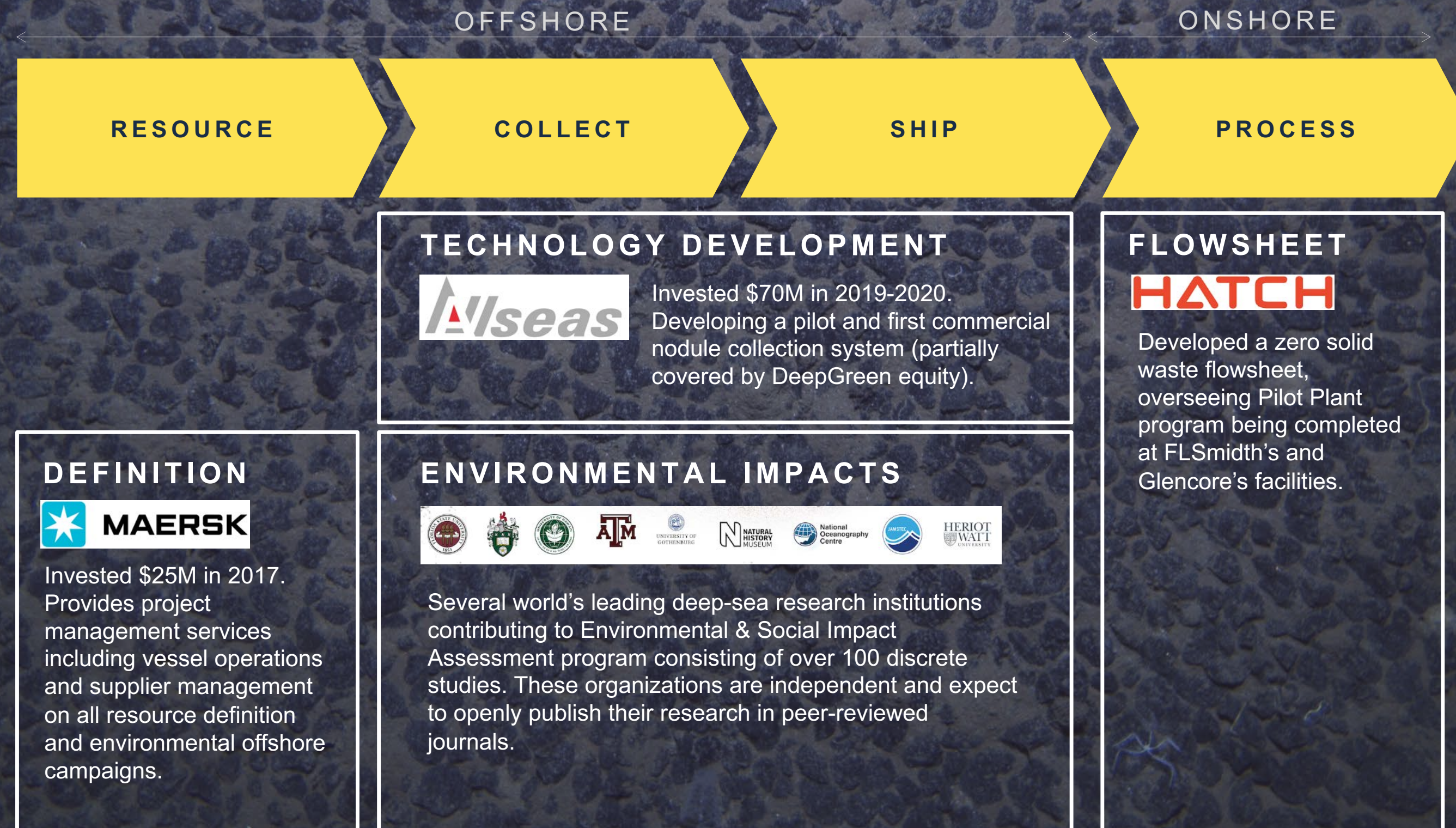
Humans

Wildlife



Note: Lifecycle analysis done on a cradle-to-gate basis including the mining/collection phase, transport, processing & refining phase.
Source: "Where Should Metals for the Green Transition Come From?", Paulikas et al, LCA white paper, April 2020.

World-class partners: why we can move faster than anyone else.



Key milestones ahead.

2011-today

Funding

- ✓ ~\$200M raised prior to the SOAC transaction

Resource

- ✓ Exploration rights to three nodule areas in the CCZ
- ✓ Canada & US standards compliant resource statements on NORI & TOML

Offtakes

- ✓ 50% of Ni & Cu to Glencore from NORI area

Vessel operations

- ✓ Partnership with Maersk
- ✓ 9 offshore campaigns

Collecting nodules

- ✓ Strategic partnership with Allseas
- ✓ Pilot system designed, lab tested, long-lead items procured
- ✓ Production vessel acquired

Processing nodules

- ✓ Zero-waste flowsheet with Hatch
- ✓ Lab-tests at KPM
- ✓ Pilot plant program in progress with FLS and XPS

Environmental and social impacts

- ✓ 5 comparative lifecycle assessments
- ✓ The world’s most comprehensive seafloor-to-surface ocean research in progress in partnership with the world’s leading institutions

Q3&4 2021

- Offtake: NiCuCo, P0
- Offtake: Mn silicate, P0
- Pilot: onshore processing
- EIS: collection pilot, CCZ
- MoU: pyromet plant, P0
- Contract: collection, P0

2022-2023

- Pilot: collection, Atlantic
- Pilot: collection, CCZ
- Pilot: onshore refining
- EIS: NORI-D production
- Application: ISA-NORI Exploitation Contract
- Offtakes: EV battery precursors, P1
- Offtakes: Mn silicate, P1

2024

- Contract: ISA-NORI
- **Commercial production:** P0, 1Mtpa nodules
- PFS & FS, construction, P1
- EIS: TOML-F
- Application: ISA-TOML Exploitation Contract

2025—

- **Commercial production:** P1, 10Mtpa nodules
- Contract: ISA-TOML
- Permitting new areas and bringing them into production

CCZ	The Clarion Clipperton Fracture Zone
ISA	International Seabed Authority
EIS	Environmental Impact Statement
PFS	Pre-feasibility Study
FS	Feasibility Study
P0	Project Zero
P1	Project One
Mpta	Millions of tonnes per annum

Fully funded

New funding required

Key business risks.

Resource

Size & quality of resource
Security of access

Market

Commodity price fluctuations
Changing product formats
Changing battery chemistries
NiCuCo intermediate payables
NiCuCo intermediate placement
Mn silicate value-in-use & pricing
Mn silicate placement
Geopolitical constraints on trade
Supply overcapacity

Regulatory

Exploit. Regs—unworkable terms
Exploit. Regs—delayed adoption
Exploitation Contract—delayed grant
Exploitation Contract—rejection

Technology

Nodule collection—feasibility
Nodule collection—efficiency
Nodule processing—feasibility
Nodule processing—recoveries

Production

Nodule collection—financing availability
Nodule collection—build delays
Nodule collection—system reliability
Nodule collection—system CAPEX overruns
Nodule collection—system OPEX overruns
Nodule processing—site availability
Nodule processing—financing availability
Nodule processing—build delays
Nodule processing—plant CAPEX overruns
Nodule processing—plant OPEX overruns

Social license

Calls for moratorium
Negative public perception
Brands boycotting marine minerals

Board of Directors: independent and mission-aligned.*



Gerard Barron
Chairman & CEO



Andrew Hall
Lead Independent



Eric Branderiz
Audit Committee Chair



Scott Leonard
Nom & Gov Comm Chair



Sheila Khama
Compensation
Committee Chair



Riva Krut
Sustainability Committee
Chair



Christian Madsbjerg
Sustainability / Nom &
Gov / Comp Committees



Andrei Karkar
Comp Committee

Leadership team.

26 people

Working for
The Metals Company

~250 people

Working on the project
incl. partners and
contractors



Gerard Barron
Chairman & CEO



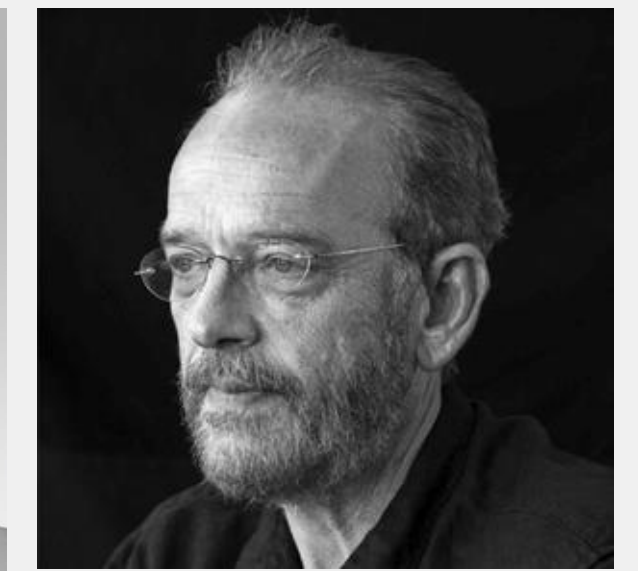
Craig Shesky
CFO



Tony O'Sullivan
Chief Development
Officer



Erika Ilves
Chief Strategy Officer



Dr Greg Stone
Chief Ocean Scientist



Corey McLachlan
Head of Sponsoring
State and ISA Relations



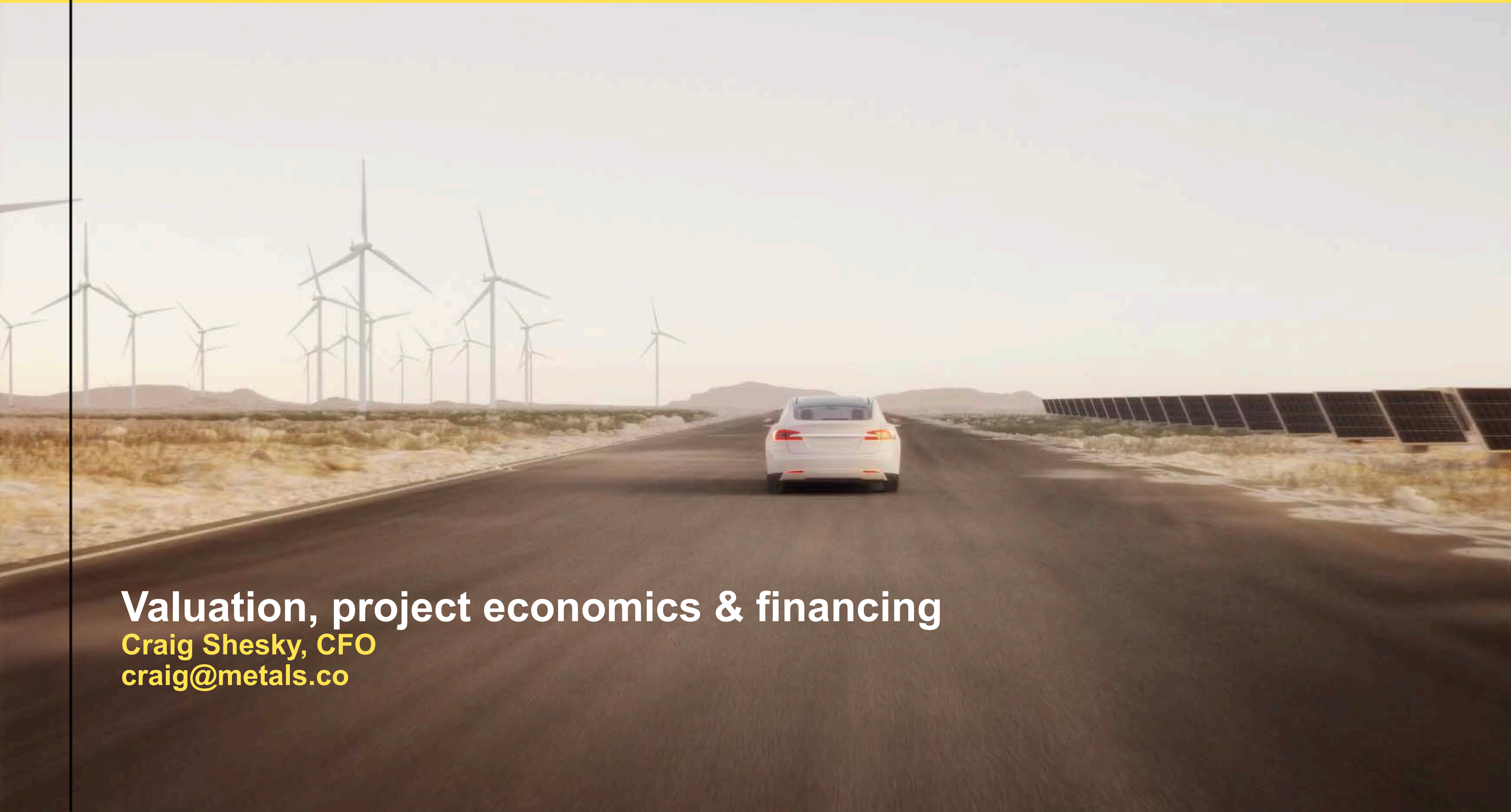
Jon Machin
Head of Offshore
Engineering



Dr Mike Clarke
Environmental Program
Manager



Dr Jeff Donald
Head of Onshore
Processing



Valuation, project economics & financing

Craig Shesky, CFO

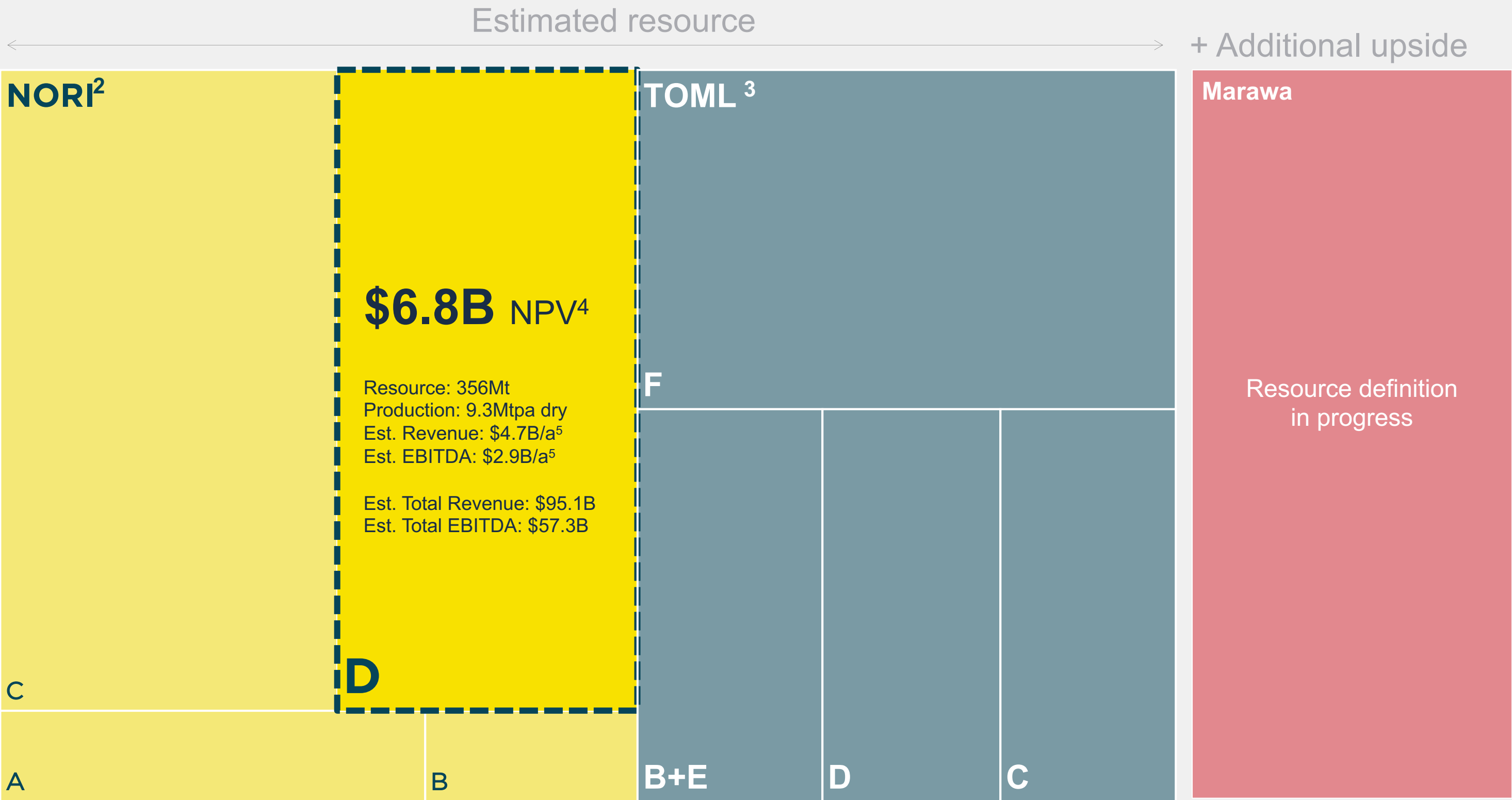
craig@metals.co

Project economics:
massive estimated
resource leads to
massive economic
upside.

Full portfolio¹
Estimated resource
\$31.3B NPV⁴

Resource: 1.6Bt
Production: 56Mtpa dry
Est. Revenue: \$20.2B/a
Est. EBITDA: \$12.9B/a

Est. Total Revenue: \$389B
Est. Total EBITDA: \$247B



¹ Canadian NI 43-101 Resource Statement for full field financial model (internal DeepGreen development scenario).
² 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.
³ Canadian NI 43-101 Compliant TOML Clarion Clipperton Zone Project Mineral Resource Estimate, AMC, July 2016.
⁴ January 1, 2021, assuming 9% discount rate.
⁵ Average estimated annual revenue and EBITDA 2030-2046.

Project economics:
NORI-D planned production
expected to reach ~\$2 billion
in EBITDA in 2027.

NORI-D NPV using current spot prices: ~\$10.5b³

Project economics – unleveraged¹

DISCOUNTED
CASH FLOW JAN 2021¹
Net present value at 9% discount rate

\$6.8 billion

EST. ANNUAL REVENUE² \$4.7 billion

EST. ANNUAL EBITDA² \$2.9 billion

EST. PRE-CONSTRUCTION CAPEX \$0.2 billion

EST. OFFSHORE CONSTRUCTION CAPEX \$2.2 billion

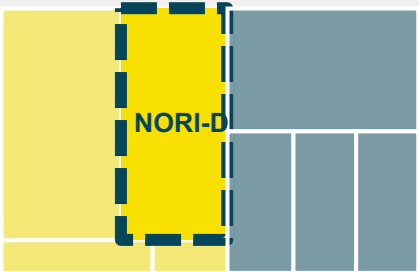
EST. ONSHORE CONSTRUCTION CAPEX \$4.8 billion

\$USD millions

Financials	Life of Project	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2043	2044	2045	2046
Revenue	95,090	-	-	-	251	1,172	2,253	3,677	4,409	3,780	4,889	5,459	5,190	5,124	4,823	4,423	4,230	3,749	3,203
Operating costs	37,761	64	75	88	215	751	1,410	1,693	1,906	1,432	1,821	2,067	1,969	1,939	1,818	1,678	1,613	1,439	1,225
EBITDA	57,330	(64)	(75)	(88)	35	421	843	1,983	2,503	2,348	3,068	3,392	3,221	3,185	3,005	2,745	2,617	2,309	1,978
Depreciation	9,476	-	-	-	182	451	707	756	835	864	726	651	654	648	583	149	132	95	95
EBIT	47,854	(64)	(75)	(88)	(147)	(30)	136	1,227	1,668	1,483	2,342	2,741	2,567	2,538	2,422	2,595	2,485	2,214	1,883
Taxes and Royalties	16,318	-	-	-	10	46	88	351	467	573	835	965	908	897	850	854	817	726	616
Earnings	31,535	(64)	(75)	(88)	(157)	(76)	49	876	1,201	910	1,506	1,776	1,659	1,640	1,571	1,741	1,668	1,489	1,268
Cash Flow	Total																		
Revenue	95,090	-	-	-	251	1,172	2,253	3,677	4,409	3,780	4,889	5,459	5,190	5,124	4,823	4,423	4,230	3,749	3,203
Opex	(37,524)	-	-	-	(206)	(751)	(1,410)	(1,693)	(1,906)	(1,432)	(1,821)	(2,067)	(1,969)	(1,939)	(1,818)	(1,678)	(1,613)	(1,439)	(1,225)
Capex	(10,607)	(64)	(142)	(297)	(893)	(1,666)	(2,151)	(617)	(1,035)	(854)	(360)	(59)	(59)	(168)	(168)	(168)	(81)	(106)	(559)
Taxes and Royalties	(16,318)	-	-	-	(10)	(46)	(88)	(351)	(467)	(573)	(835)	(965)	(908)	(897)	(850)	(854)	(817)	(726)	(616)
Net Cash Flow	30,641	(64)	(142)	(297)	(859)	(1,291)	(1,395)	1,015	1,002	921	1,872	2,368	2,254	2,120	1,986	1,722	1,719	1,478	803
Cumulative Cash Flow	30,641	(64)	(206)	(503)	(1,361)	(2,652)	(4,047)	(3,032)	(2,031)	(1,110)	762	3,130	5,384	7,503	9,490	26,641	28,360	29,838	30,641

¹ Company economics expected to be different from fundamental unleveraged project economics as TMC pursues capital light project development strategies and non-dilutive sources of capital resulting in e.g., lower CAPEX/higher OPEX; higher return on equity.
² Average estimated annual production and revenue 2030-2046.
³ Based on spot prices as of May 12, 2021. Nickel price of \$17,797/ton (LME Spot Close), copper price of \$10,445/ton (LME Spot Close), cobalt price of \$44,645/ton (LME Spot Close) and manganese price of \$5.50/dmtu (SMM - Mn 44% Ore - CIF Tianjin).
Source: 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.

**Project economics:
high operating
margins on
conservative price
assumptions with
significant upside.**



NORI-D Financial Model

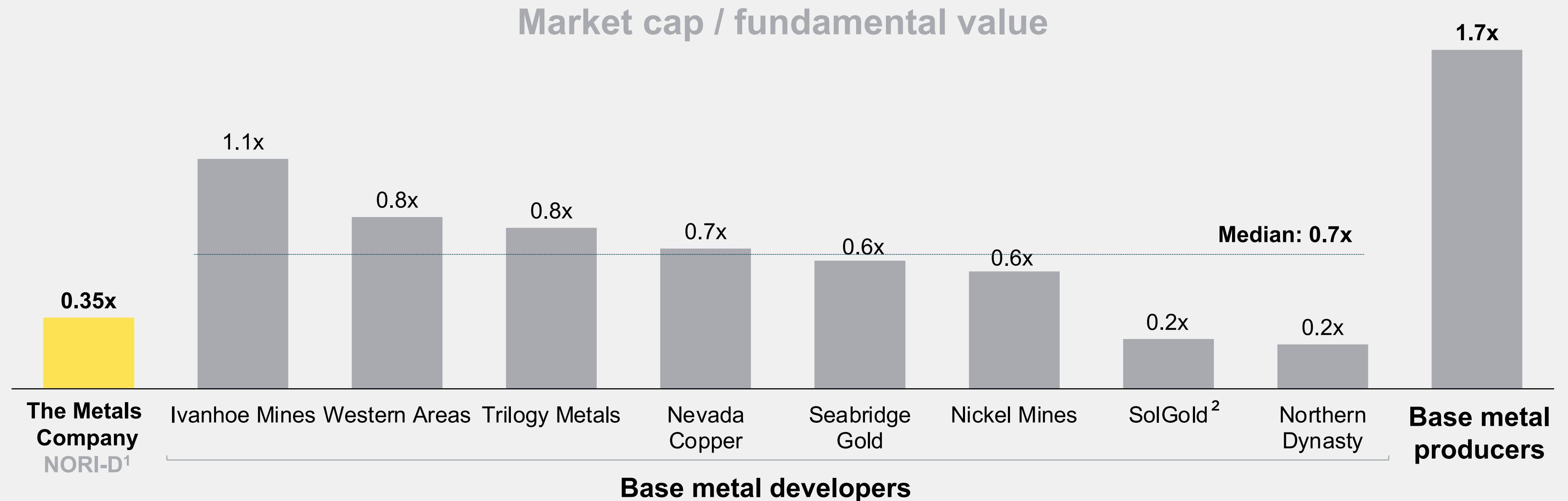
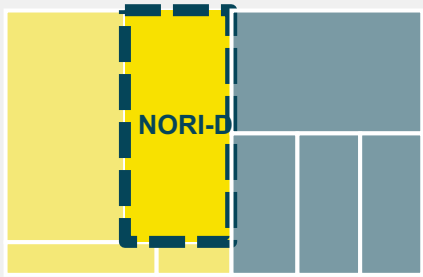
\$ billions unless otherwise noted

Prices			
	CRU forecast	Current spot	Delta
Nickel	\$16,106/t	\$17,797/t	10%
Copper	\$6,787/t	\$10,445/t	54%
Cobalt	\$46,416/t	\$44,645/t	-4%
Mn silicate	\$4.53/dmtu	\$5.50/dmtu	21%
Project economics—cumulative over project life			
Total revenue	95.1	110.9	17%
Nickel	44.0	47.7	
Copper	12.7	19.5	
Cobalt	10.4	10.7	
Mn silicate	27.2	32.6	
Total OPEX	37.5	37.5	0%
Total EBITDA	57.3	73.2	28%
EBITDA margin	60%	66%	5.7 pts
NPV ²	6.8	10.5	54%

¹ 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.

² January 1, 2021, assuming 9% discount rate.

Valuation:
significant discount
at its current valuation
compared to trading levels of
base metal producers.

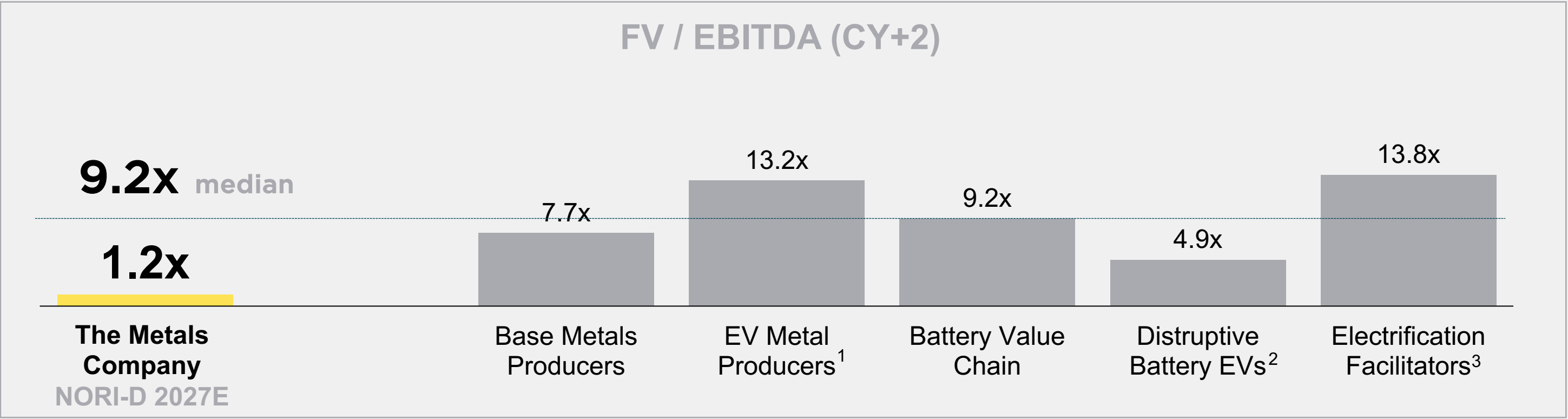
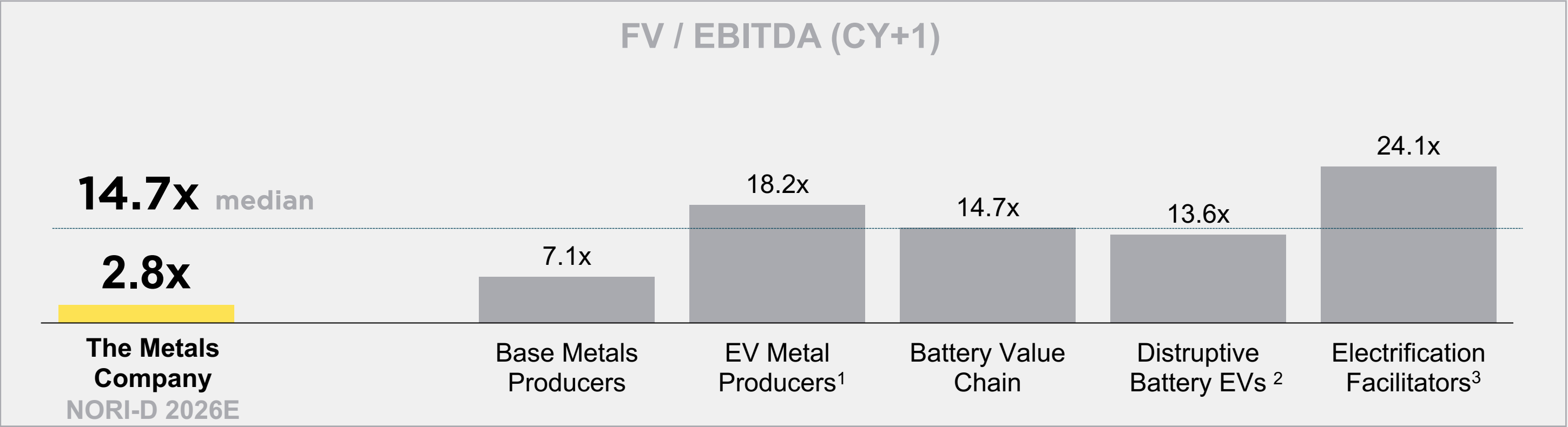
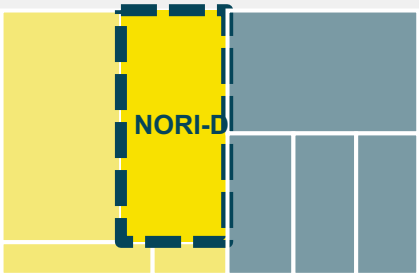


¹ Fundamental value calculation based on information provided in Canadian NI 43-101 and SEC Regulation S-K (Subpart 1300) Compliant NORI Area D Clarion Clipperton Zone Mineral Resource Estimate and associated financial model, AMC, March 2021.

² Fundamental value for SolGold based on median NAV from broker reports published by Hannam, Peel Hunt and Cantor Fitzgerald on February 5, 2021, January 19, 2021 and December 10, 2020, respectively.

Source: Market capitalization and NAV estimates as per FactSet as of May 7, 2021.

Valuation:
traditional miners
provide a long-term
floor valuation with
upside to more
disruptive peers in
the EV value chain.



¹ Quantumscape multiples based on 2027E and 2028E. Microvast multiples based on 2023E and 2024E.
² Disruptive battery EV multiples based on 2023E and 2024E. Proterra multiple based on 2024E and 2025E multiples.
³ Electrification facilitators multiples based on 2023E and 2024E. Chargepoint multiple based on 2025E and 2026E multiples. EVBox 2023E multiple was not considered as it exceeds 150x and its 2024E multiple was not considered due to the lack of a 2024E EBITDA projection.
Note: The Metals Company multiples based on 2026E and 2027E EBITDA for NORI-D.
Source: Firm value and EBITDA estimates per FactSet as of May 7, 2021 and company filings. Firm value and EBITDA projections stated in investor presentations at time of SPAC transaction used for Microvast, Proterra, Lion Electric, EVBox, EVGo.

Project finance:
Project Zero is
already funded.

Products	Production ¹
NiCuCo alloy	21Kt
Mn in silicate	331Kt

Products	Production ⁴
Nickel	119 Kt
Manganese	2,847 Kt
Copper	89 Kt
Cobalt	9 Kt
Fertilizer	254 Kt

PROJECT ZERO

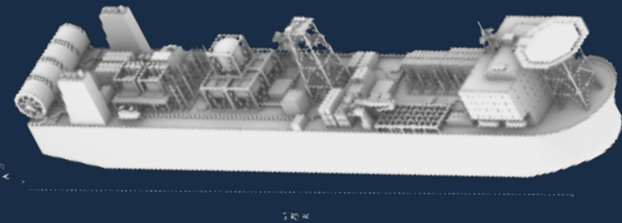
1.3Mt (wet)
1.0Mt (dry)

~\$193M

Construction CAPEX to start
commercial production^{2,3}

Production vessels

Hidden Gem acquired, conversion in
progress



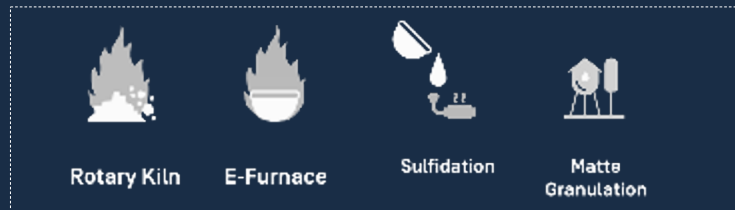
Collector robots

Procurement of lead items in
progress for pilot collector (#1)



RKEF lines (x0)

Planned tolling through existing facilities



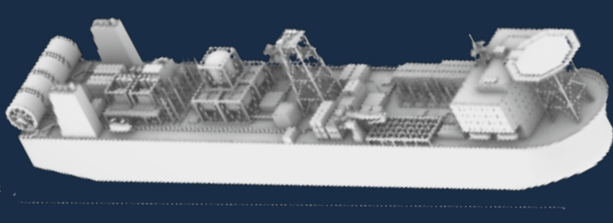
PROJECT ONE

12.2Mt (wet)
9.3Mt (dry)

~\$57.3billion
expected EBITDA
over NORI-D
project life

~\$7.0billion
expected construction
CAPEX to ramp up to
full run-rate production

Converted drillship



Purpose-built collection vessel



Support vessel



\$2.2billion
offshore
construction
CAPEX



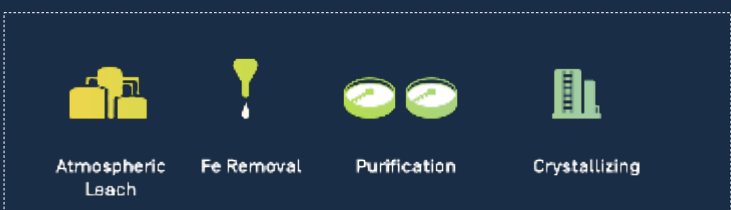
RKEF lines (x4)

New construction



Refineries (x2)

New construction



\$4.8billion
onshore
construction
CAPEX

¹ Production based on 1.0Mtpa (wet) with a single subsea collector.

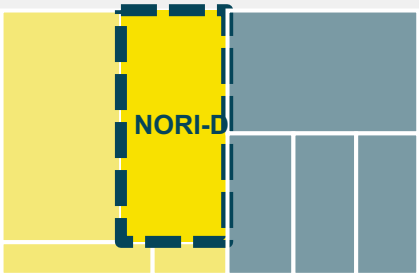
² Another collector will be added to the Hidden Gem production vessel in 2029. Associated CAPEX is included in Project One CAPEX.

³ \$163mm for Hidden Gem modification and \$30mm for Onshore Capex. Does not include 40mm of contingency allocation.

⁴ Total NORI-D stable state production including both Project Zero and Project One, 2030-2046 average.

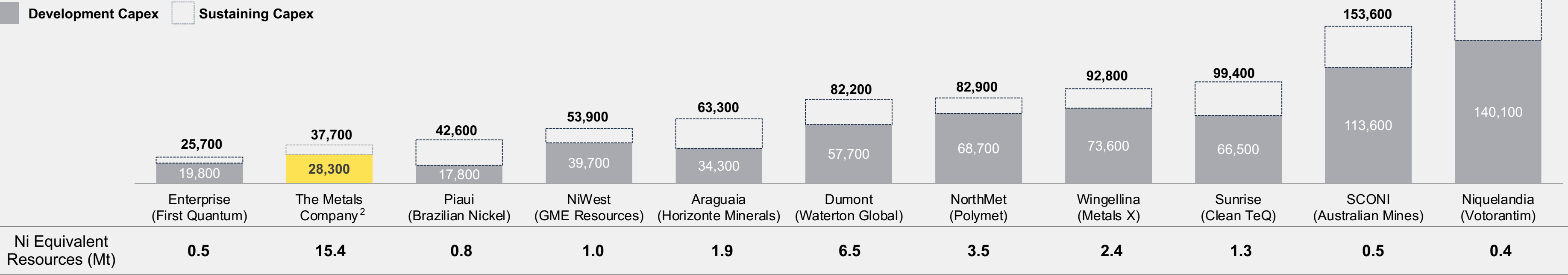
Source: Canadian NI 43-101 and SEC Regulation S-K (Subpart 1300) Compliant NORI Area D Clarion Clipperton Zone Mineral Resource Estimate and associated financial model, AMC, March 2021.

Project finance: low CAPEX intensity and low OPEX compared to peers.



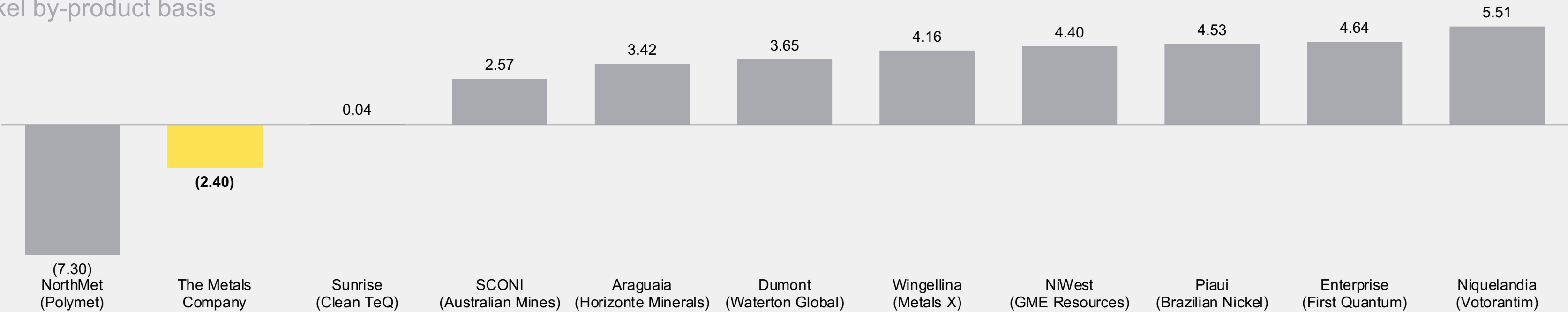
Capital intensity

CAPEX in \$US / average annual nickel equivalent tons produced¹



Unit cash costs

\$US / lb, nickel by-product basis



¹ Figures rounded to the nearest \$100.

² Based on estimated production between 2027 (run-rate year) – 2042. Calculations include nickel tonnage related to tolling. Development capex excluding tolling is \$33,500/T.

Note: Calculated using projections out to 2040. Assumes average price of \$16,106 per tonne of nickel, \$6,787 per tonne of copper, \$46,416 per tonne of cobalt, \$4.53 per dmtu of manganese, \$1,823 per ounce of gold, \$27 per ounce of silver and \$1,224 per ounce of platinum.

The nickel, copper, cobalt and manganese pricing is consistent with the pricing used in 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.

The gold, silver and platinum prices are based on spot prices as of May 12, 2021.

Source: Wood Mackenzie Reports. 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.

Project finance: Project One in capital planning phase, with significant flexibility.

\$7 billion CAPEX

**CAPEX-light
approach**

**Debt
financing**

Cash flow

Pursue lower CAPEX options:

- Offshore: convert more drillships instead of purpose build vessels
- Onshore: acquire distressed RKEF lines

Use partners' existing capital assets:

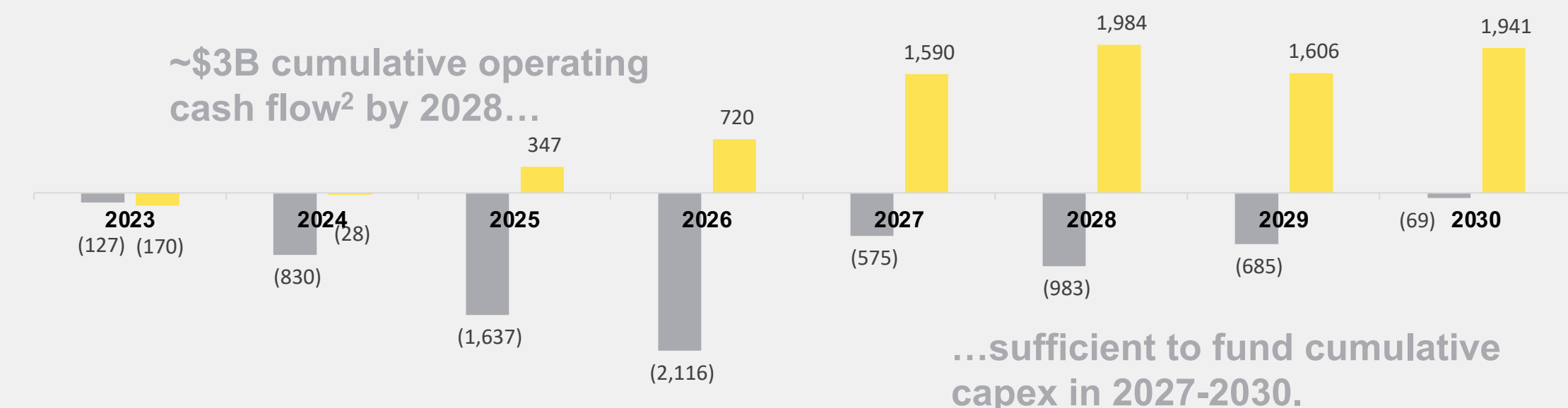
- Offshore: nodule collection contracts at fixed price per tonne
- Onshore: tolling nodules through existing RKEFs and intermediates through existing refineries

Pursue multiple sources of debt financing (illustrative):

- \$0.8-1 billion (25-33%) **US government supported capital** (discussions ongoing)
- \$0.5-0.75 billion (17-25%) **offtaker financing** (discussions ongoing)
- \$0.5-0.75 billion (17-25%) **uncovered term loan**
- \$1-1.5 billion (33-50%) **export credit agencies**

The tenor, amortisation profile and cost of debt will be available once a financing plan has been developed and market sounding has been conducted. The average cost of debt will depend on the final size of each of the various pockets of liquidity, and for the commercial debt, the risk allocation associated with the onshore project.

NORI-D CAPEX vs. positive cash flows¹



¹ 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.

² Cash flows from operations through mid 2028 at current metals prices as of May 12, 2021.

Project finance: lower offshore CAPEX option achieved for Project Zero and can be used for Project One.



Project Zero

Production vessel—conversion
~\$200 million

Expected CAPEX

=

<\$50 million [\$700 million new build price]

Acquisition cost by Allseas in Feb 2020

+

\$163 million

Conversion CAPEX budgeted in the IA



Project One

Production vessel—new build
\$1.3 billion

CAPEX (incl. contingency) budgeted in the
NORI-D IA model

Production capacity of one new build vessel
could be achieved with 3x converted vessels at
~\$200 million per conversion, providing us with:

- Lower overall CAPEX intensity
- Ability to scale CAPEX in increments

Project finance:
we can convert
CAPEX into OPEX
= lower margin /
higher ROE.

\$7 billion CAPEX

\$2.2billion
offshore CAPEX

\$4.8billion
onshore CAPEX

- **\$2.8**billion RKEF Lines (x4)
Structures and substation, raw material handling, rotary kilns, calcine transfer, electric furnaces, converter aisle.
- **\$2.0**billion Refinery (x2)
Leaching & purification, sulfate crystallization & packaging, reagents & utilities.

Option:
Commercial contracts
Award long-term contracts at a fixed price per ton and shift offshore asset CAPEX to contractor balance sheet

- Increase offshore OPEX
- Eliminate offshore CAPEX

Option:
Tolling contracts
Award long-term contracts at a fixed price per ton and shift onshore RKEF and refinery CAPEX to contractors' balance sheet

- Increase onshore OPEX
- Eliminate onshore CAPEX

\$503 revenue/dry ton

\$197
OPEX/dry ton

- \$137 onshore OPEX
- \$30 offshore OPEX
- \$27 shipping cost
- \$3 corporate cost

\$306
EBITDA margin (~60%)



Project finance:
we can reduce
onshore CAPEX by
reducing scope.

\$7 billion CAPEX

\$2.2 billion
 offshore CAPEX

\$4.8 billion
 onshore CAPEX

- **\$2.8** billion RKEF Lines (x4)
 Structures and substation, raw material handling, rotary kilns, calcine transfer, electric furnaces, converter aisle.
- **\$2.0** billion Refinery (x2)
 Leaching & purification, sulfate crystallization & packaging, reagents & utilities.

Option:

Produce and sell NiCuCo matte & Mn silicate:

- \$2.0 billion refinery capital eliminated
- Revenue reduced from \$503 to \$420 revenue / dry ton (85% of LME)

Project finance: Illustration of how we can finance onshore CAPEX with debt.

CAPEX-light approach

Debt financing

Cash flow

(\$mm)		2021	2022	2023	2024	2025	2026	2027	2028	2029
Onshore capital spend	\$4,756				476	616	1,708	563	810	582
Project-level equity / partners	\$1,756		200		150	200	560	190	265	191
Government supported capital	\$850				350	75	200	50	100	75
Export credit agencies (ECAs)	\$1,150					175	450	150	225	150
Uncovered term loan financing	\$500					75	200	50	100	75
Offtaker financing	\$500					75	200	50	100	75

Could be back-ended if secured with well-rated LCs

Drawdowns

Illustrative sequencing

- Discussions with governmental bodies around the financial support they will provide to the project are already ongoing
- Once these discussions reach a developed stage, the sizing of the other sources of liquidity could be firmed up
- Bank lenders will require a 12-18 month lead time to perform the required due diligence and make a financing package available
- ECAs will be engaged throughout the process, particularly when various export contracts are awarded
- Offtaker financing could be arranged with a quicker timeframe, and off-takers would be engaged once there is clarity on the bank and ECA financing package

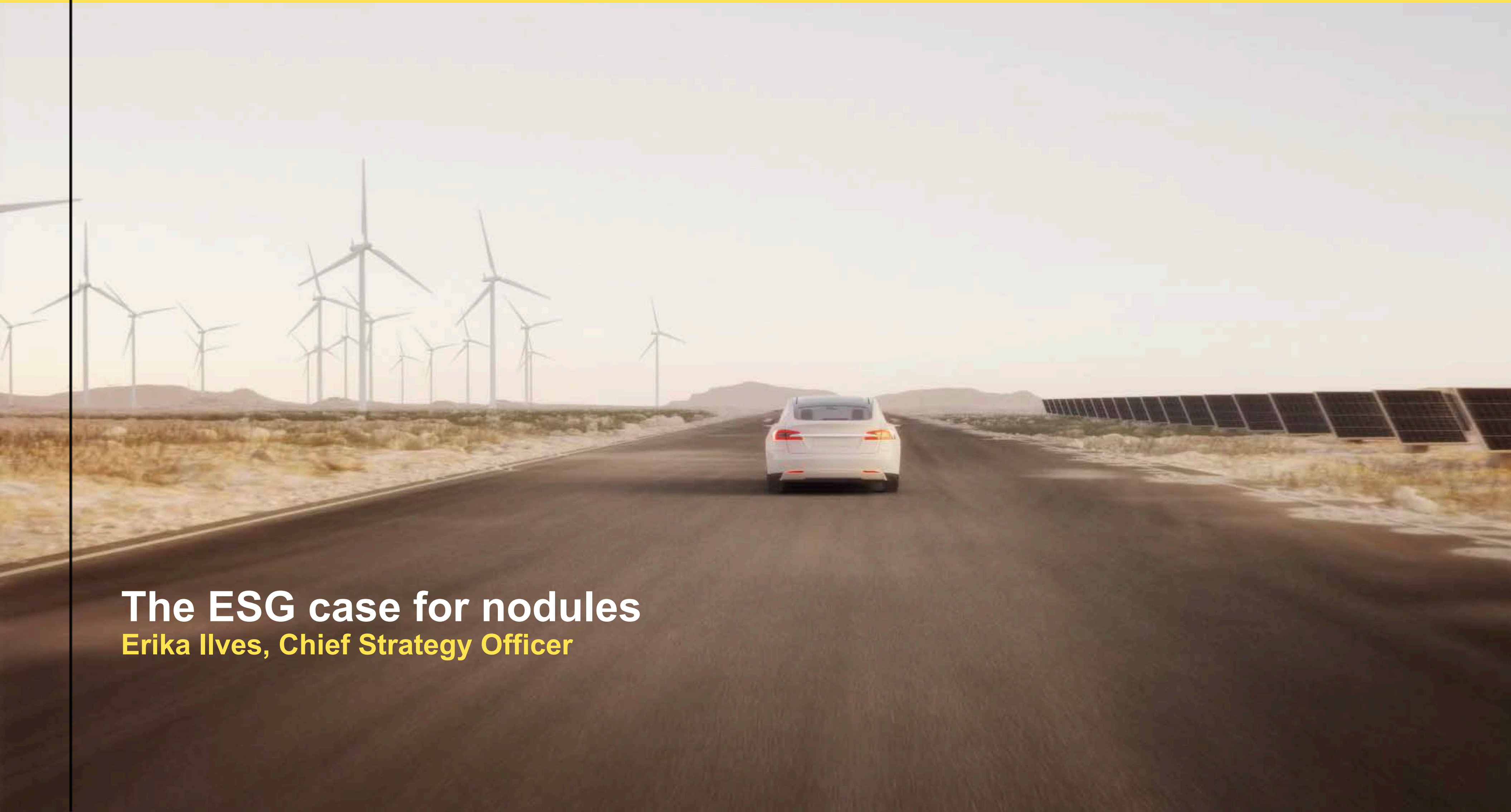


Project finance: our capital plan has many precedents for non-dilutive financing.

Precedent examples of similar financing strategies



¹ Base metal producers include Southern Copper, OZ Minerals, Freeport McMoRan, Antofagasta, Lundin Mining and First Quantum Minerals.
Source: FactSet. Leverage data based on market data as of May 7, 2021.



The ESG case for nodules

Erika Ilves, Chief Strategy Officer

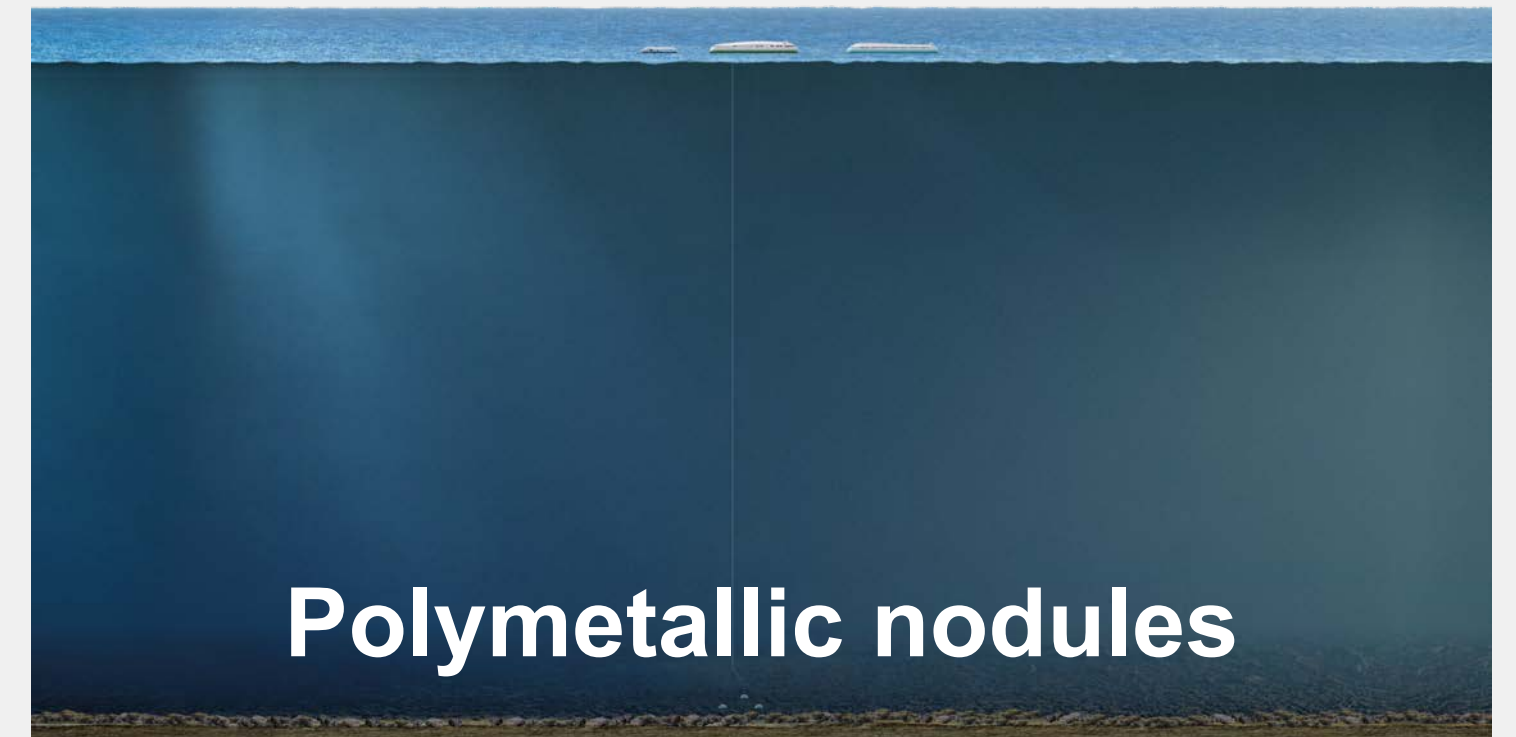
Primary metal mining is not sustainable.



Nickel laterites

1-10

million years for
nickel laterite to form through
wet leaching of unweathered
rock under rainforests



Polymetallic nodules

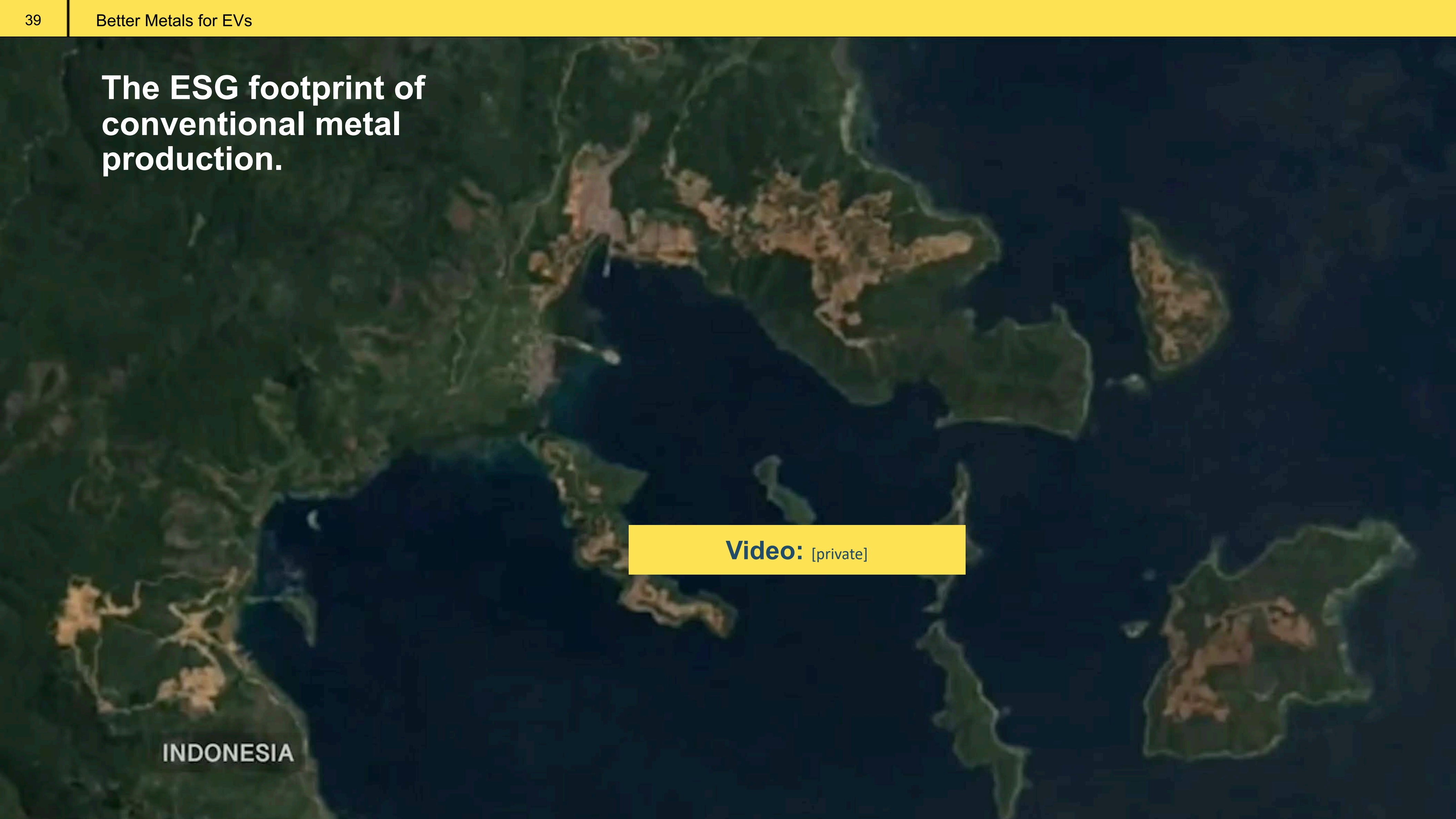
1-10

million years for
a nodule to form through
precipitation of metal that is in
solution in sea- and sediment
pore-water

The ESG footprint of conventional metal production.

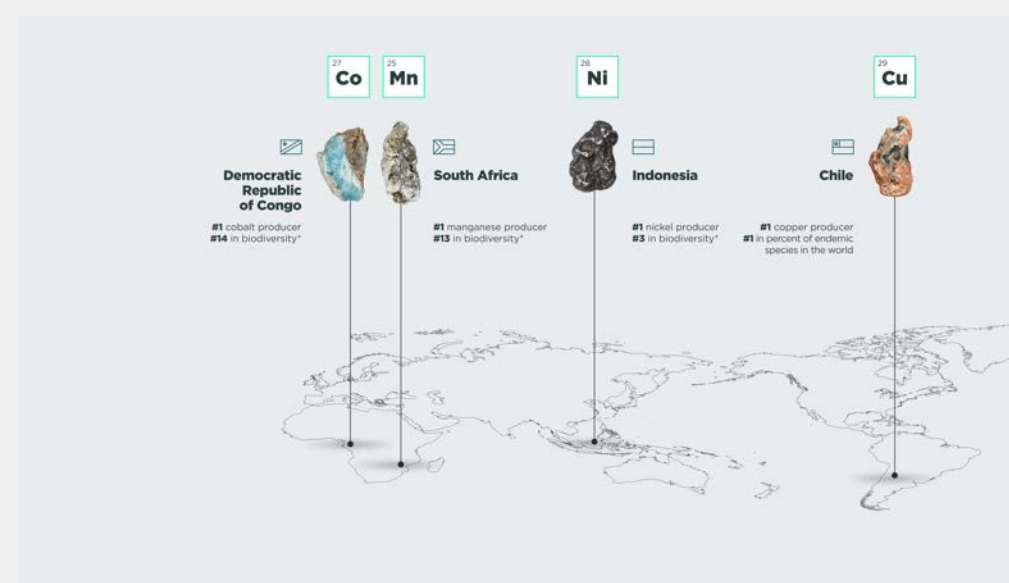
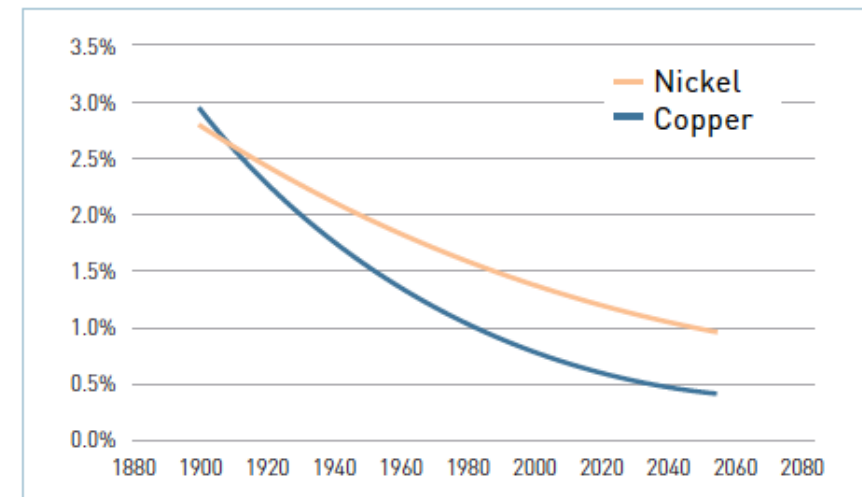
Video: [private]

INDONESIA

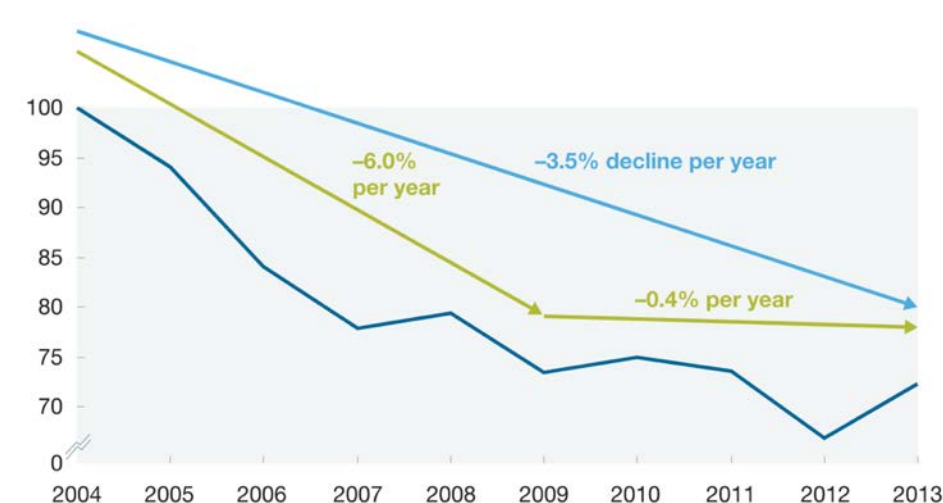


Structural challenges of land-based producers: things will get worse.

Nickel & copper grades, fitted¹



MineLens productivity index, 2004=100²



Falling grades

More ore to get at the same amount of metal

More land / energy / water use

Falling grades $\times$ sharply rising demand =
exponential increase in tailings

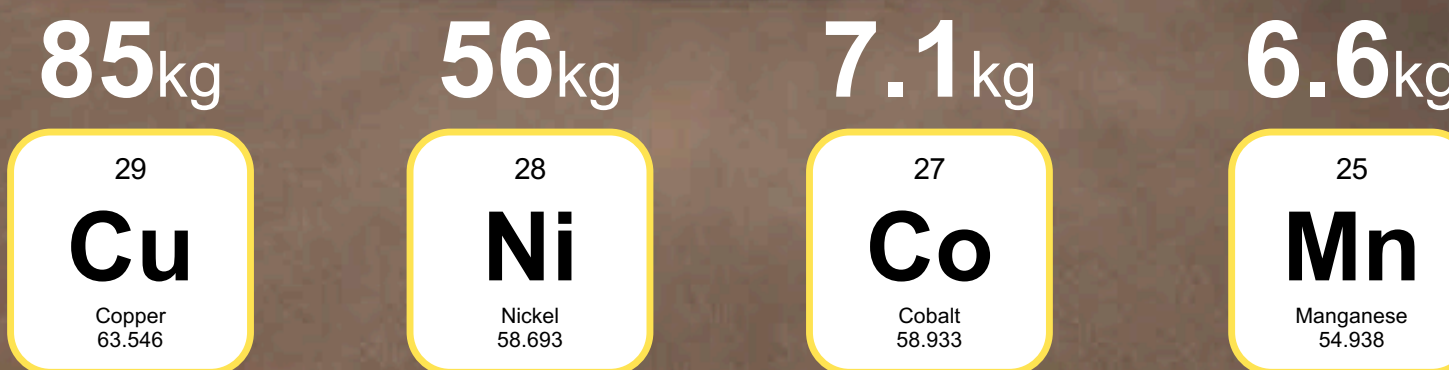
Problematic locations

Remaining projects increasingly in higher-risk and some of the most biodiverse places on the planet with large carbon sinks and sequestration services

Hard choices

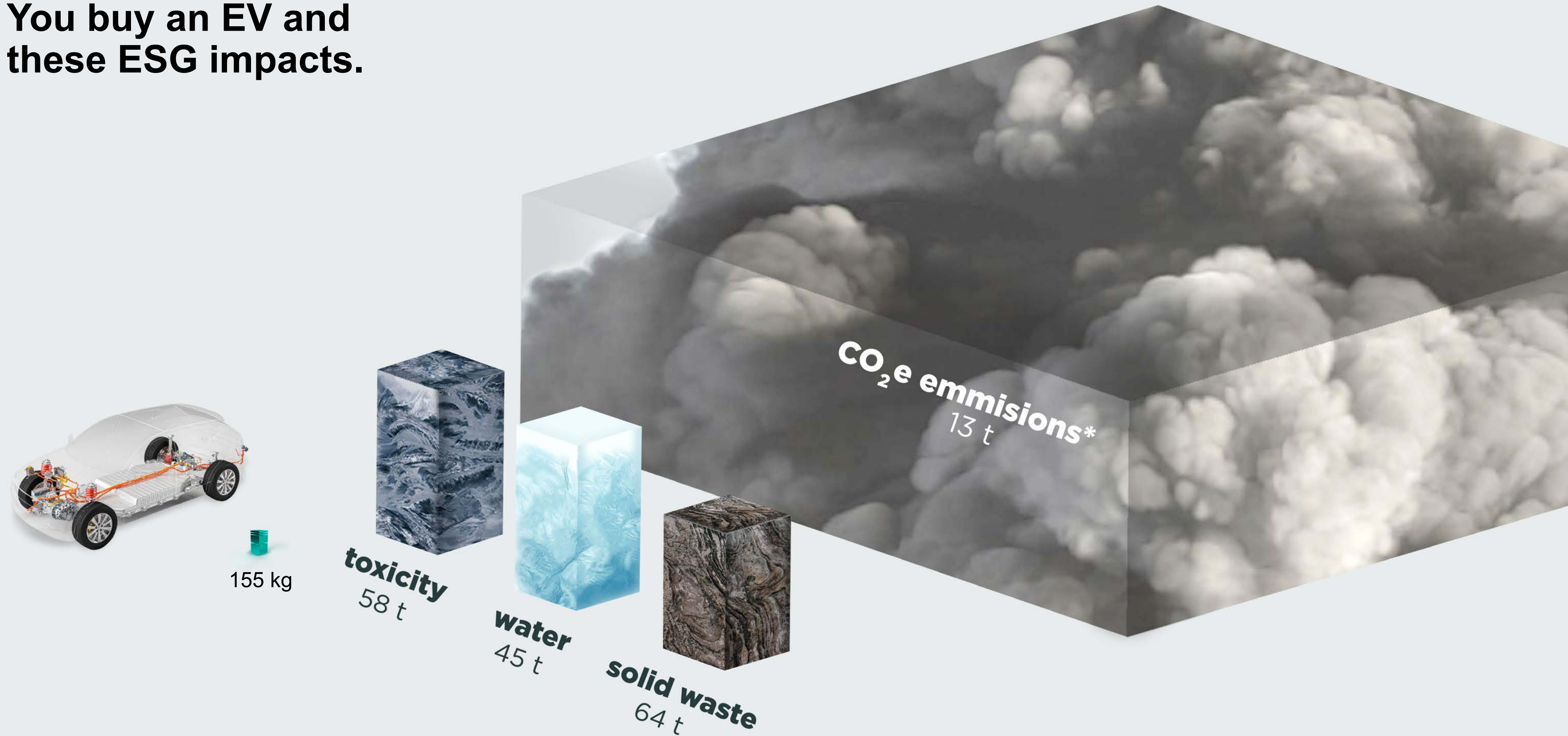
Need to invest in decarbonizing production, reducing energy / water use and management of rapidly increasing tailings volumes while tackling CAPEX / OPEX pressure stemming from falling grades

Consider the ESG impacts of producing just 155 kg of metals for one electric vehicle today using conventional sources...



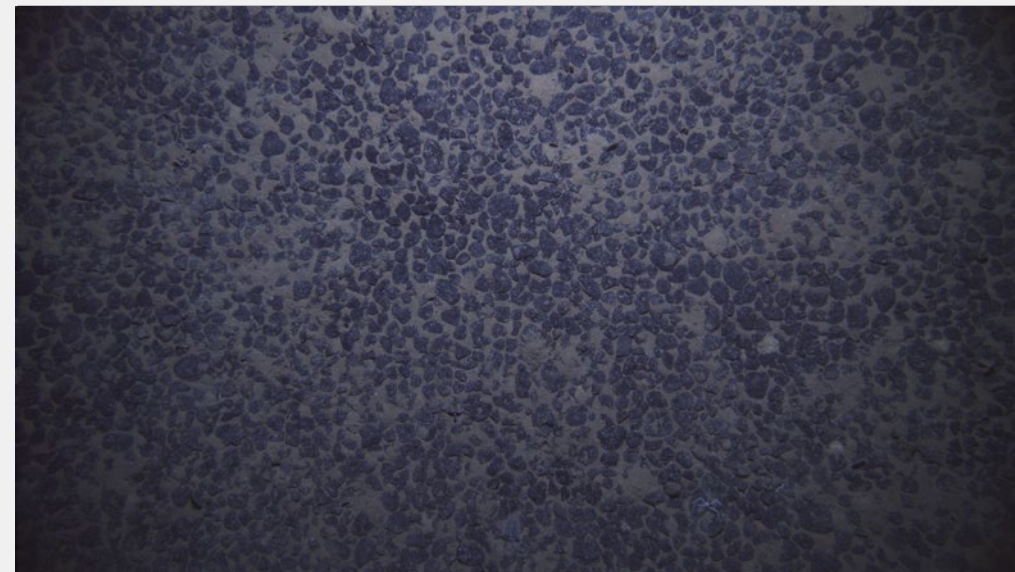
Metal requirements for a 75kWh battery with NMC cathode chemistry and average copper contents for electric harness and connectors. Different battery size and cathode chemistries would have different metal requirements.

You buy an EV and these ESG impacts.



*Include direct emissions from metal mining, processing & refining; release of carbon stored in vegetation, detritus & soil; and emissions from land use change
Source: Paulikas et al, Where Should Metals for the Green Transition Come From? April 2020

Metal production from nodules can be much better.



Resource

High-grades of four metals in a single ore – **much less ore mass to process**

Very low contents of hazardous elements – **can turn 100% of mass into products**

Unobstructed access to nodules—**no overburden to remove**

Loose sitting – **no need for drilling & blasting**

Location

Far offshore — **no deforestation, no social displacement, no fixed infrastructure**

Very deep – **no release of carbon sequestered in seafloor sediments**

Marine desert— **no plants, orders of magnitude less biomass to impact**

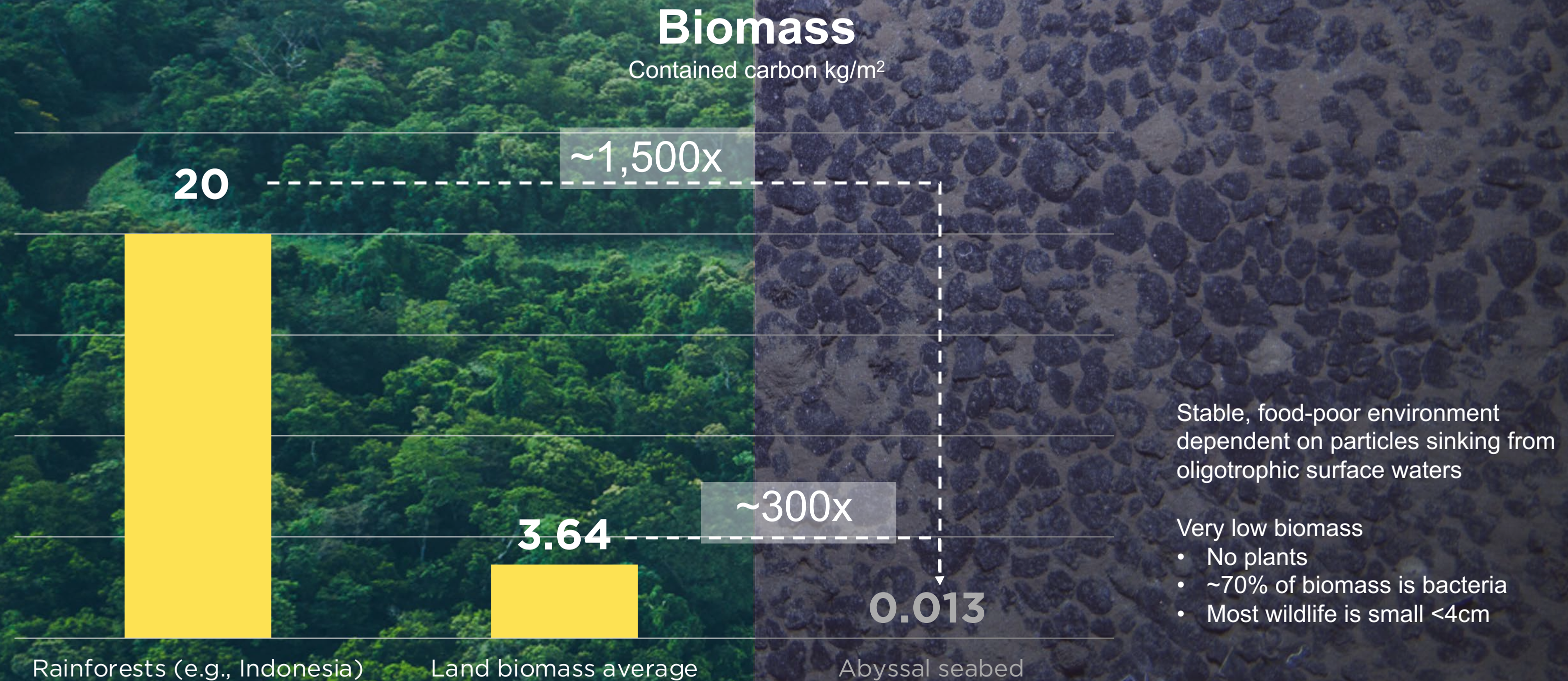
Most common habitat on the planet—**easier to set aside areas for conservation**

Our choices

Invest in zero-waste flowsheet design

Power processing plant with renewables

The Abyssal Plain advantage: one of the lowest biomass & carbon sequestration environments on the planet.



Note: The seafloor-biomass value incorporates an estimate of seamounts and hydrothermal vents attributed to Wei, et al., 2010. It is also 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.

Source: Bar-On, Phillips, & Milo, 2018; Wei, et al., 2010.

Ethical labeling:
what you buy when
you buy a billion EVs.

Impact facts			
Cradle-to-gate production of nickel sulfate, manganese sulfate, cobalt sulfate and copper cathode Assuming NMC811 cathode chemistry and 75kWh battery size Serving size: 1 billion electric cars			
	Land	Nodules	% change
Climate change			
GWP – CO ₂ equivalent emissions, Gt	1.47	0.45	-70%
Carbon sinks at risk, Gt	9.30	0.58	-94%
Disrupted carbon sequestration, GT	2.06	0.24	-88%
Resource use			
Ore, Gt	25	6	-75%
Land, km ²	156,000	9,800	-94%
of which forests, km ²	66,000	5,200	-92%
Seafloor, km ²	2,000	508,000	new use
Water, km ³	45	5	-89%
Primary and secondary energy, PJ	24,500	25,300	+3%
Waste			
Solid waste, Gt	64	0	-100%
Terrestrial ecotoxicity, 1,4-DCB equivalent Mt	33	0.5	-98%
Freshwater ecotoxicity, 1,4-DCB equivalent Gt	21	0.1	-99%
Eutrophication potential, PO4 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%
Mega fauna at risk, trillion organisms	47	3	-93%
Biomass at risk, Mt	568	42	-93%
Biodiversity loss risk	Present	Present	No change
Source: Paulikas et al, Where Should Metals for the Green Transition Come From? April 2020 White Paper; D. Paulikas, S. Katona, E. Ilves, S.H. Ali, "Life cycle climate change impacts of producing battery metals from land ores versus deep-sea polymetallic nodules," <i>Journal of Cleaner Production</i> , 275 (2020) 123822.			

Conflicting narratives: why good people are divided on deep-sea mining.

“Intuitions come first, strategic reasoning second.”

“People bind themselves into political teams that share moral narratives. Once they accept a particular narrative, they become blind to alternative moral worlds.”

“When a group of people make something sacred, the members of the cult lose the ability to think clearly about it. Morality binds and blinds.”

Intuition

Mining has had devastating impacts on land.
We must protect the oceans from mining.

Magical solutions

We don't need to mine.
We can degrowth, reuse, recycle.

Black-and-white thinking

Ban all deep-sea mining and focus on fixing land based mining.

Our approach to earning a social license.

“The human mind is a **story processor**, not a logic processor.”

“Moral reasons are the tail wagged by the intuitive dog. A dog’s tail wags to communicate. You can’t make a dog happy by forcibly wagging its tail. And you **can’t change people’s minds by utterly refuting their arguments.**”

“If you really want to change someone’s mind on a moral matter, you’ll need to **see things from that person’s angle** as well as your own. And if you do truly see it the other person’s way—deeply and intuitively—you might even find your own mind opening in response. **Empathy is an antidote to righteousness**, although it’s very difficult to empathize across a moral divide.”

Source: Jonathan Haidt, The Righteous Mind: Why Good People Are Divided by Politics and Religion (2012).

Tell better stories

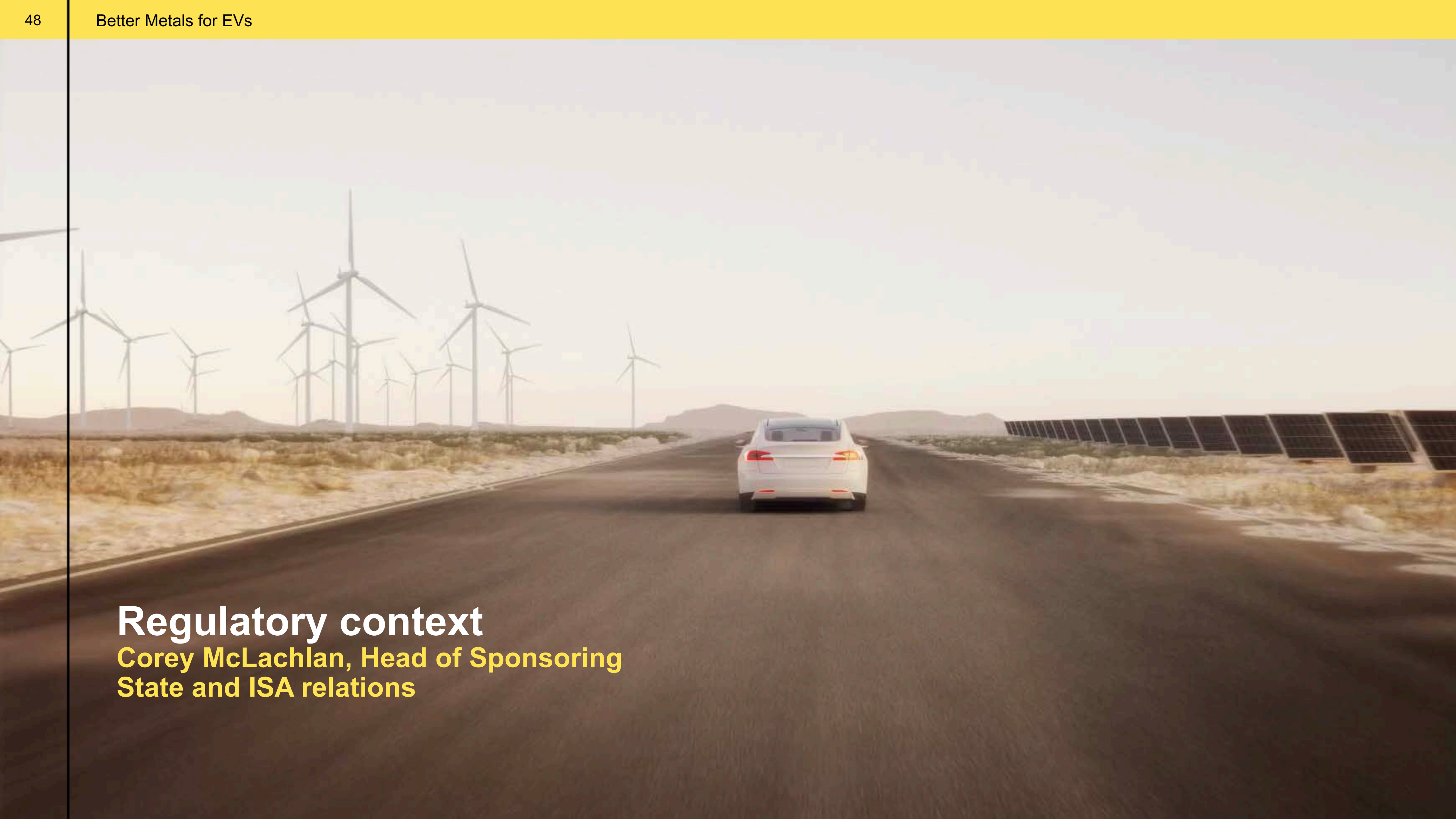
Analysis is a prerequisite but stories is how we interface with the world. Sometimes our stories are best told by others.

Radical transparency

We compete on ethics. Radical transparency is non-negotiable in a world where a product’s impact story is as important as its function and price.

Engage & stay open

Seek to understand opposing perspectives. Establish shared ground. Be prepared to change our minds.



Regulatory context

**Corey McLachlan, Head of Sponsoring
State and ISA relations**

International regulator with a clear mandate and a 27-year track record.



“The deep-sea mining regime in the convention is the most innovative legal regime ever designed by humankind for the equitable and sustainable use of natural resources.”

“The reality is that never before has such a comprehensive regulatory regime been established before any commercial activity begins and never before has an extractive industry been subject to so much scrutiny or has such a precautionary approach to development been taken.”

*Michael Lodge, Secretary General,
International Seabed Authority (ISA)*

Mandate

United Nations Law of the Sea Convention (UNCLOS), 1982
UNCLOS Implementation Agreement, 1994

- Organize, control and regulate all mineral related activities in the international seabed on behalf of humankind
- Ensure effective protection of the marine environment

Track record

- ✓ Established in 1994: 167 Member States & the EU
- ✓ Exploration Regulations developed for three types of seabed resources
- ✓ 31 Exploration Contracts awarded
- ✓ Exploitation Regulations, Standards & Guidelines, nearing completion
- ✓ Developing States and marine environment prioritized

Exploration regime:
similar to what you see
on land but with a strong
application of the
precautionary principle.



Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area

Preamble

In accordance with the United Nations Convention on the Law of the Sea ("the Convention"), the seabed and ocean floor and the subsoil thereof beyond the limits of national jurisdiction, as well as its resources, are the common heritage of mankind, the exploration and exploitation of which shall be carried out for the benefit of mankind as a whole, on whose behalf the International Seabed Authority acts. The objective of this first set of Regulations is to provide for prospecting and exploration for polymetallic nodules.

Part I Introduction

Regulation 1 Use of terms and scope

1. Terms used in the Convention shall have the same meaning in these Regulations.
2. In accordance with the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 ("the Agreement"), the provisions of the Agreement and Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 shall be interpreted and applied together as a single instrument. These Regulations and references in these Regulations to the Convention are to be interpreted and applied accordingly.
3. For the purposes of these Regulations:
 - (a) "Exploitation" means the recovery for commercial purposes of polymetallic nodules in the Area and the extraction of minerals therefrom, including the construction and operation of mining, processing and transportation systems, for the production and marketing of metals;
 - (b) "Exploration" means searching for deposits of polymetallic nodules in the Area with exclusive rights, the analysis of such deposits, the testing of collecting systems and equipment, processing facilities and transportation systems, and the carrying out of studies of the environmental, technical, economic, commercial and other appropriate factors that must be taken into account in exploitation;

Exploration regulations

Adopted in 2000, updated in 2013

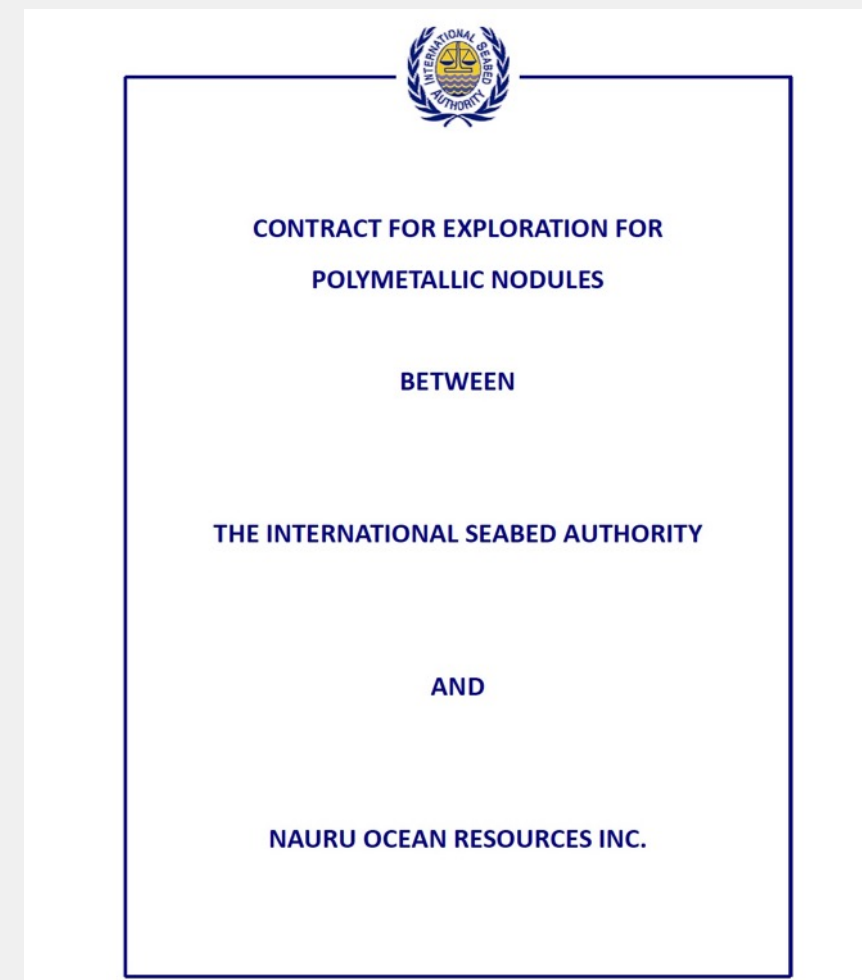
- 15-year exploration contracts
- 5-year work programs
- Exclusive right to explore
- Exclusive right to apply for exploitation

Exploration contract awards

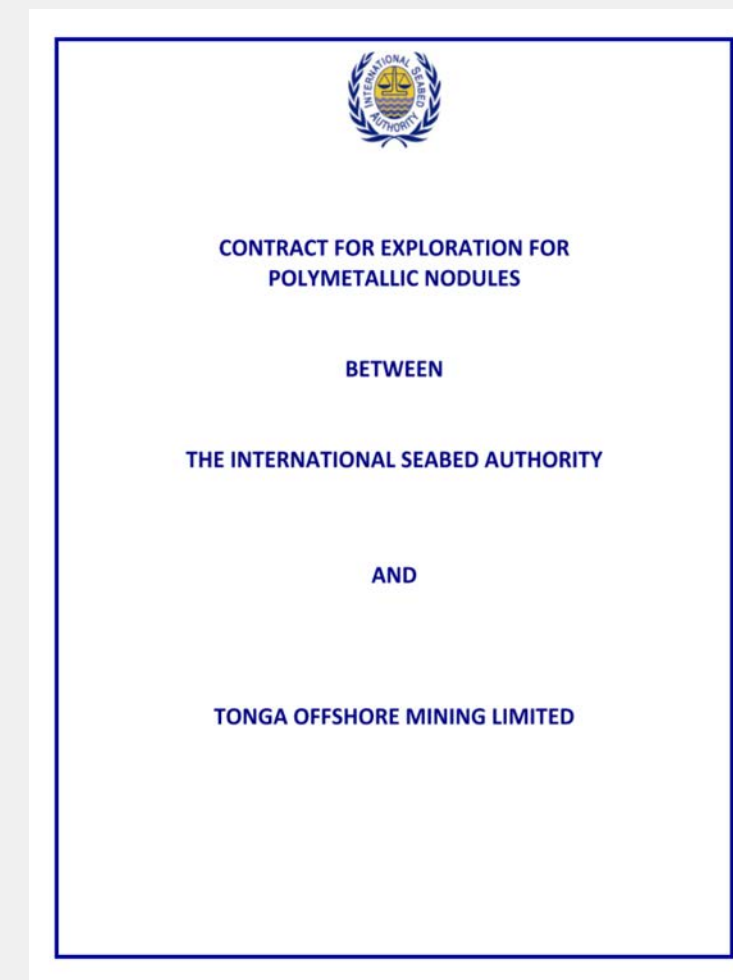
- 19 polymetallic nodules contracts
- 7 polymetallic sulphides contracts
- 5 cobalt crusts contracts
- Demonstrated ability to extend contracts (2016 & 2021)

Our exploration rights: three ISA exploration contracts...

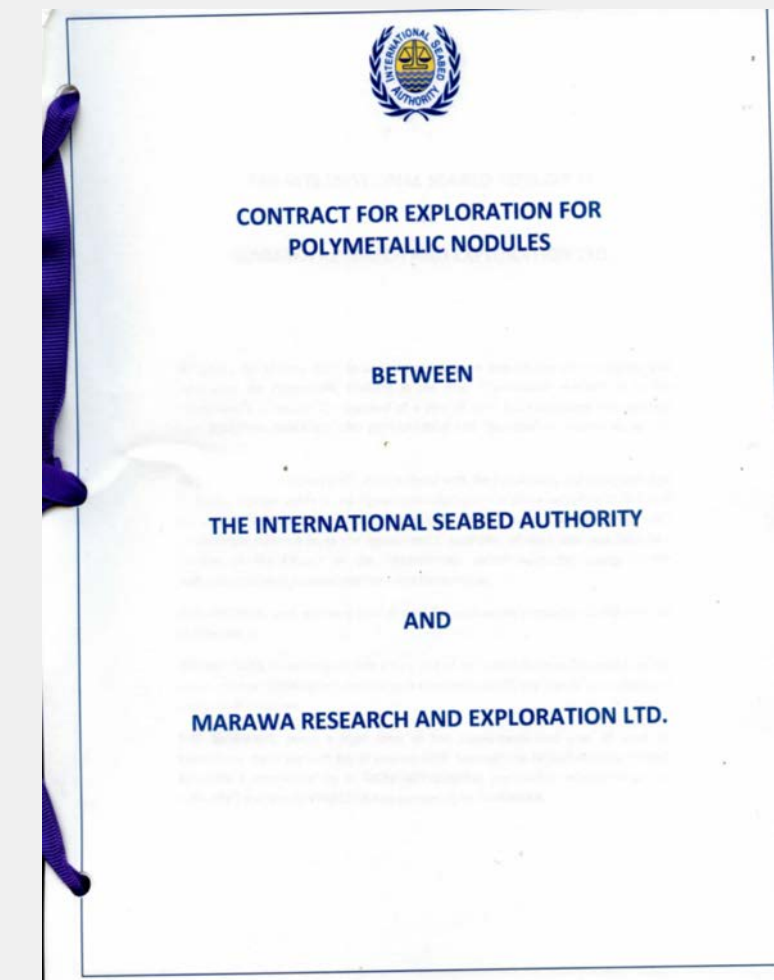
2011 NORI



2011 TOML



2015 Marawa



...sponsored by three developing nations.

“Another first for the Authority was the approval of two applications by private sector interests, sponsored by developing States, for plans of work for exploration for polymetallic nodules in the so-called reserved areas. The Council approved applications by Nauru Ocean Resources Inc., sponsored by the Republic of Nauru, and by Tonga Offshore Mining Ltd., sponsored by the Kingdom of Tonga. Not only are these the first applications for exploration licences in the international Area by genuinely private-sector entities, but also they are the first applications to have been made for reserved areas, on the basis of sponsorship by developing States.

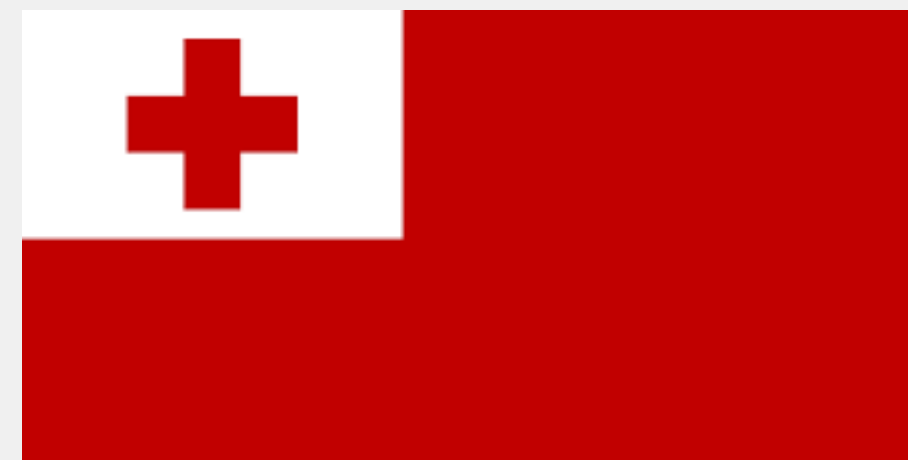
This is a tremendously important development. I would like to remind the Assembly that **the original purpose** behind the parallel system of exploitation as set out in the Convention **was to provide developing States with a practical and realistic means of participating in seabed mining...** The only realistic option for most developing States therefore is to form partnerships with commercial interests that have access to the financial capital and technology that are necessary to conduct deep sea exploration. This is exactly what has happened in the case of Nauru and Tonga. This could not have happened, however, unless the private sector had sufficient confidence in the regulatory system that has been developed by the Authority over the past 15 years to make such an investment in the first place.

Nii Allotey Odunton
Secretary General of the ISA
Speech given to the UN General Assembly in 2011



Republic of Nauru

2015 Nauru Seabed Minerals Act
2017 Sponsorship Agreement



Kingdom of Tonga

2014 Tonga Seabed Minerals Act
2008 Sponsorship Agreement



Republic of Kiribati

2017 Tonga Seabed Minerals Act
2013 Sponsorship Agreement

Exploitation regime: nearing completion and adoption.

ISBA/25/C/WP.1
Unedited Advance Text
25 March 2019
English only

Draft Regulations on Exploitation of Mineral Resources
in the Area

Prepared by the Legal and Technical Commission

Contents

	Page
Preamble	8
Part I	
Introduction	8
1. Use of terms and scope	8
2. Fundamental principles	9
3. Duty to cooperate and exchange of information	10
4. Protection measures in respect of coastal States	11
Part II	
Applications for approval of Plans of Work in the form of contracts	13
Section 1	
Applications	13
5. Qualified applicants	13
6. Certificate of sponsorship	13
7. Form of applications and information to accompany a Plan of Work	14
8. Area covered by an application	15
Section 2	
Processing and review of applications	15
9. Receipt, acknowledgement and safe custody of applications	15
10. Preliminary review of application by the Secretary-General	16
11. Publication and review of the Environmental Plans	16
Section 3	
Consideration of applications by the Commission	17
12. General	17
13. Assessment of applicants	17
14. Amendments to the proposed Plan of Work	19

Adoption was expected in July 2020 but COVID has delayed negotiation & adoption

Exploitation Regulations

- 4th draft released in 2019 / stakeholder comments in 2020
- Now with Council for final negotiation / Working Groups have been established to negotiate text

Financial Regime

- Deep seabed minerals cannot be advantaged or disadvantaged compared to terrestrial resources
- Comparative study of terrestrial royalties released in 2020
- Revised model to be released prior to next Council meeting

Standards & Guidelines

- 10 standards & guidelines will be adopted
- 3 have received stakeholder comment; final 7 are out for public comment
- Council will review all 10 at the next meeting

Exploitation contract: what we need to do to secure it.

Application

- ✓ Certificate of Sponsorship
- ✓ Mining Plan
- ✓ Financing Plan
- ✓ Environmental Impact Statement
- ✓ Emergency Response and Contingency Plan
- ✓ Health and Safety Plan & Maritime Security Plan
- ✓ Training Plan
- ✓ Environmental Management and Monitoring Plan
- ✓ Closure Plan

Process

45 days

Secretary General will review the application for completeness

120 days

If no amendments required, LTC reviews the application

60 days

Environmental Plans are published

90 days

For amending application, LTC reviews at next session (2x annual). The Council then reviews and if acceptable approves application.

315 days

From initial filing application could be approved—assuming no significant changes to the timelines.

Exploitation regime: mitigating potential delay risk.

Timeline

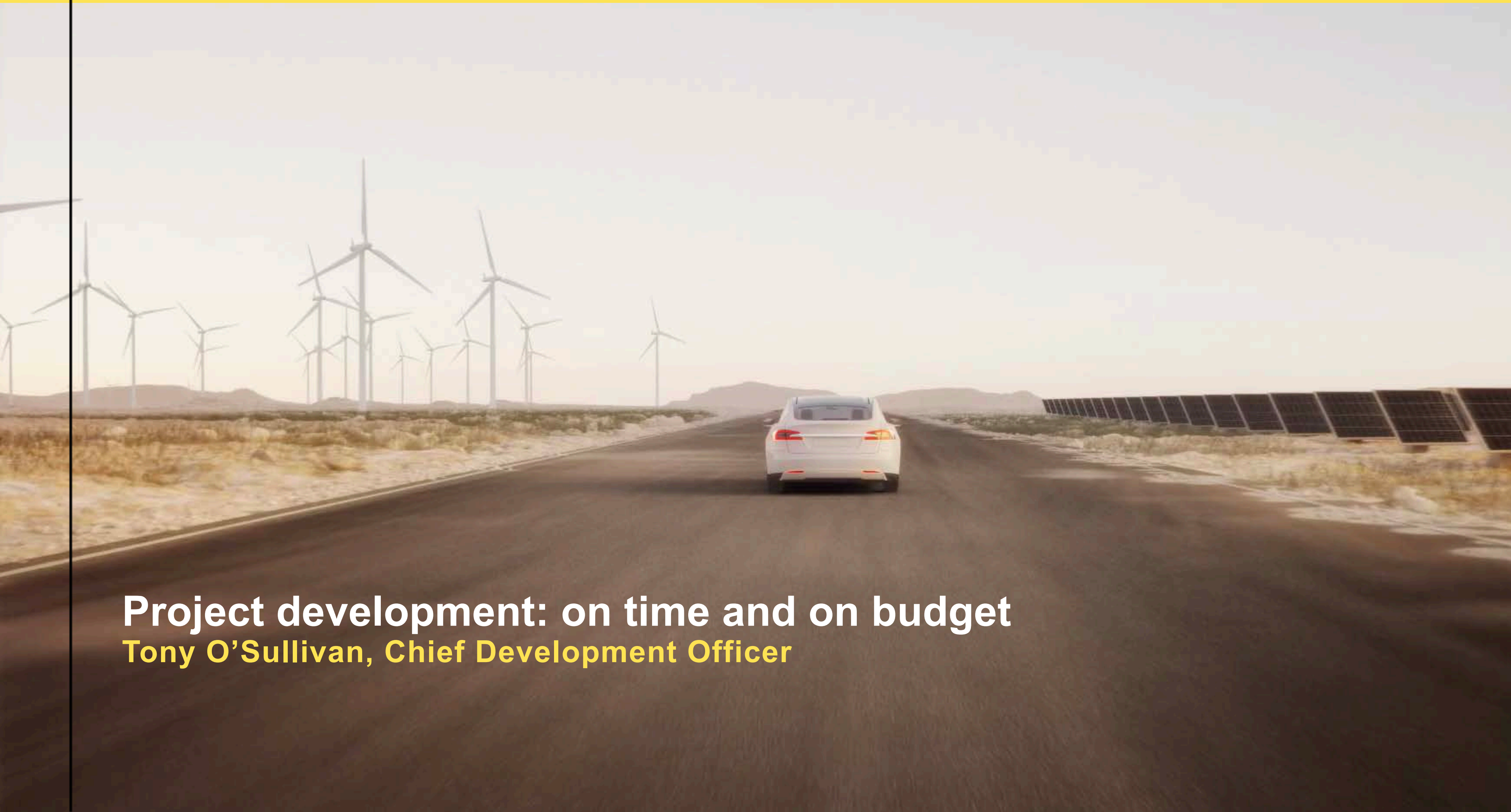
July 2020 ISA stated goal for adoption—delayed due to COVID

2021-2022 Tentative new timeline for adoption

Q2 2023 NORI plans to submit application for Exploitation Contract

Mitigation

Article 15 of the 1994 Implementation Agreement empowers a Member State whose national contractor is 2 years away from being ready to lodge an application for the ISA Exploitation Contract to notify the ISA of upcoming application. This notice obliges the ISA “**to consider and provisionally approve**” this application based on the state of the Exploitation Regulations at the time of the application (whether final or draft.)

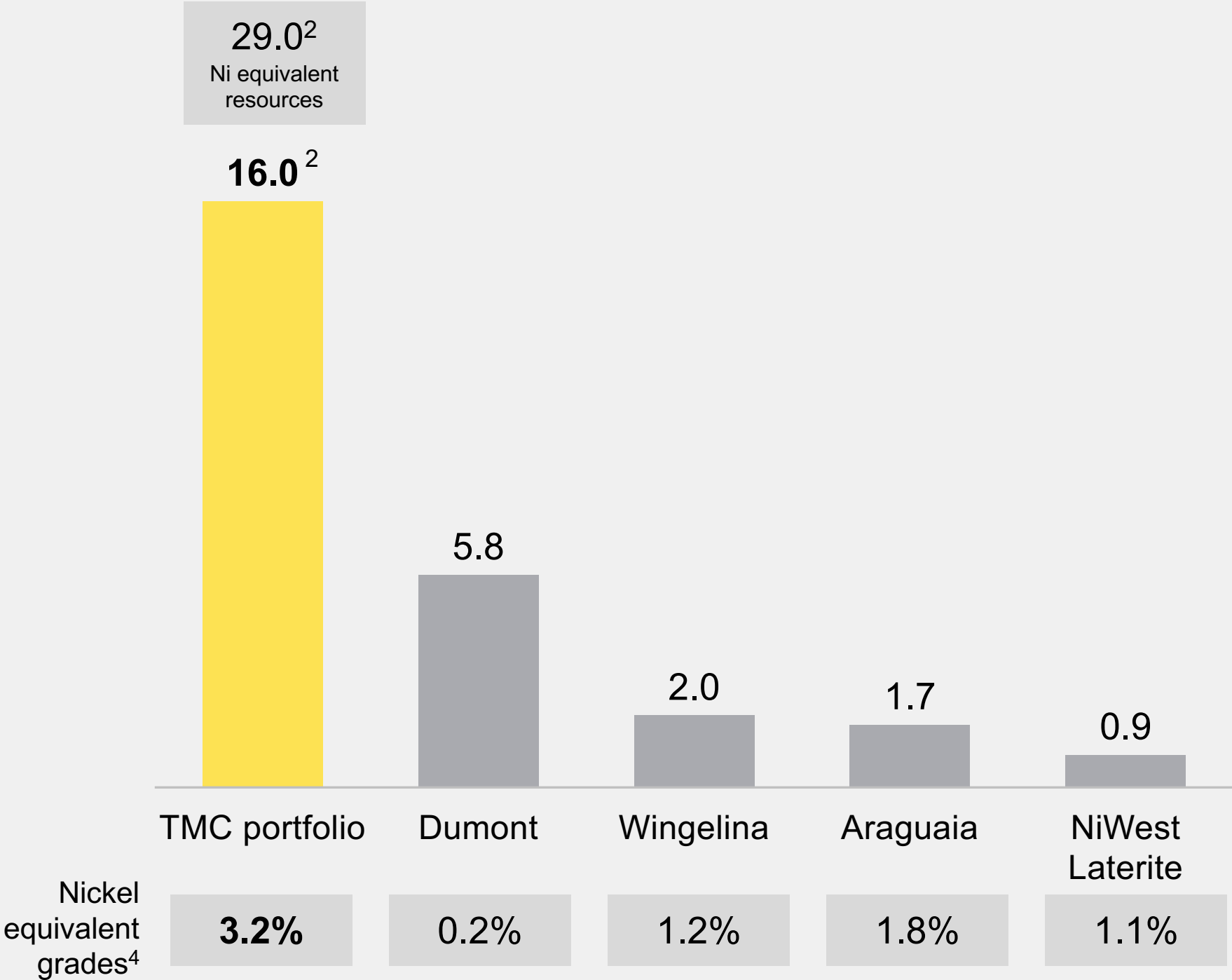


Project development: on time and on budget
Tony O'Sullivan, Chief Development Officer

World-class resource: #1 largest undeveloped nickel project, with very high grades.

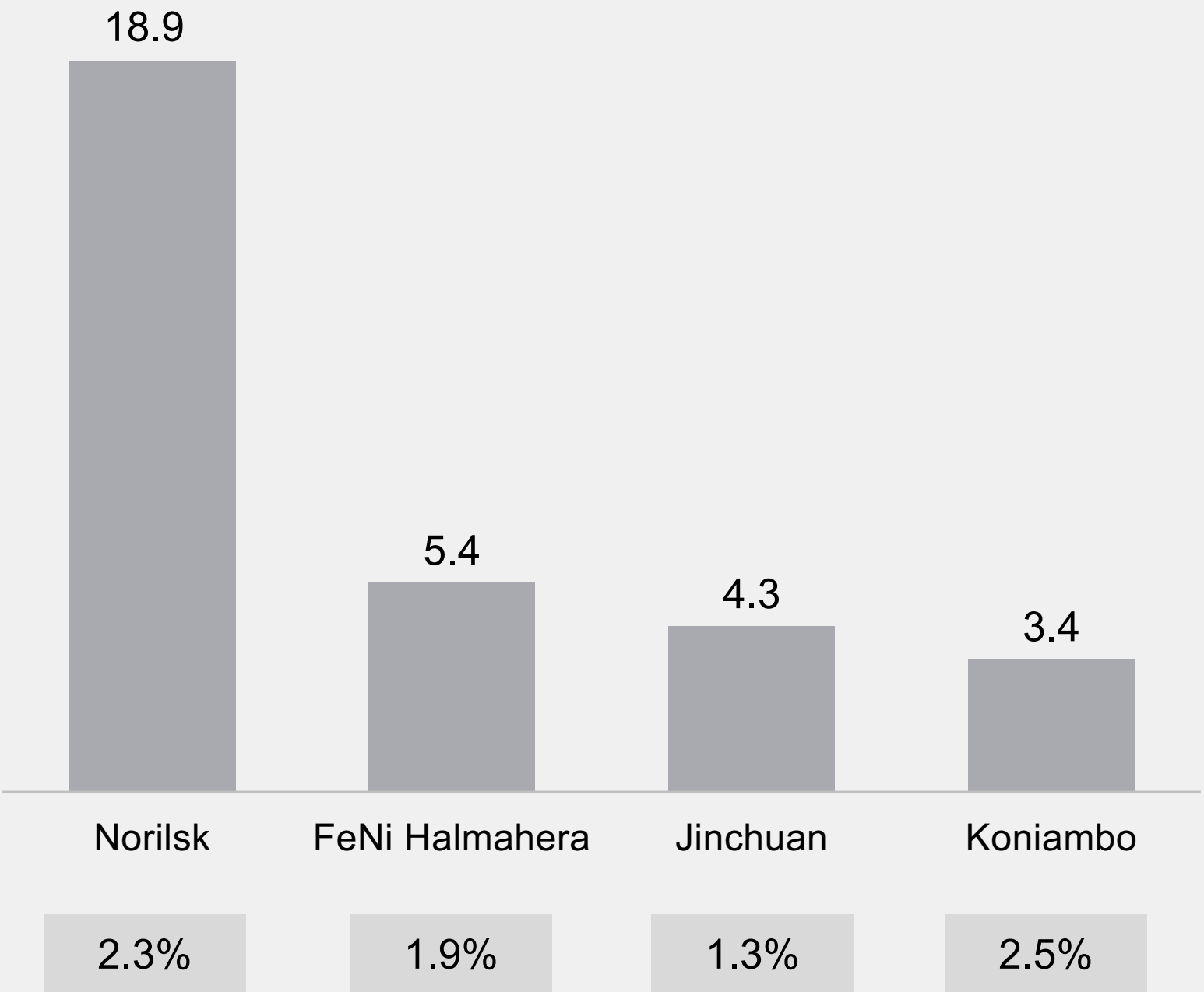
World’s largest undeveloped nickel projects

Total resources (inferred, indicated & measured), in Mt^{1,3}



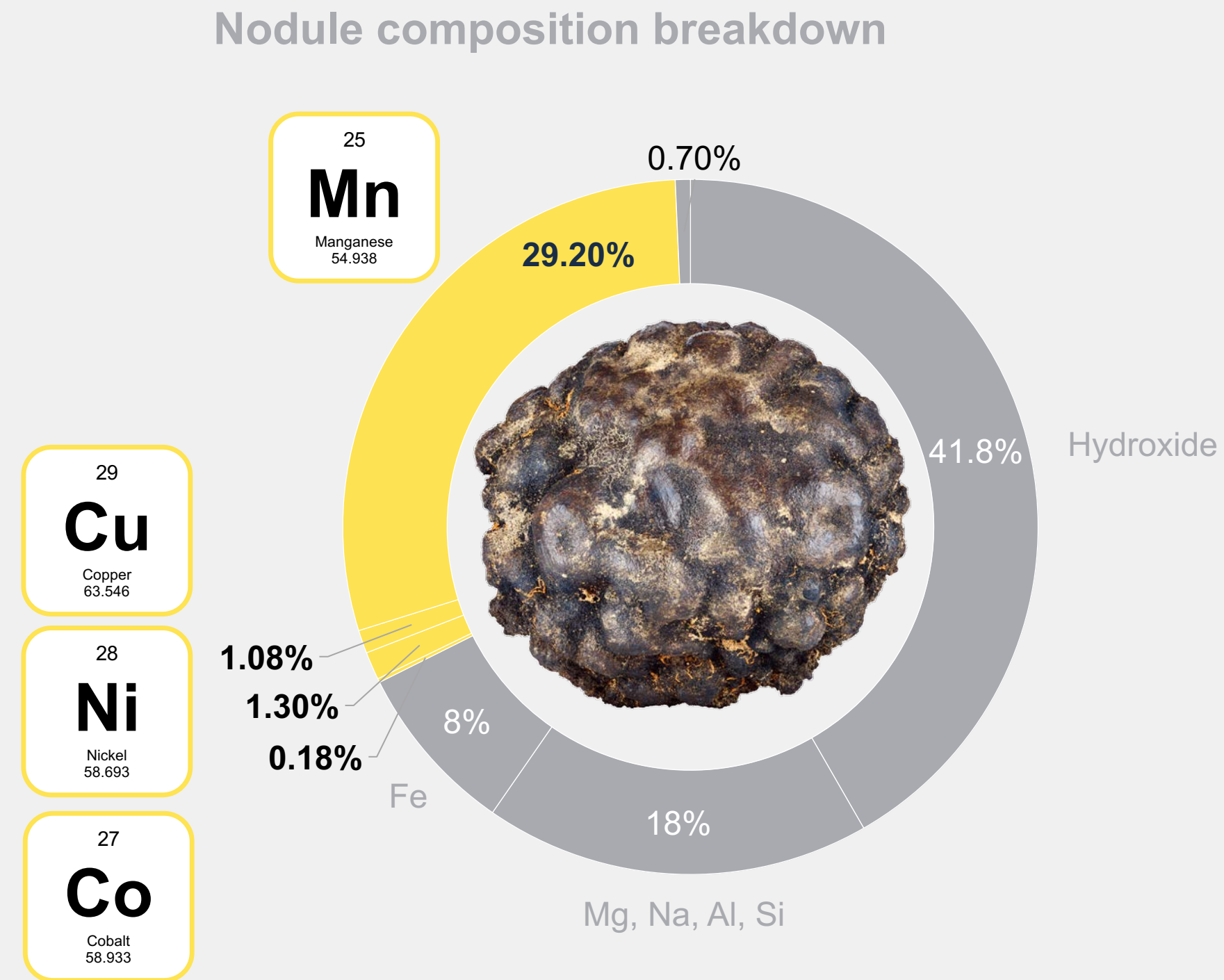
World’s largest nickel producers

Total resources (inferred, indicated & measured), in Mt^{1,3}



¹ Global Nickel Industry Cost Summary, Wood Mackenzie, August 2020; inclusive of reserves.
² Canadian NI 43-101 Resource Statement for full field financial model (internal DeepGreen development scenario). Metals and mining recoveries have not been considered.
³ Asset Reports for Dumont, Wingelina, Araguaia, NiWest Laterite, Norilsk, FeNi Halmahera, Jinchuan and Koniambo, Wood Mackenzie.
⁴ Nickel equivalence calculation uses NORI-D Model price deck as stated on page 63 of March 4 - PIPE investor deck. For gold (\$1,823/oz), platinum (\$1,224/oz) and silver (\$27/oz), spot prices as of May 12, 2021 are used.

World-class resource: with several advantages.



Unbound to the seafloor – **no need for drilling & blasting**

Four metals in a single ore – **much less ore mass to process**

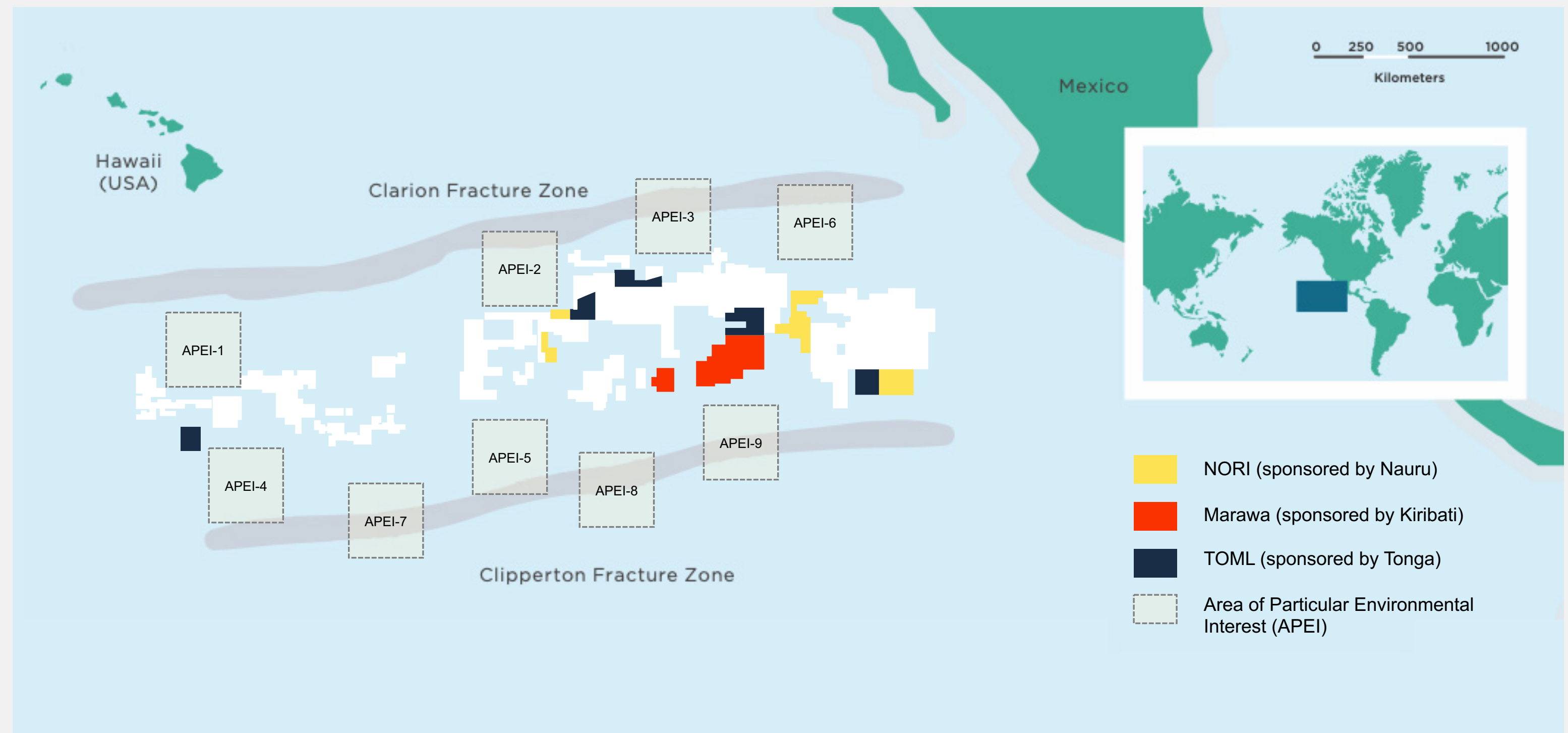
Very low hazardous elements like As, Sb, Hg – **no toxic processing tailings**

Low head-grade variability – **easier to process**

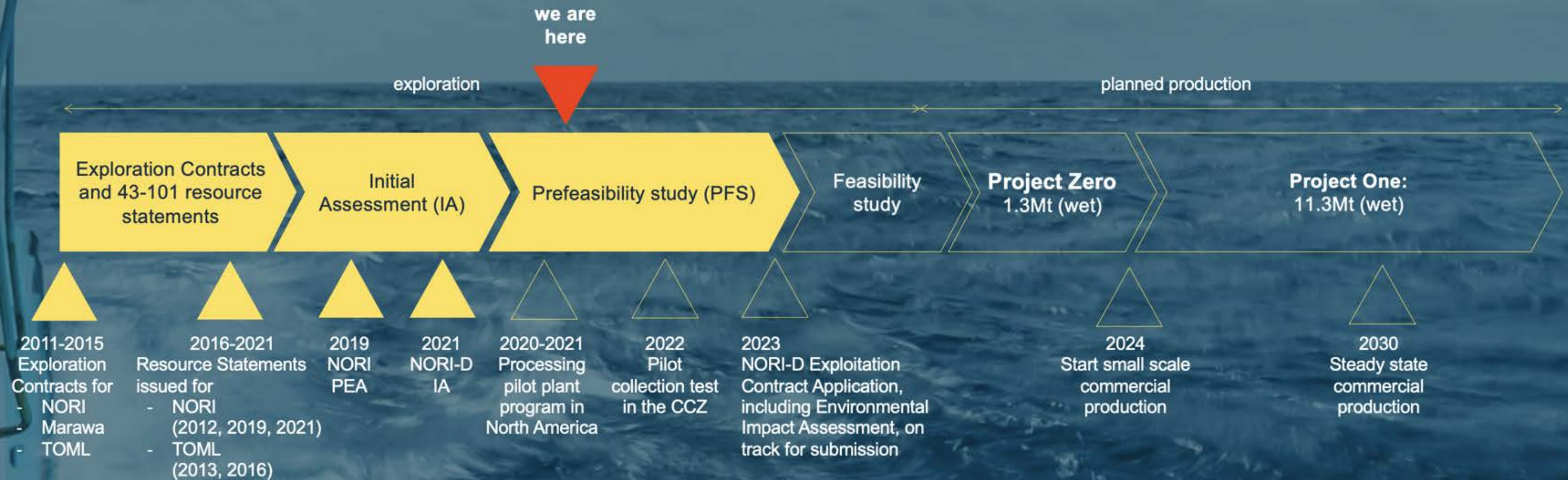
2-10 cm diameter – **easy to handle**

Microporous – **easier to smelt**

Advantageous location:
Onshore development
optionality, which is not
available to most projects.

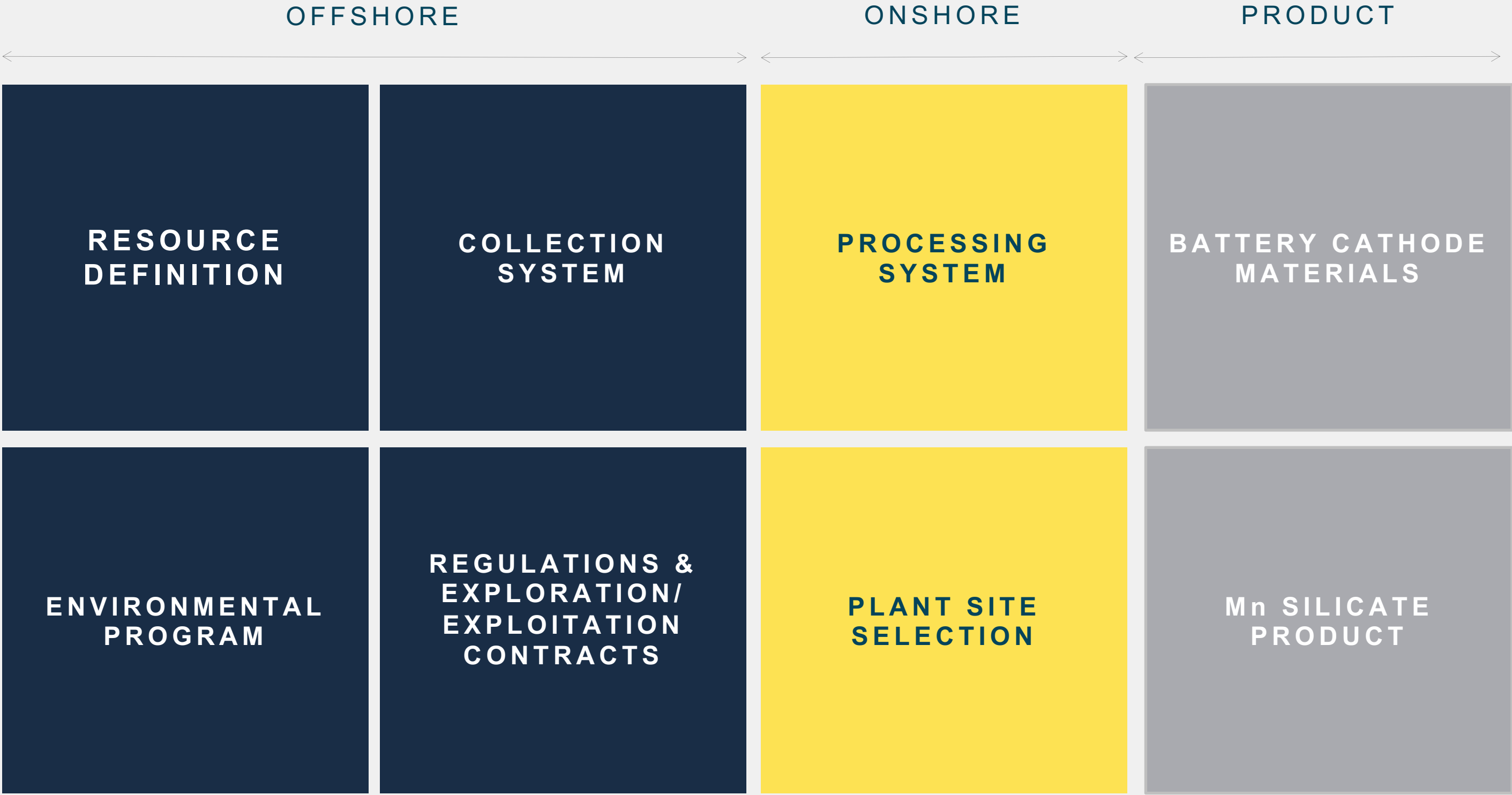


Project development: NORI-D on time and on budget to achieve expected commercial production in 2024.



Note: Timeline represents estimates and may be subject to change.

Project development:
key work streams.



Project development: achieved so far.



Resource definition:
easy and effective
to define.

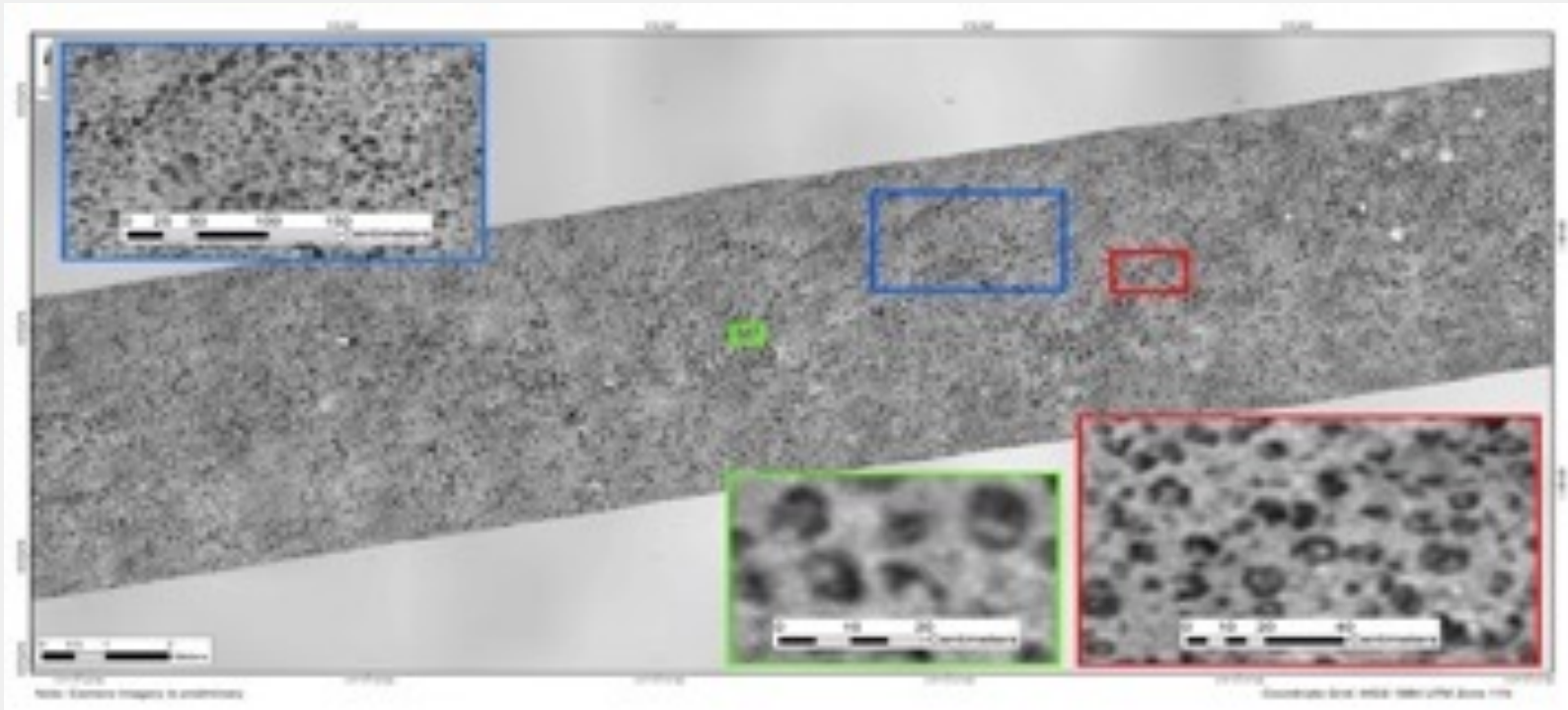
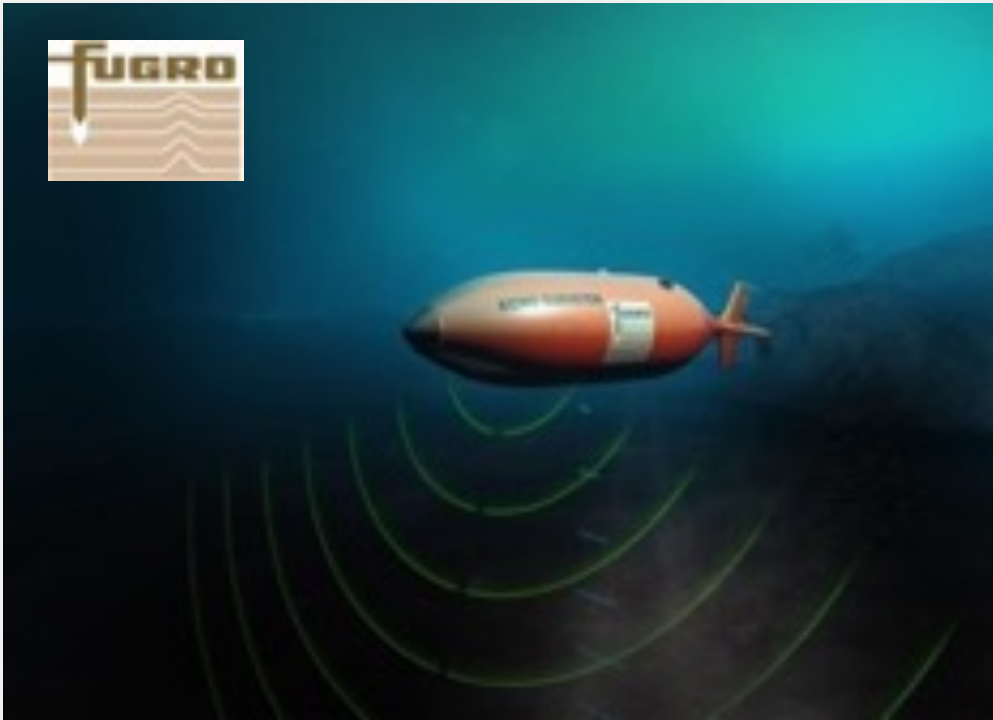
250
box cores collected²
82,000
kg (wet) nodules collected²
13,950
biological samples collected²

BOX CORE SAMPLING¹



AUV CAMERA IMAGERY¹

178,591
km² of high-res bathymetric survey²
5,439
km² detailed seafloor imagery²



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.

Video: <https://vimeo.com/361863579>



CAMPAIGN #6A

MISSION RESOURCE UPGRADE, GEOTECHNICAL
 & BIOLOGICAL SAMPLING

TIMELINE AUG. 19 — SEP. 30, 2019

VESSEL MAERSK LAUNCHER
CREW 41 PERSONNEL



NORI AREA D,
CLARION CLIPPERTON ZONE,
PACIFIC OCEAN
-6.919810, -107.392364

**Project economics:
technical report issued for
a project in NORI-D in May
2019, with SEC compliant
SK 1300 update in March
2021.**

- Independently compiled by AMC in compliance with Canadian NI 43-101 standards
- Offshore collection system design and costing by DRT with inputs from Cellula Robotics and Herbert Marine Engineering
- Onshore metallurgical plant design and costing by Canadian Engineering Associates
 - Metal product price projections from CRU
 - Shipping rate projections from Pareto JGO Shipbrokers

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Level 21, 179 Turbot Street
Brisbane Qld 4000
Australia
T +61 7 3230 9000
E brisbane@amcconsultants.com
W amcconsultants.com



Technical Report

**Preliminary Economic Assessment of the NORI Area D Project,
Clarion-Clipperton Zone
DeepGreen Metals Inc.**

In accordance with the requirements of National Instrument 43-101 "Standards of Disclosure for Mineral Projects" of the Canadian Securities Administrators

Qualified Persons:
I Lipton, FAusIMM, BSc(Hons) Geological Sciences
M Nimmo, MAIG, BSc(Hons) Geological Sciences
I Stevenson, FAusIMM, BSc(Hons) Geology, Ph.D. Geophysics
E Gleeson, MAusIMM (CP), BEng Mining
J Halkyard, P.Eng. (California), BSc Engineering Science, SM Engineering, ScD Ocean Engineering
M Kozlowski, P.Eng. (Ontario), BSc (Hons) Metallurgy, Ph.D.

AMC Project 319002
17 May 2019

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Australia
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Technical Report Summary

**Initial Assessment of the NORI Property, Clarion-Clipperton Zone
Deep Green Metals Inc.**

In accordance with the requirements of SEC Regulation S-K (subpart 1300)

AMC Project 321012
17 March 2021

Unearth a smarter way

Find [here](#)

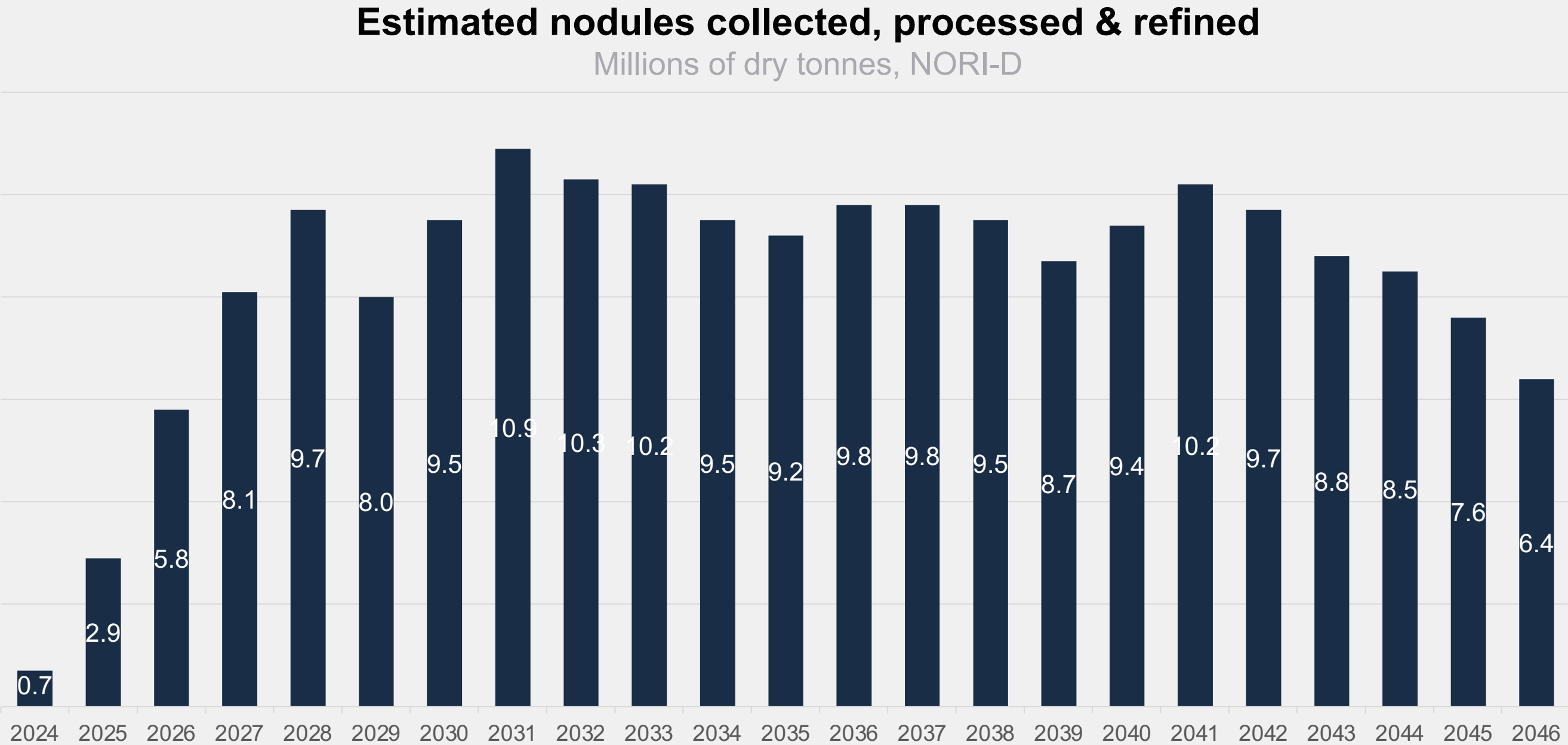
Download [here](#)

**Project development:
remaining milestones to get
NORI-D into production.**



*EIS – Environmental Impact Statement
**AMS – Adaptive Management System
***PFS & FS – Pre-feasibility Study and Feasibility Study

Scaling up:
from Project Zero
to Project One.



OFFSHORE

ONSHORE

- Converted drillship & riser
- Subsea collector
- Tolling or 1x RKEF line collocated with Mn silicate offtaker

PROJECT ONE

- + Converted drillship & riser
- + Purpose-build production vessel & riser
- + Support vessel
- + Tolling
- + 4x RKEF lines
- + 2x refineries

¹ Average estimated annual production and revenue 2030-2046.
Source: 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.

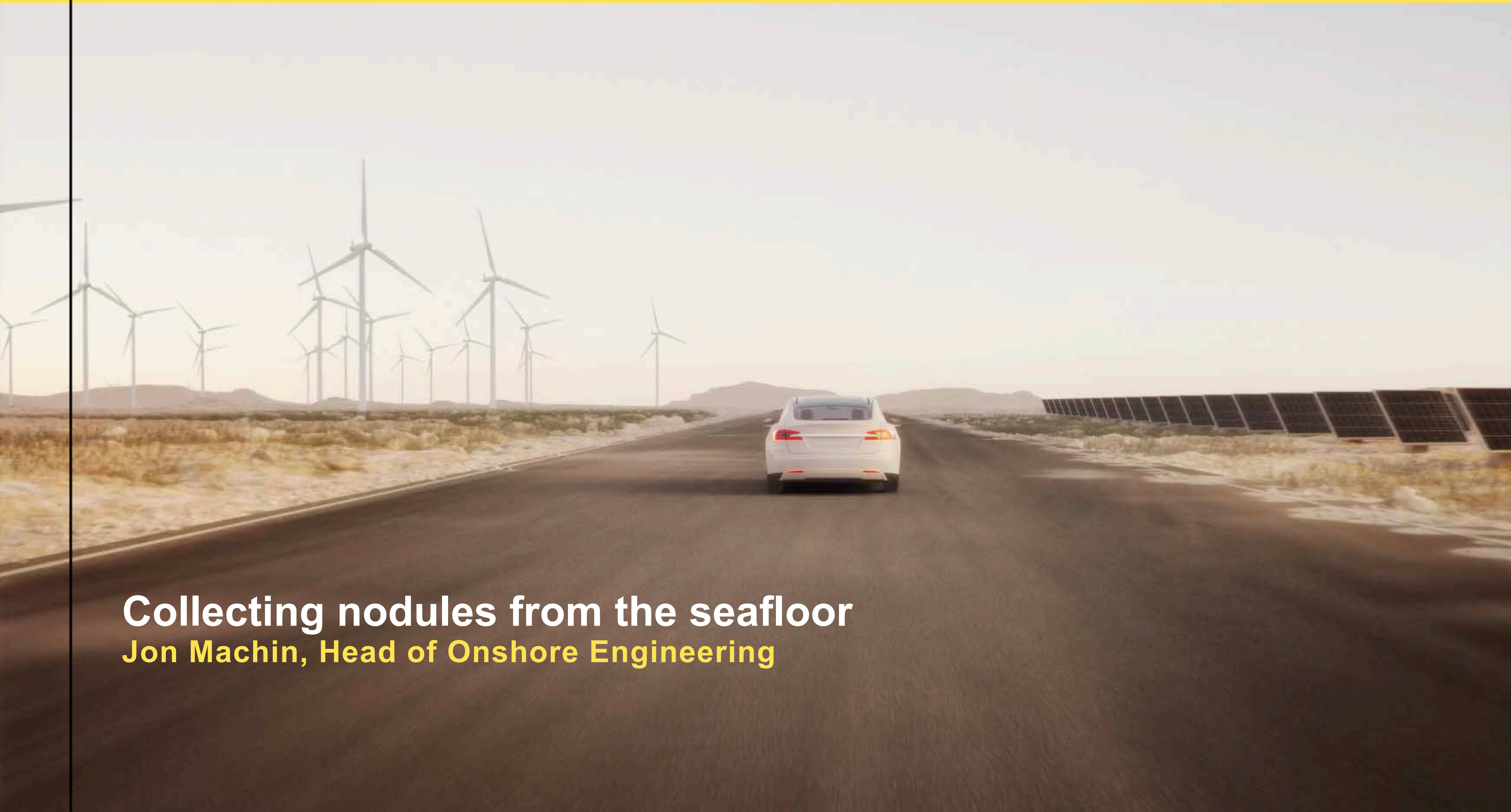
**Greenfield vs. bluefield:
delivering a nodule
project on budget and on
schedule is easier.**

	Greenfield development Land mining	Bluefield development Nodule collection
Timeline from start PFS to production	5-7 years	3 years
Capital intensity construction capital	~\$60,000/t ¹ of nickel equivalent production capacity	~\$28,000/t ² of nickel equivalent production capacity
Land use	Indigenous rights, community displacement and rights (water, land, forests, pollution)	No land use / displacement
Mine infrastructure	Power, ports, rail, roads, water	No fixed infrastructure
Mine development	Open pit: Overburden, terraced access Underground: Shafts & tunnel networks	Commission equipment, deploy collector robots and riser - weeks
Plant infrastructure & development	Processing usually near the ore body, often requiring the construction of power, ports, rail, water, roads	Once nodules are on the vessel, we can go anywhere with existing power, ports, rail, roads and water
Waste management	Tailings dams, or expensive dry stacking that expands land use	No solid waste to manage

Source: Wood Mackenzie Reports. 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.

¹ Approximate peer group median calculated using projections out to 2040. Assumes average price of \$16,106 per tonne of nickel, \$6,787 per tonne of copper, \$46,416 per tonne of cobalt, \$4.53 per dmtu of manganese, \$1,823 per ounce of gold, \$27 per ounce of silver and \$1,224 per ounce of platinum. Nickel, copper, cobalt and manganese pricing is consistent with the pricing used in Canadian NI 43-101 and SEC Regulation S-K (Subpart 1300) Compliant NORI Area D Clarion ClippertonZone Mineral Resource Estimate and associated financial model, AMC, March 2021.

² Based on estimated production between 2027 (run-rate year) – 2042. Same pricing as used in peer calculation as well as the financial model, AMC, March 2021. Calculations include nickel tonnage related to tolling. Development capex excluding tolling is \$33,500/T.



Collecting nodules from the seafloor
Jon Machin, Head of Onshore Engineering

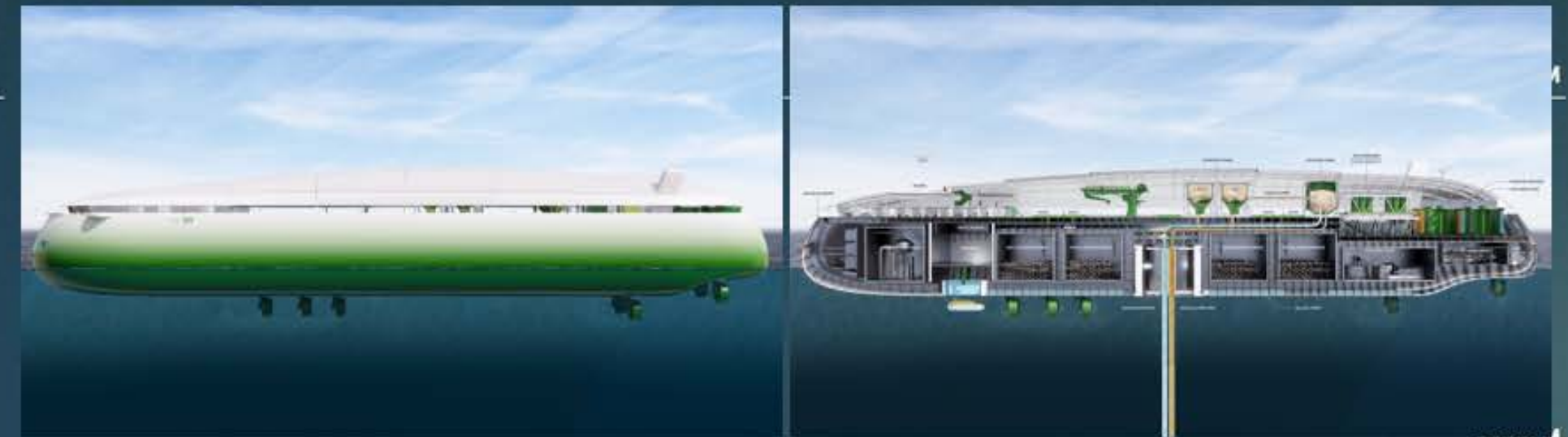
Nodule collection system: requires several subsea & surface assets.

Support vessel



Bulk carrier

Production vessel & riser

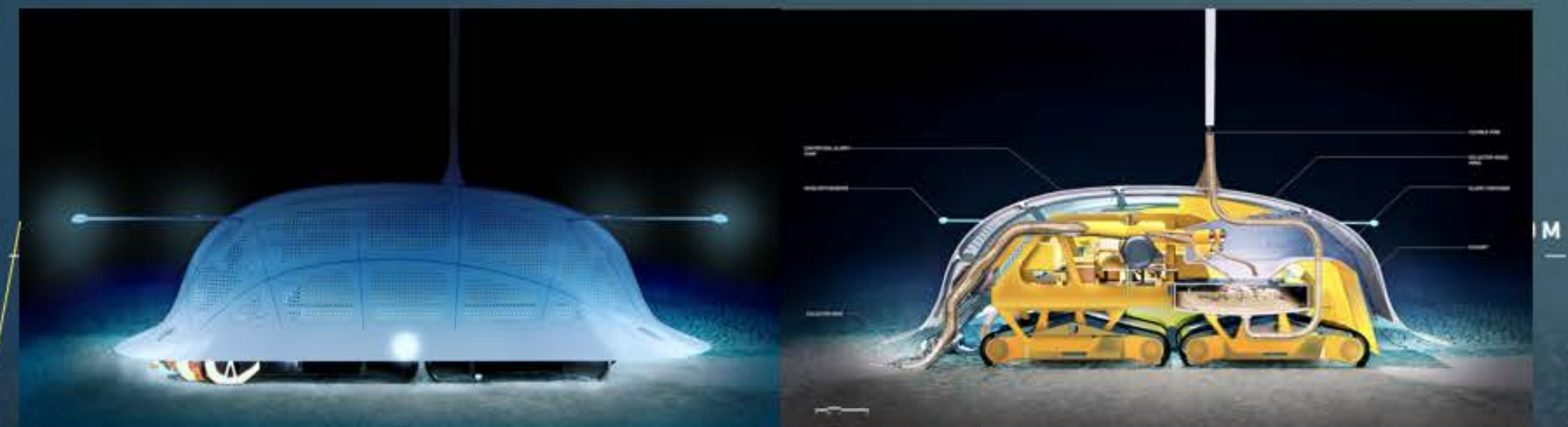


SUNLIGHT

TWILIGHT

-1000 M

Collector robots



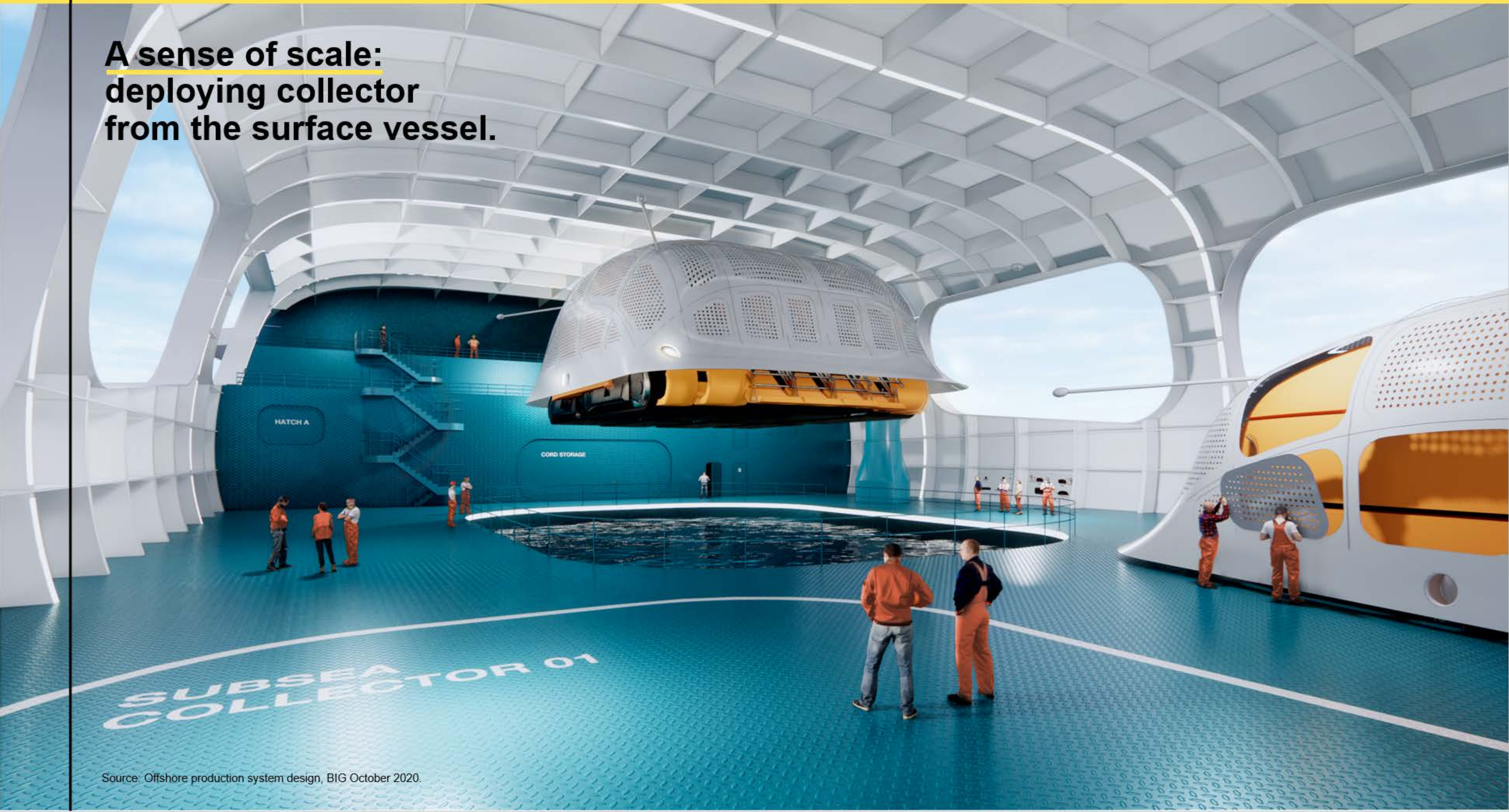
MIDNIGHT

M

THE ABYSS

-6000 M
OCEAN FLOOR

A sense of scale:
deploying collector
from the surface vessel.



Proven technology.

1970's pilot testing in CCZ



Kennecott Copper Corp

British Petroleum, Rio Tinto-Zinc Corp
Consolidated Gold Fields
Noranda Mines, Mitsubishi Corp

Deepsea Ventures Inc.

US Steel, Sun Oil, Union Miniere



Ocean Management Inc.

International Nickel Company
Metallgesellschaft AG
Sumitomo, Sedco

Lockheed

Amoco Minerals, Shell Petroleum

Present Day



Offshore Diamond Mining

De Beers, NAMCO, Samicor

Our design philosophy.

1

Design using only mature proven solutions to get into production as soon as possible, improve from there.

2

Find offshore partners with existing skills & assets, share our IP to slash their learning curve.

3

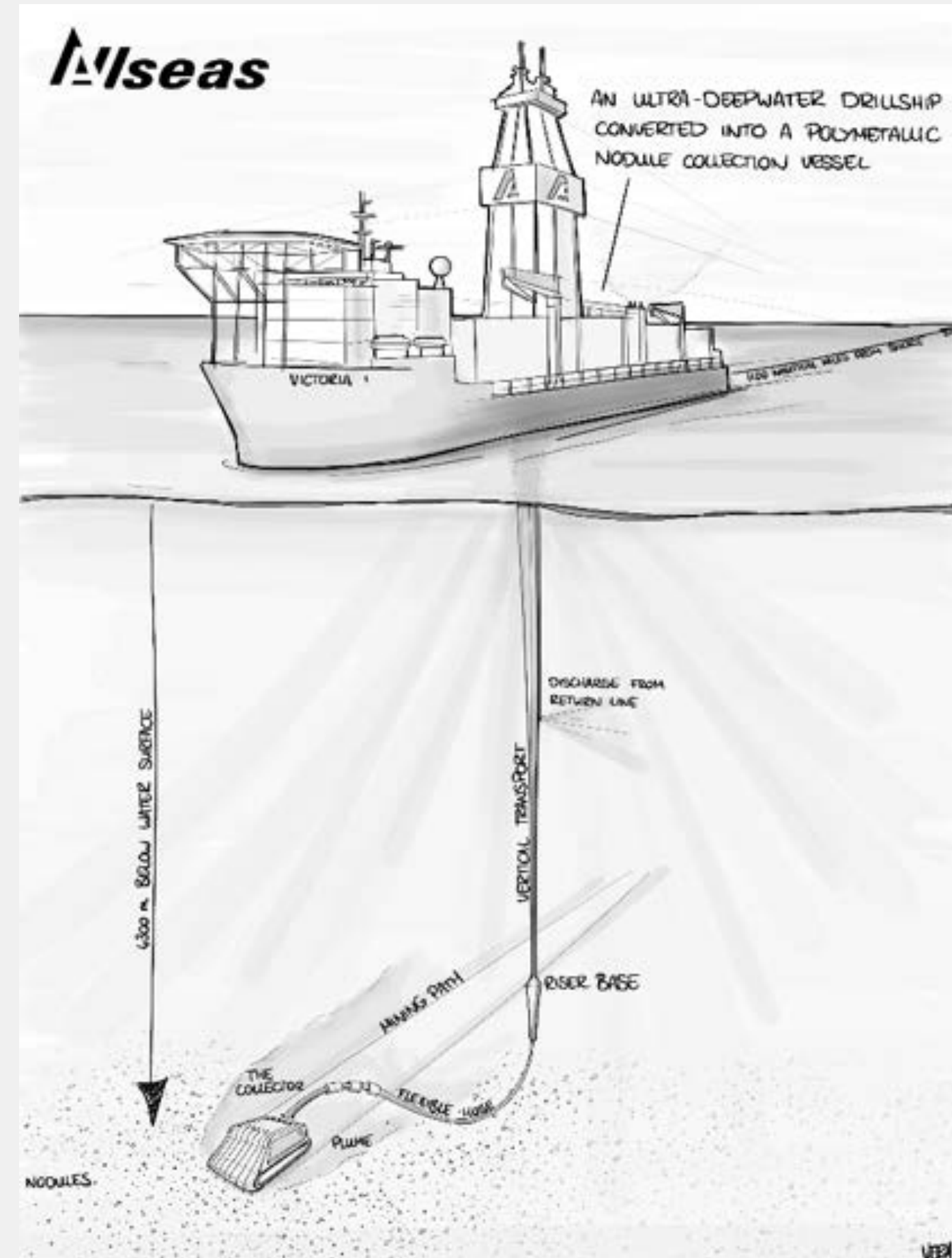
Explore several competing and/or complementary solutions.



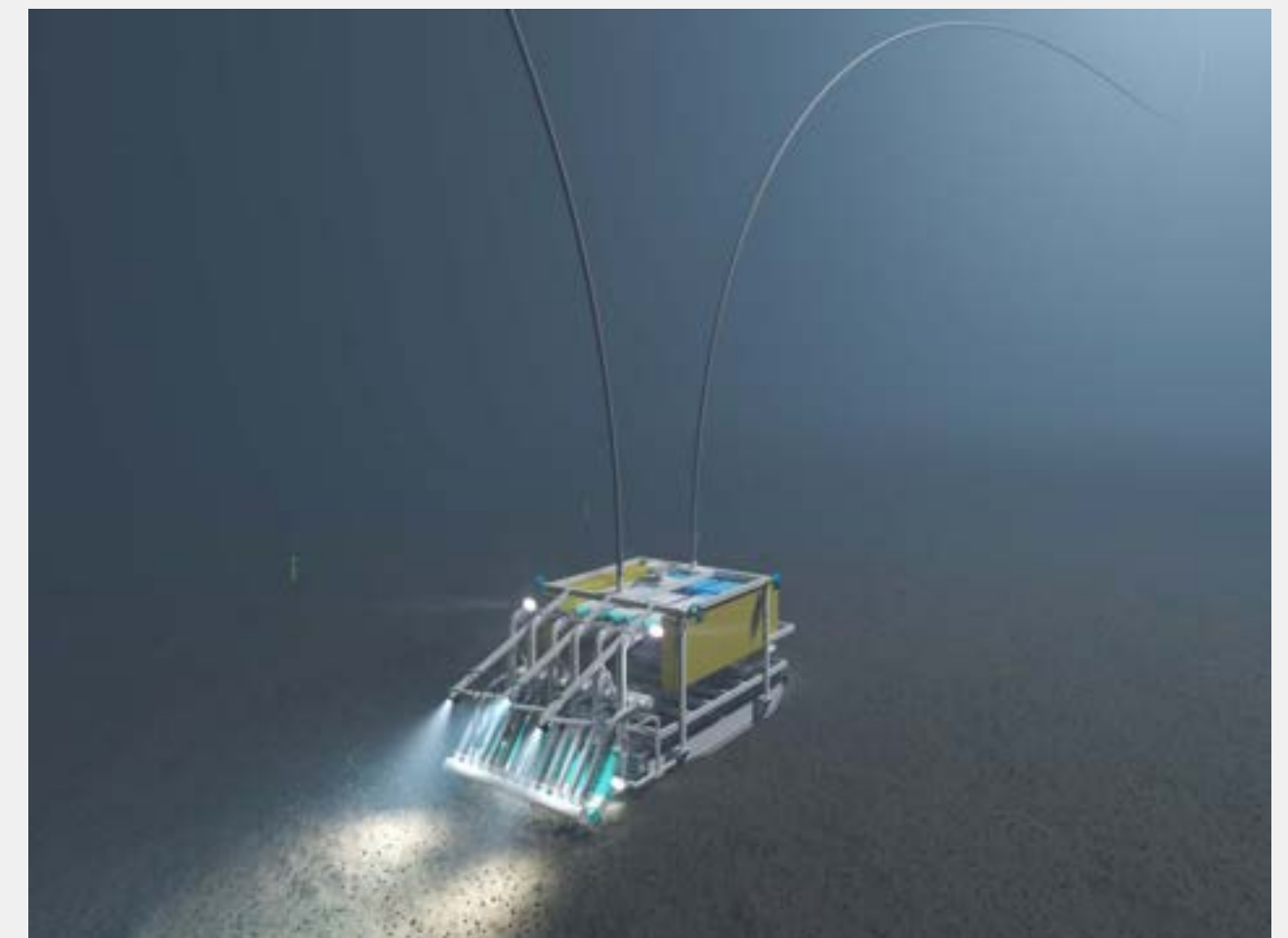
Collection system: the ultimate design.

- ✓ Plumeless
- ✓ Disturbs less than top 5 cm of sediment
- ✓ Lifts only nodules to the surface
- ✓ Generates zero CO₂e, SO_x & NO_x
- ✓ Does not release marine carbon sinks

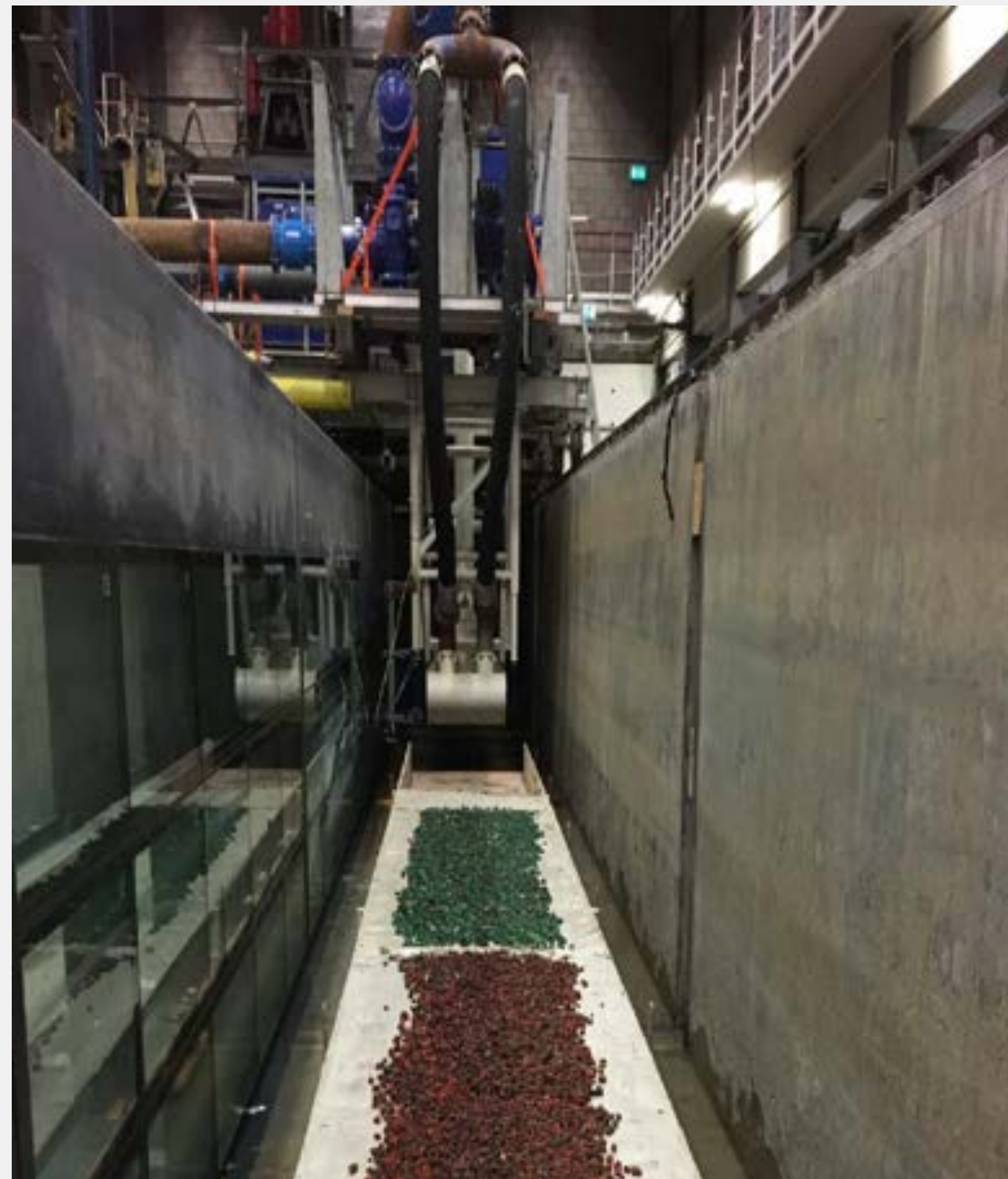
Allseas progress: base case pilot system developed by our partner.



On a fast track to reality



Allseas progress: lab testing ongoing.



An extensive testing program is currently competing tests in Deltares, Delft, and Allseas facility, Rotterdam

Theoretic nodule pick-up efficiency of two alternative collector designs has been extensively validated (Hydraulic vs. Mechanical)

Note: before and after test track photos



Allseas progress: visualization of nodule collection at lab scale.



NODULE PICKUP

[Play video](https://www.dropbox.com/s/lox3i3n3e38s23f/Allseas_collector%20prototype%20trials.mp4?dl=0)

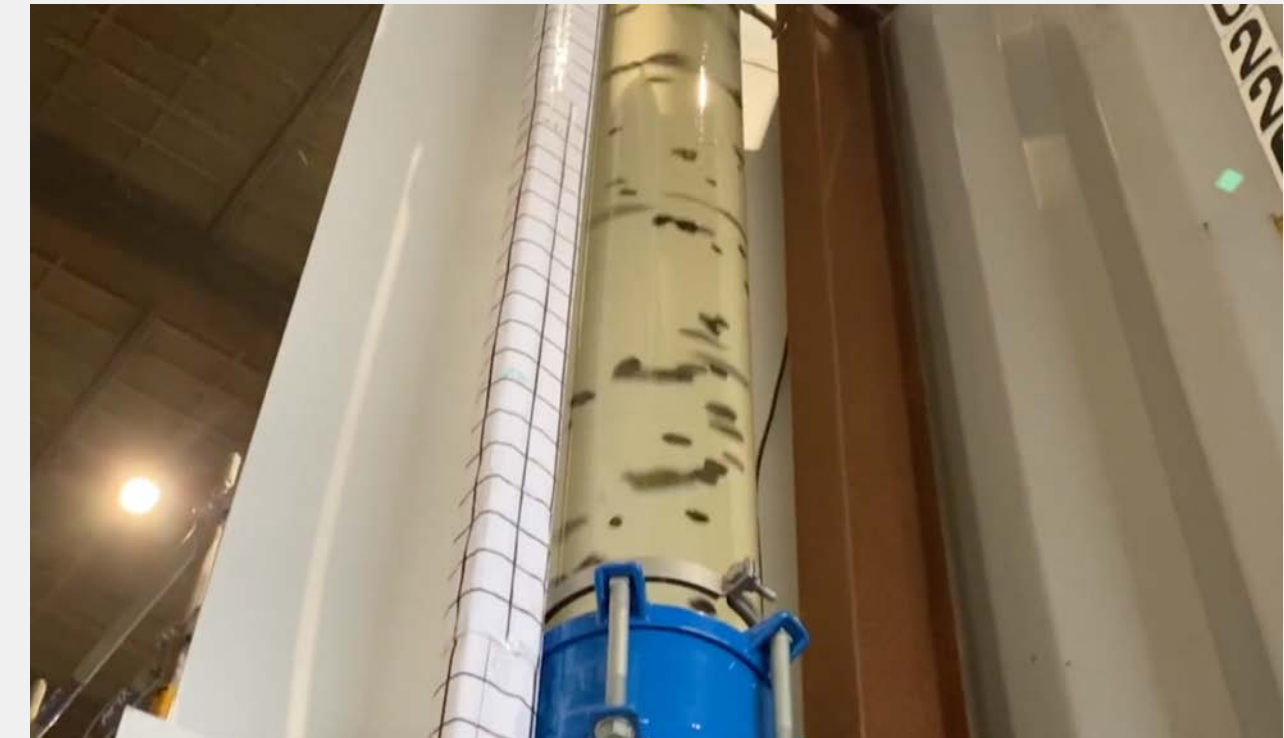
https://www.dropbox.com/s/lox3i3n3e38s23f/Allseas_collector%20prototype%20trials.mp4?dl=0



TRACKS

[Play video](https://www.dropbox.com/s/kelbc8fg5fwv49l/Allseas_collector%20track%20trials.mp4?dl=0)

https://www.dropbox.com/s/kelbc8fg5fwv49l/Allseas_collector%20track%20trials.mp4?dl=0



RISER

[Play video](https://www.dropbox.com/s/2p1ws8dqgh2mf29/Mission%20-%20Riser%20Trials.mp4?dl=0)

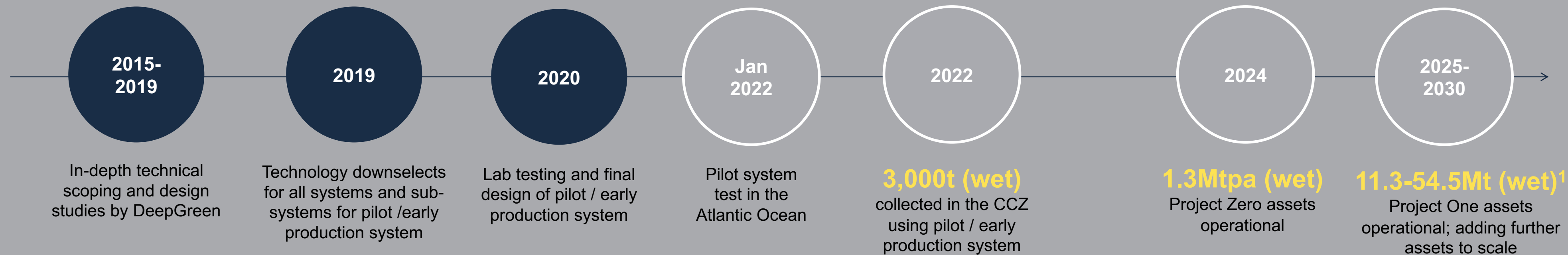
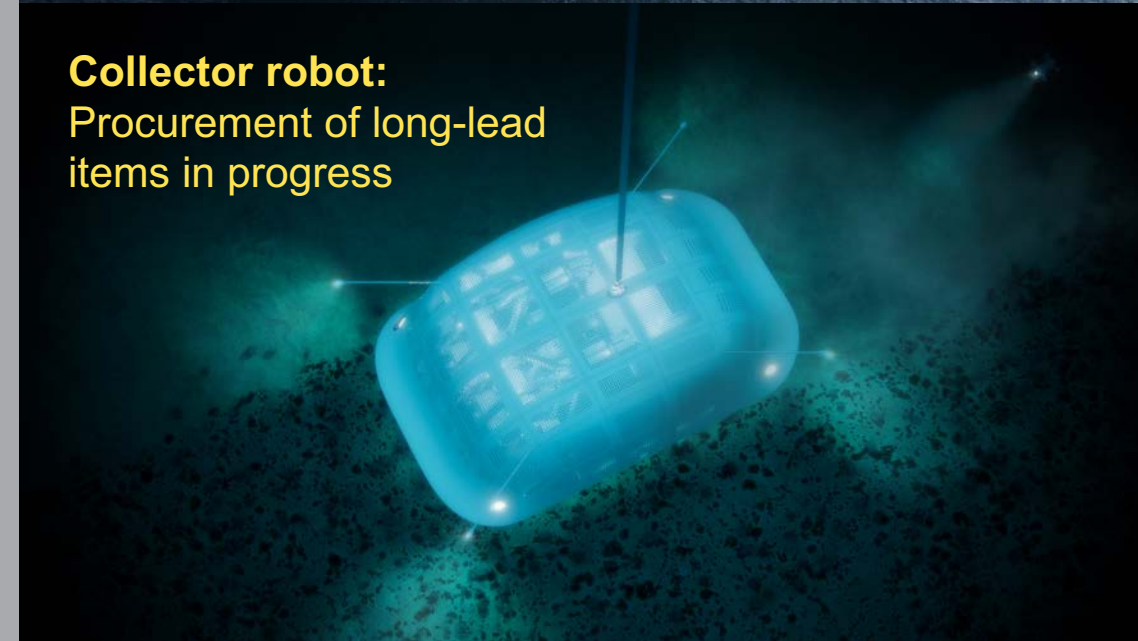
<https://www.dropbox.com/s/2p1ws8dqgh2mf29/Mission%20-%20Riser%20Trials.mp4?dl=0>

Development milestones: Progressing on track.

Production vessel & riser:
Drillship acquired
Conversion in progress



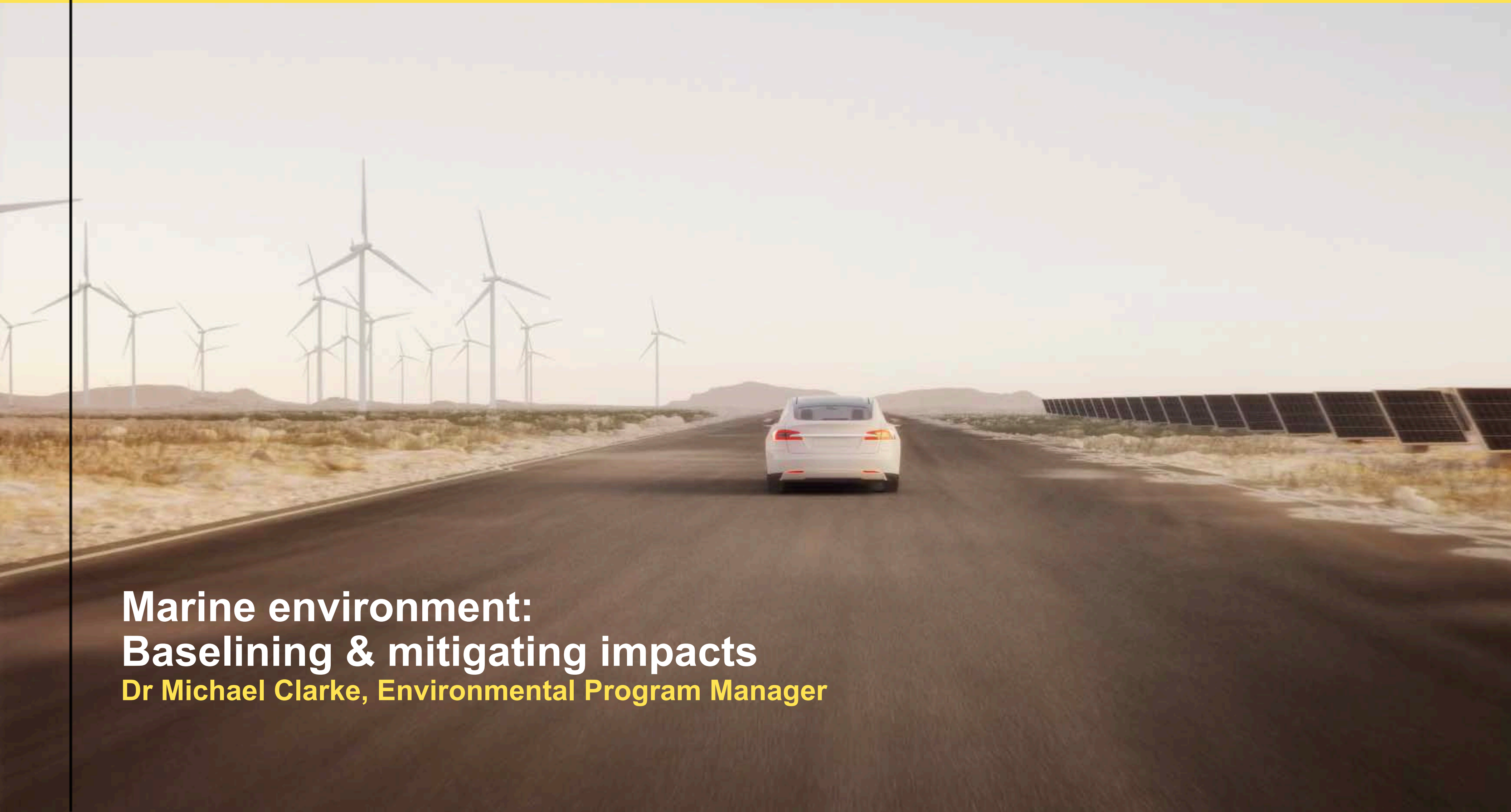
Collector robot:
Procurement of long-lead
items in progress



¹ 11.3Mtpa (wet) for NORI-D and 54.5Mtpa (wet) in full field development scenario for NORI+TOML.

**From pilot to production:
key risks & mitigation.**

What might go wrong	What we are doing about it
Offshore system development cost / schedule overrun	Engaged Tier-1 international marine contractor based on a fixed-fee performance based contract
Offshore system breakdowns	Extensive production engineering, commissioning, testing, trials with a strong focus on equipment reliability
Missing production targets	Combining best-in-class engineering with extensive operating experience in offshore and deep-sea environments
Adverse weather impacts	Our operating model is based on 3 years of intensive site measurements and we continue weather monitoring
Safety / lost-time incident	Adopting best-practice safety process and culture



Marine environment: Baselining & mitigating impacts

Dr Michael Clarke, Environmental Program Manager

Life in the ocean:
despite the large
area of the ocean,
most life is found
on land.

3%

of biomass lives in
the ocean

97%

of biomass lives
on land

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.
Source: Bar-On et al, The Biomass Distribution on Earth, PNAS, June 2018, www.pnas.org/cgi/doi/10.1073/pnas.1711842115

Marine minerals: why we only focus on nodules.

3,800-5,500m depth

The Abyssal Plains

Polymetallic nodules

2-30 cm diameter discrete rocks formed by dissolved metal compounds precipitating around a nucleus
Growth: 10-100mm 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

800-2,500m depth

Seamounts

Cobalt crusts

2-26 cm thick, rock-hard, metallic layers that precipitate on the flanks of submarine volcanoes
Growth: 1-5mm 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

1,000-4,000m depth

Hydrothermal vents

Seafloor massive sulfides

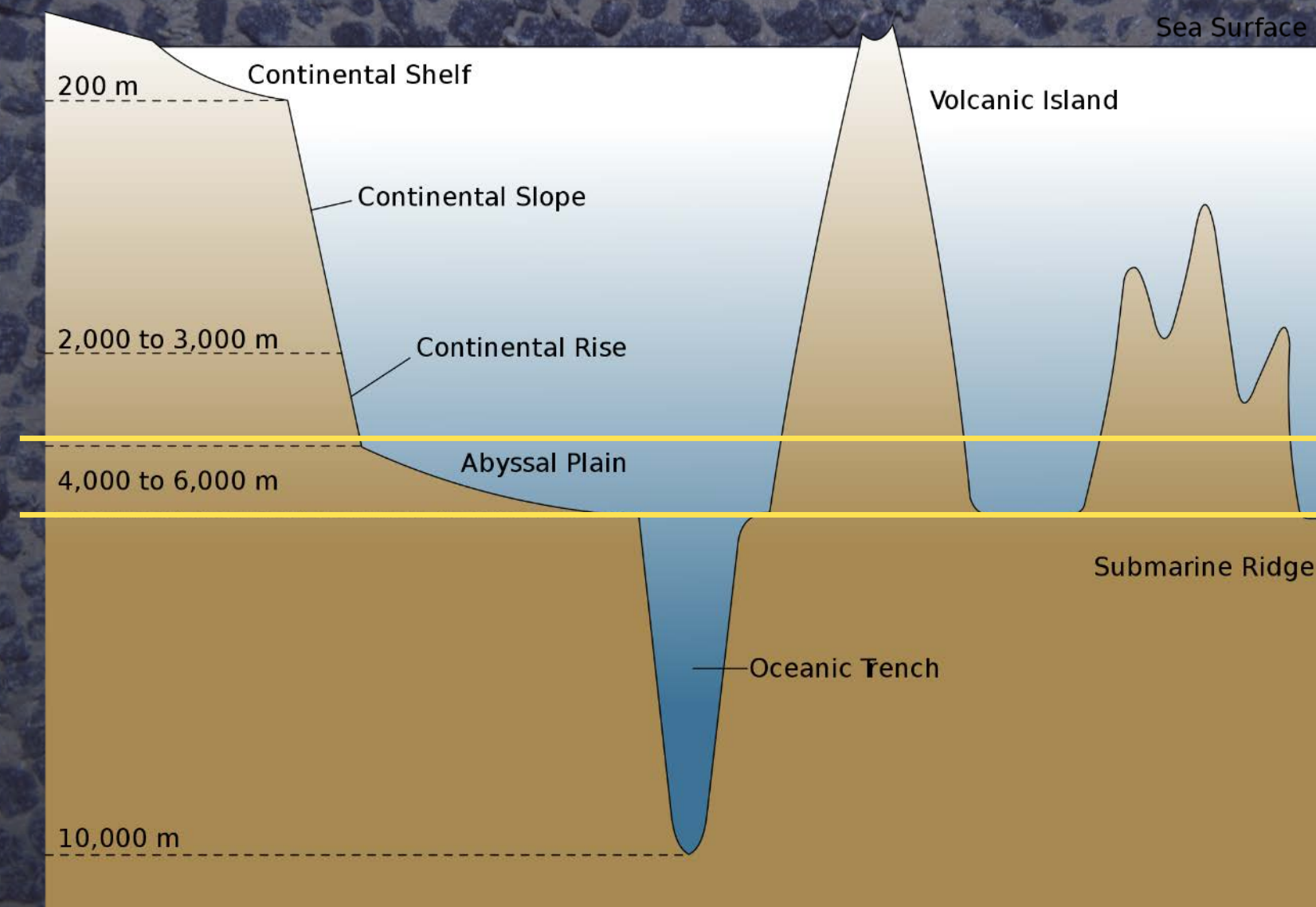
Tall chimney-like structures that form at hot vents where sulfide-enriched water flows out of the seabed, causing dissolved metals to bind into minute sulfide particles and sink as fine precipitants to the bottom

Integral part of the seafloor that requires hard-rock cutting to break the ore from the substrate

Abundant food supplied by chemoautotrophic bacteria which exploit energy-rich chemical compounds from the vents

100x biomass vs. Abyssal Plain

The Abyssal Plain: the most common biogeographical area on the planet.

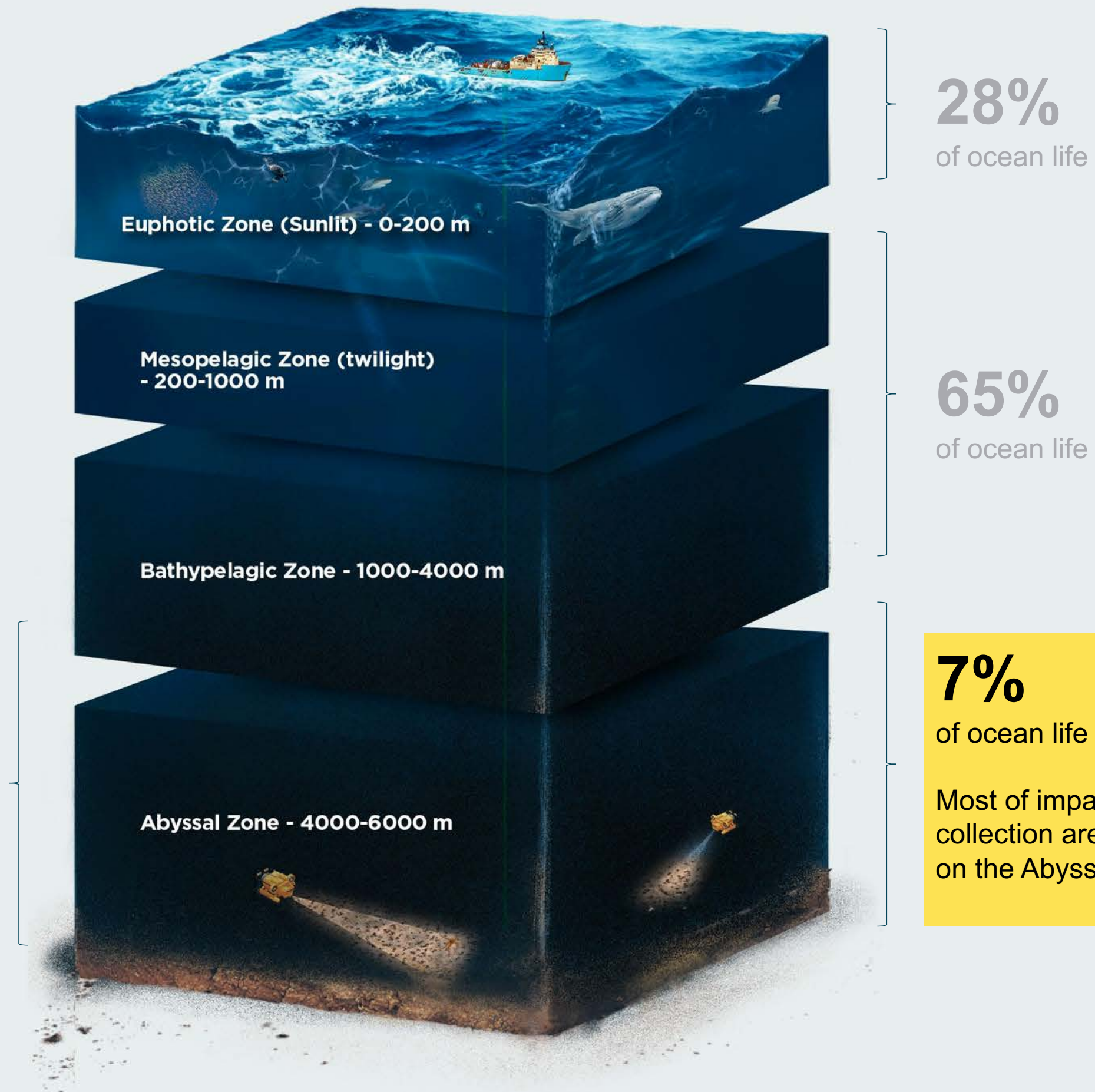


>50% of Earth's surface
covered by Abyssal Plains

More area in the CCZ is
already under protection
than under exploration

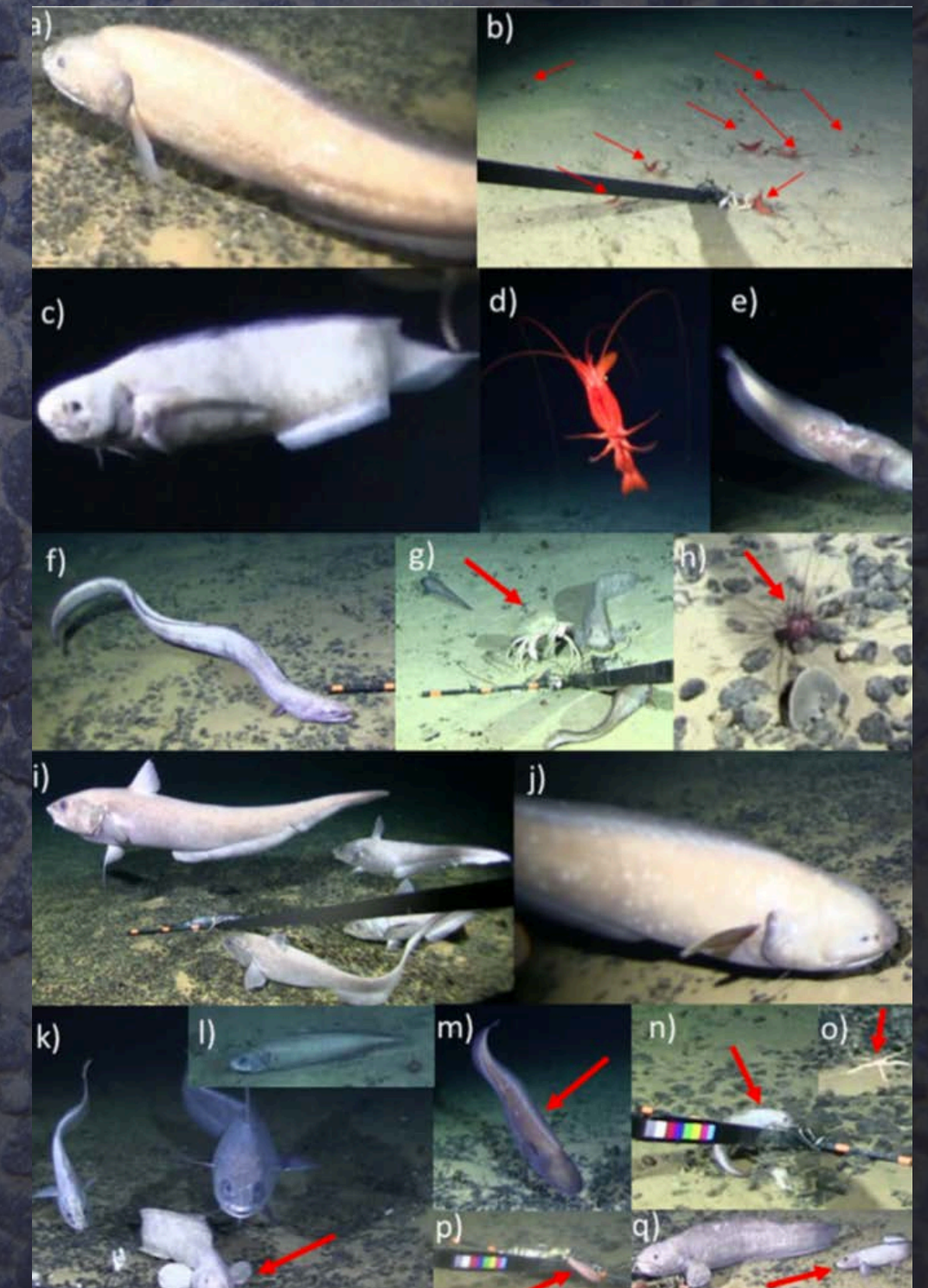
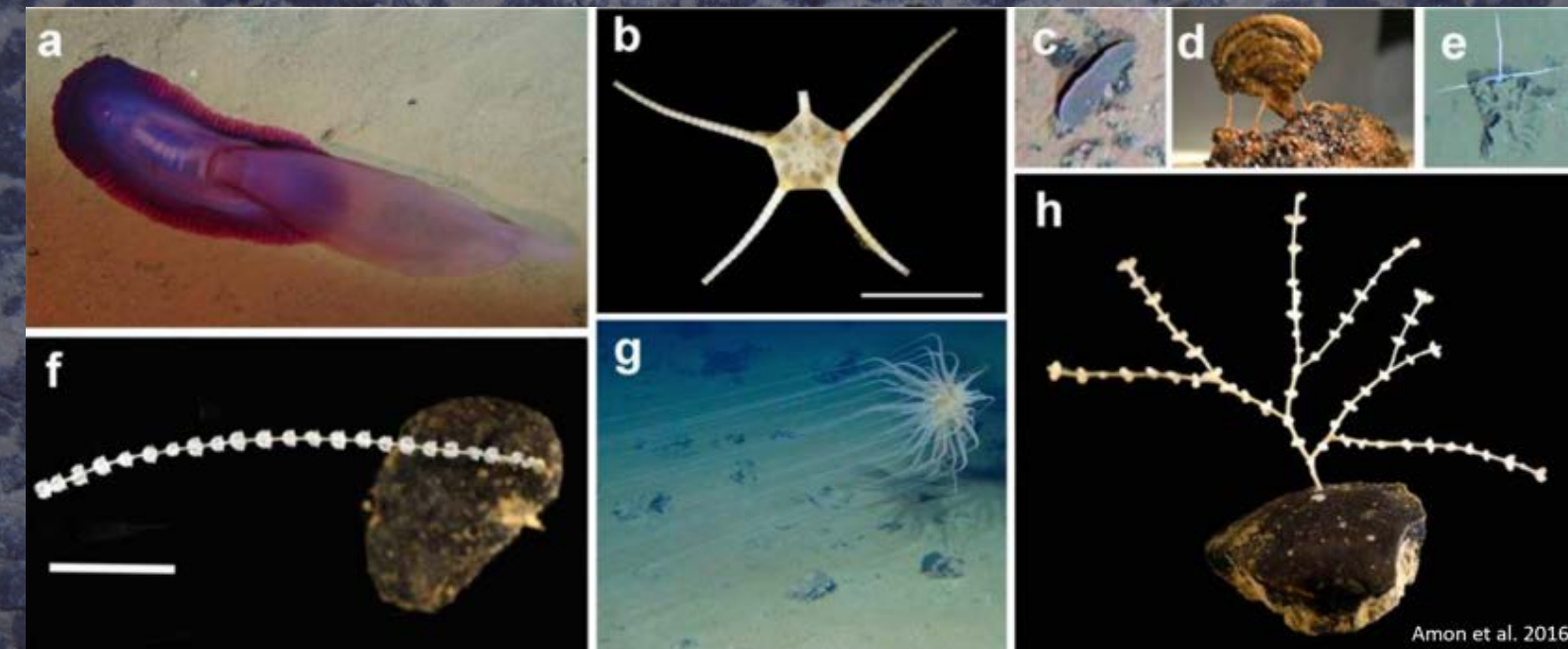
The Abyssal Plain: home to less than 10% of ocean life.

Abyssal plain is a vast sedimentary seabed, oxic to 2m. It has gentle depressions, troughs and ridges. There is intense pressure (5,700-8,500 psi) and no sound or light except the ones made by animals. This environment is food-poor and stable.



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.
Source: Bar-On et al, The Biomass Distribution on Earth, PNAS, June 2018, www.pnas.org/cgi/doi/10.1073/pnas.1711842115

The Abyssal Plain: home to a handful of fascinating wildlife.



Our impacts: what we worry about.

Support
vessel

Production
vessel

Bulk carrier

SUNLIGHT

-200 M

TWILIGHT

-1000 M

Riser using
airlift

MIDNIGHT

1. Nodule removal

Some organisms need hard nodule surfaces for critical life function. To protect and enable repopulation:

- 34% of CCZ is set aside by the ISA into protected areas
- 10% additional “no-take zones” set aside by DeepGreen
- 15% of nodules planned to be left behind in DeepGreen operational areas to enable repopulation

2. Sediment disturbance

Our collector robots expected to entrain and discharge top 5 cm of sediment under the nodules. 95% of suspended particles expected to resettle within days within 100s-1,000m of the origin. Work in progress to reduce impacts: modeling, exploring reduction solutions with discharge & mining patterns, ways to accelerate particle flocculation¹

3. Return water

Seawater used to transport nodules in the riser is expected to contain small amounts of sediment and fines from nodules breakage in transport. Modeling optimal re-injection points that will cause minimal disruption to marine wildlife.

-4000 M

THE ABYSS

-6000 M

OCEAN FLOOR

Collector robots

¹ Modelling completed by DHI.
Source: Company's ESIA program.

ESIA program: working with some of the best research institutions on the planet.



100+ studies

Seabed-to-surface ocean research program

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

Mega fauna Characterization (Photo transects)
Mega fauna Characterization (Time Lapse)
Macro Fauna Characterization
Micro Fauna Characterization
Meso Fauna Characterization
Macro Fauna 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

Met ocean studies
Bathymetry (seabed mapping)
Habitat mapping
Database development
Digital twin development
Collector test nearfield 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

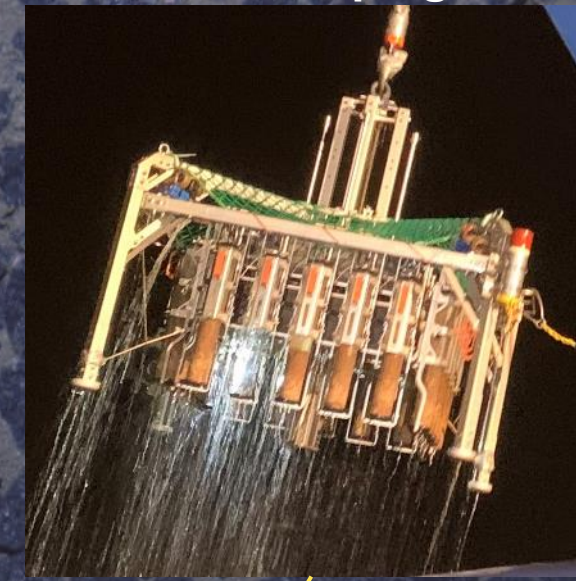
ESIA program: studies completed to date.



Benthic campaign 5A



Benthic campaign 5D



Collector test, CCZ



EIS
submission to ISA

2012-2020

2020

2021

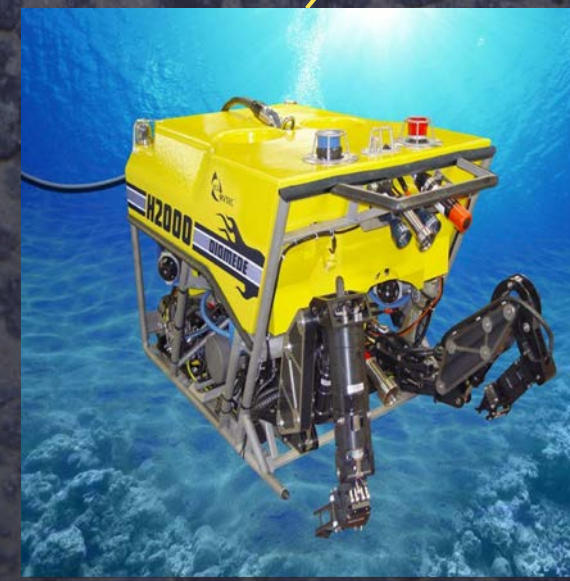
2022

2023

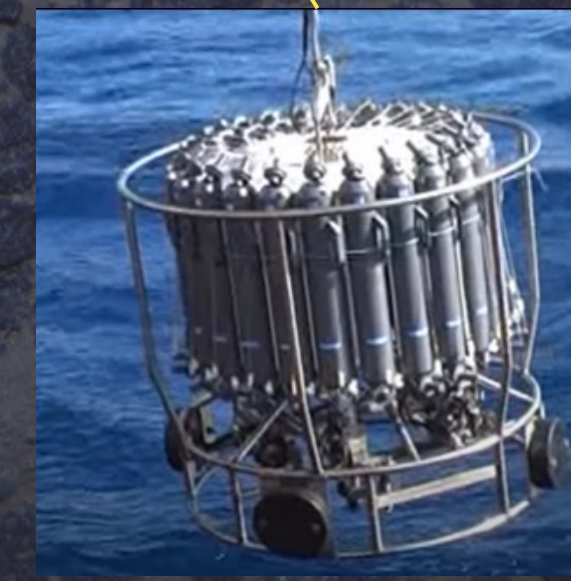
we are
were



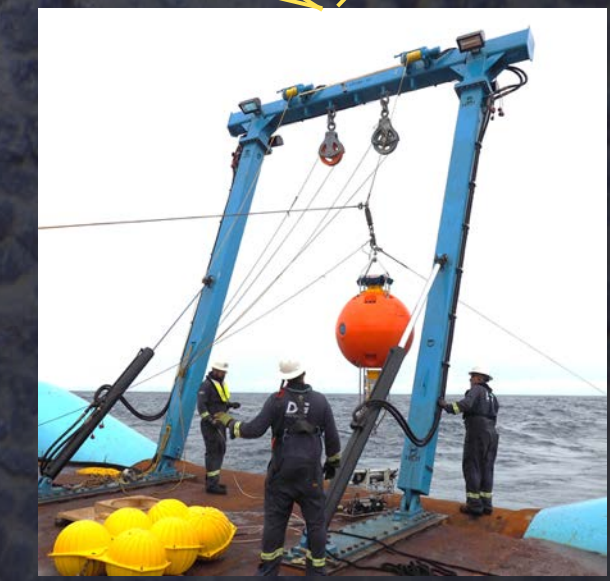
Met ocean moorings



Pelagic campaign 5B

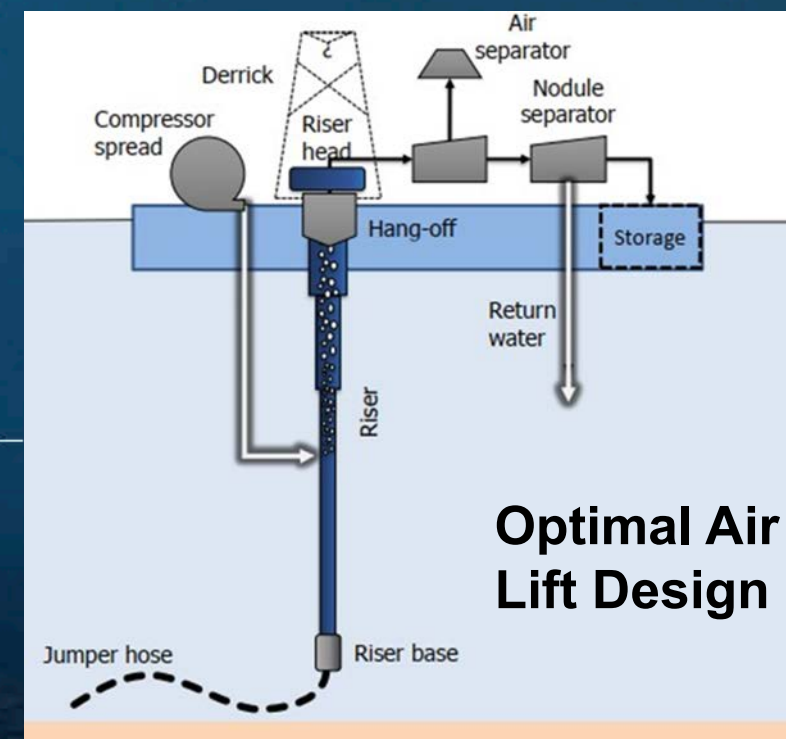
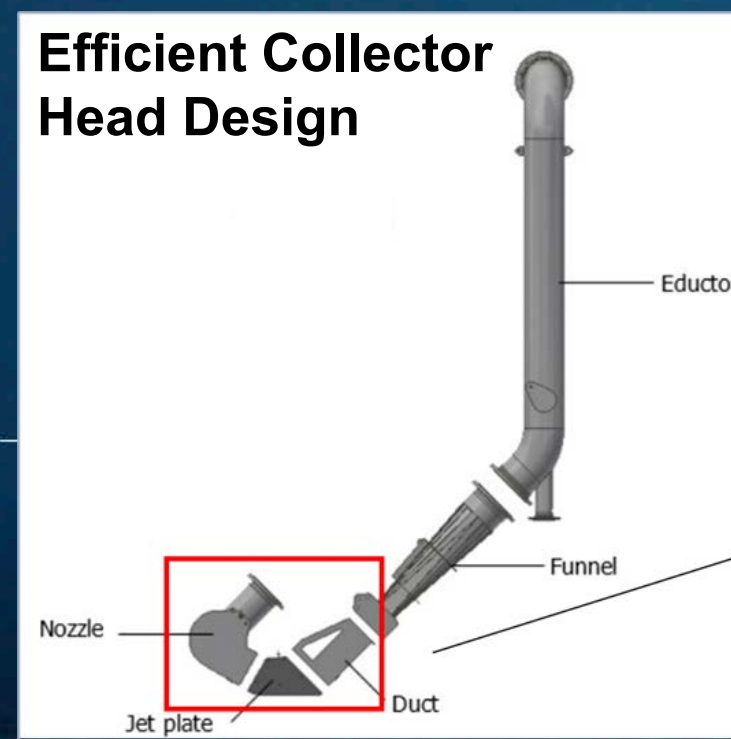
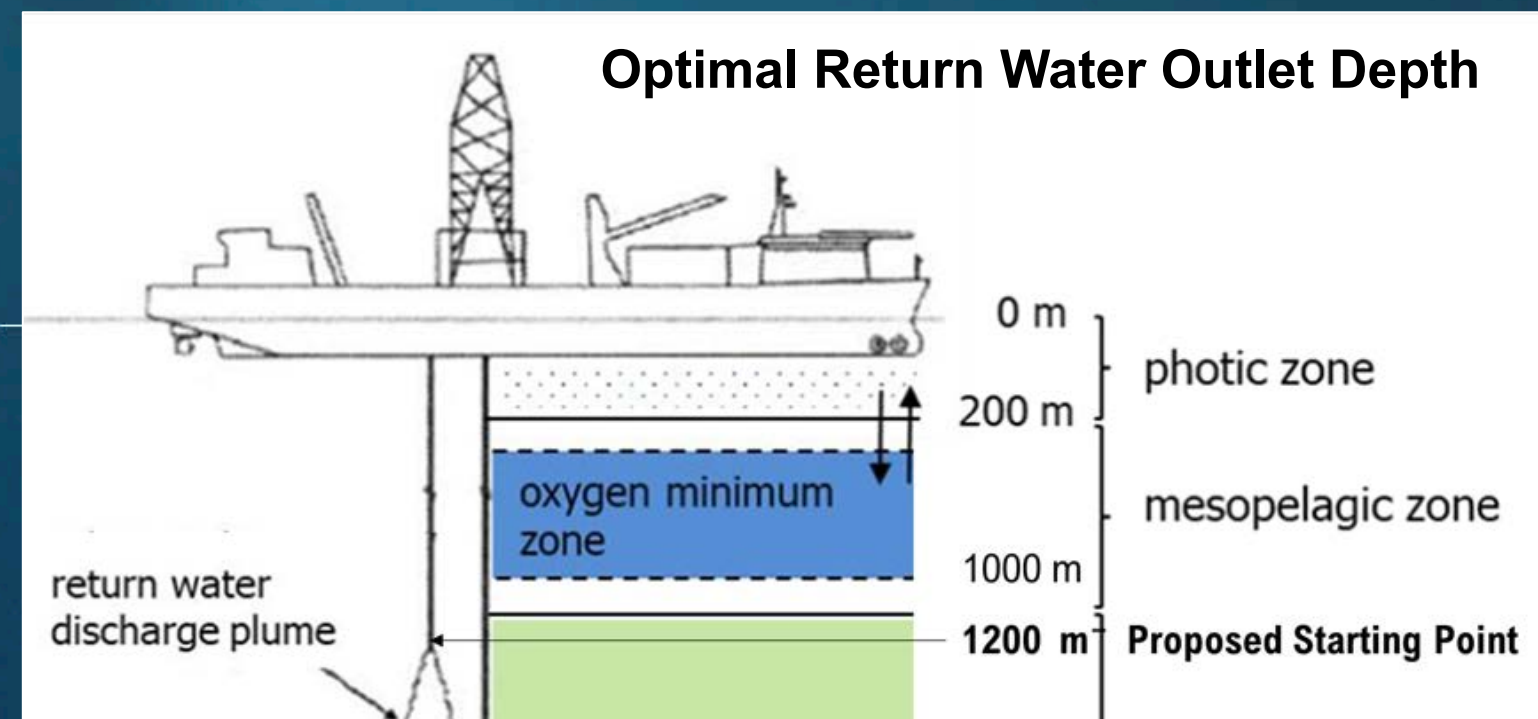


Pelagic campaign 5C



Met ocean moorings

Before production: system design choices to reduce impacts.



Support vessel

Production vessel

Bulk carrier

Riser using airlift

- ✓ Choose deposition depth based on least impact on life in water column
- ✓ Discharge outlet to maximize diffusion

- ✓ Design collector head to minimize sediment entrainment
- ✓ Design discharge outlet to accelerate sediment flocculation and settling

Collector robots

SUNLIGHT

-200 M

TWILIGHT

-1000 M

MIDNIGHT

-4000 M

THE ABYSS

-6000 M
OCEAN FLOOR

During production:
we can adapt to
mitigate impacts.



Mitigating actions:

- ✓ Avoid ecologically sensitive areas
- ✓ Slow down to reduce plume
- ✓ Track plume direction
- ✓ Select size of nodules collected
- ✓ Leave seed areas untouched

After production: what happens after we leave the area.

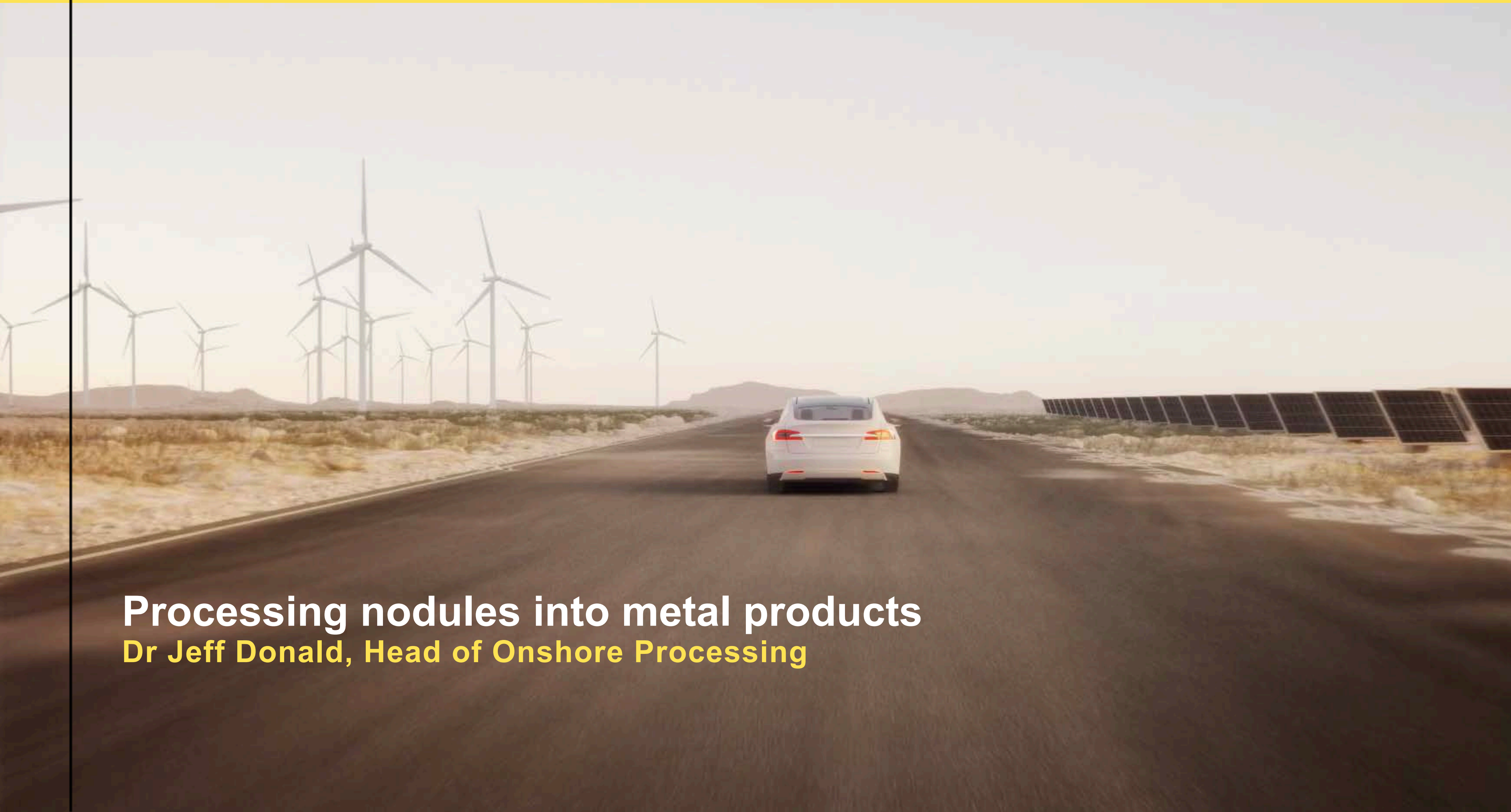
Following our one-time seafloor disturbance effort, the Abyss will be left to recover as there are no other competing human uses of the seafloor and few cumulative impacts this far from shore.

High variance in recovery rates among taxa, prevents predicting a general pattern of recovery or a sequence of successional stages at nodule fields (Gollner et al. 2017)

Anticipated recovery rates*

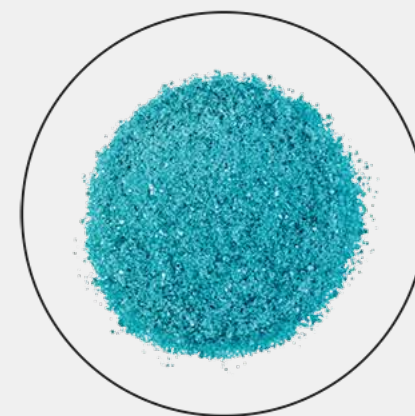
1-3 years: deep-sea fish & other mobile fauna
25 years: deposit feeders
50 years: microbial populations
?: nodule obligate suspension feeders

Long-term recovery studies will be conducted as part of our commitment to advancing scientific understanding

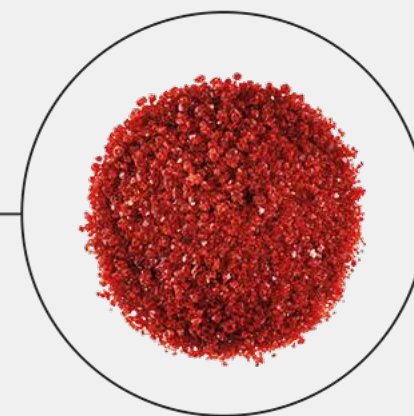


Processing nodules into metal products
Dr Jeff Donald, Head of Onshore Processing

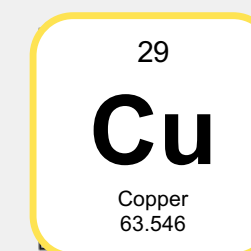
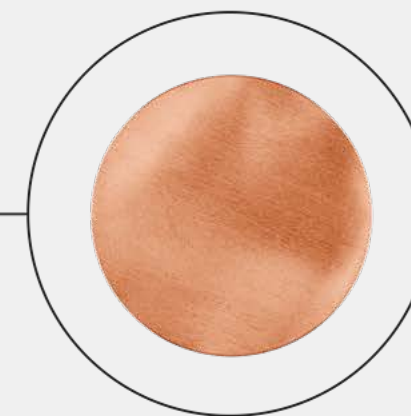
Our products:
we plan to turn
nodules into four
high value, critical
products.



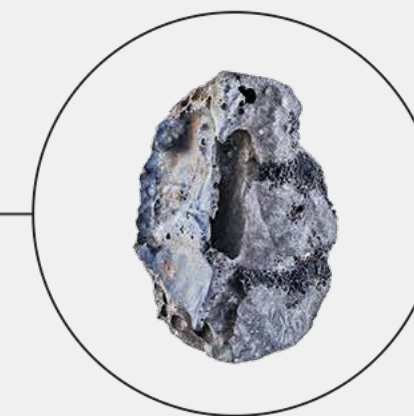
NICKEL SULFATE



COBALT SULFATE

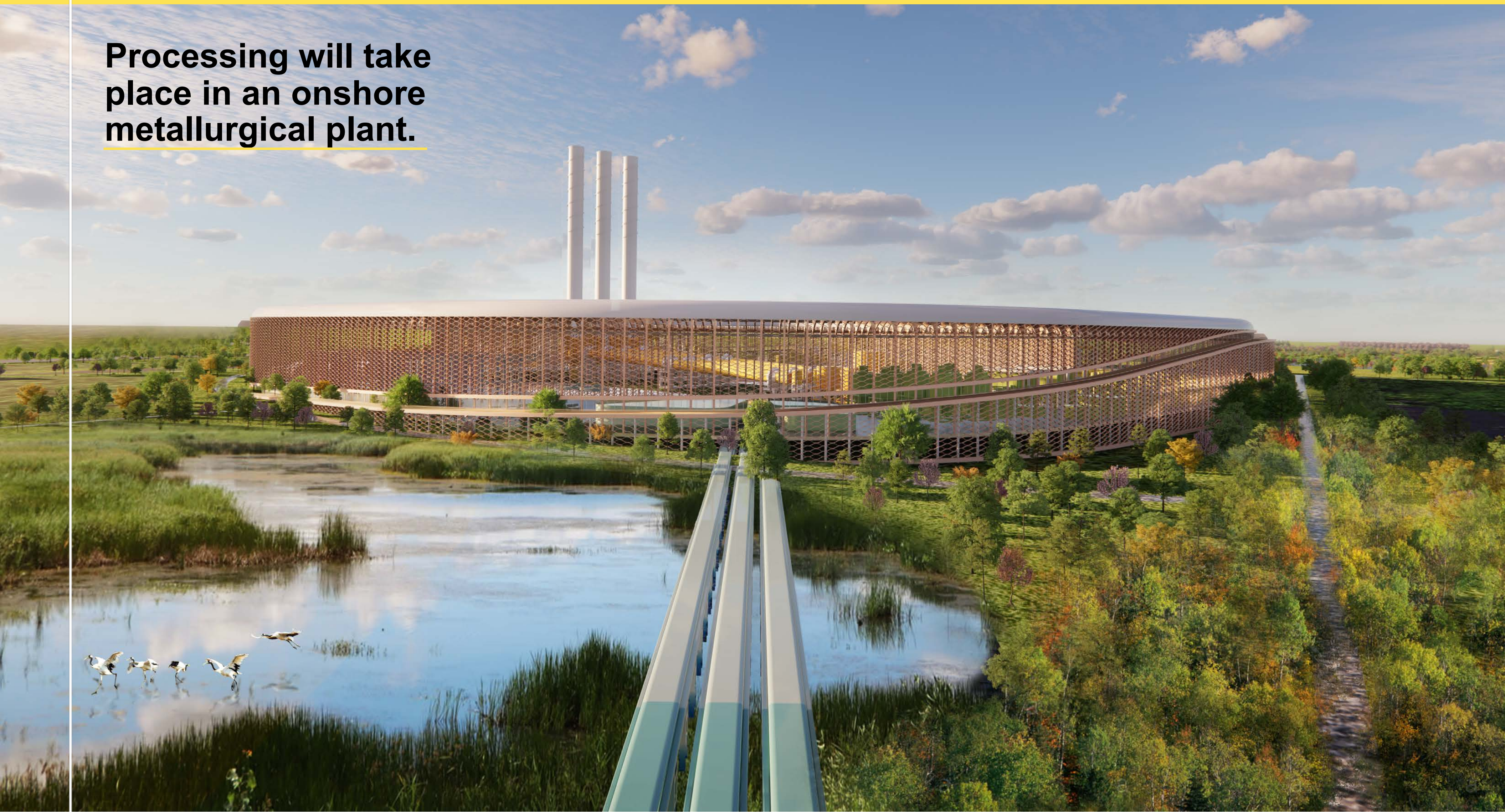


COPPER



MANGANESE

Processing will take place in an onshore metallurgical plant.



Dozens of Rotary Kiln - Electric Furnace (RKEF) plants processing nickel laterites in China, Indonesia, New Caledonia, South America

The diagram illustrates the integrated process of nickel and cobalt extraction, divided into two main sections: the **PYROMET. COMPLEX** and the **HYDROMET. REFINERY**.

PYROMET. COMPLEX: This section handles the initial processing of raw materials. **REFINERY RESIDUES** (containing SiO_2) and **COAL** are fed into a **ROTARY KILN CALCINING** unit. **NATURAL GAS** is also added here. The output goes to an **ELECTRIC FURNACE SMELTING** unit, which also receives **AIR/O₂** and **SULFUR**. The molten material then moves to a **CONVERTER SULFIDATION** unit, where more **AIR/O₂** and **SULFUR** are added. The final product from the converter is **MATTE GRANULATION**, which is then sent to **CASTING & CRUSHING** units. The **CONVERTER SLAG** is also sent to a **CASTING & CRUSHING** unit. The **MATTE GRANULATION** is then sent to a **CASTING & CRUSHING** unit.

HYDROMET. REFINERY: This section handles the chemical refining of the matte. **MATTE GRINDING** is the first step. The ground matte is then sent to **ATMOSPHERIC LEACH**, where **O₂** and **H₂SO₄** are added. The leachate then goes to **Fe REMOVAL**, where **NH₃** is added. The resulting solution is then sent to **Co SX** (solvent extraction) and **Ni SX** (solvent extraction), where **H₂SO₄** and **NH₃** are added. The **Co SX** and **Ni SX** streams are then sent to **CRYSTALLIZATION & DRYING** units. The **Co SX** stream is also sent to a **CRYSTALLIZATION & DRYING** unit. The **Ni SX** stream is then sent to a **CRYSTALLIZATION & DRYING** unit. The **Co SX** stream is also sent to a **CRYSTALLIZATION & DRYING** unit. The **Ni SX** stream is then sent to a **CRYSTALLIZATION & DRYING** unit. The **Co SX** stream is also sent to a **CRYSTALLIZATION & DRYING** unit. The **Ni SX** stream is then sent to a **CRYSTALLIZATION & DRYING** unit.

Final Products: The refined materials are then sent to various **TO MARKET** destinations: **Mn SILICATE**, **CONVERTER SLAG**, **NiSO₄·6H₂O**, **(NH₄)₂SO₄**, **CoSO₄·7H₂O**, and **Cu CATHODE**.

Zero solid waste: how we achieve it.



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

We select plant sites based on proximity to markets for by-products



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



We select reagents that produce products instead of waste

The alternative:
deforestation and
unmanaged
production waste.

NICKEL MINING
IN INDONESIA.



Flowsheet development: working with best-in- class service providers.

HATCH

Participation to ensure data for engineering deliverables is attained.

FLSMIDTH

Calcining

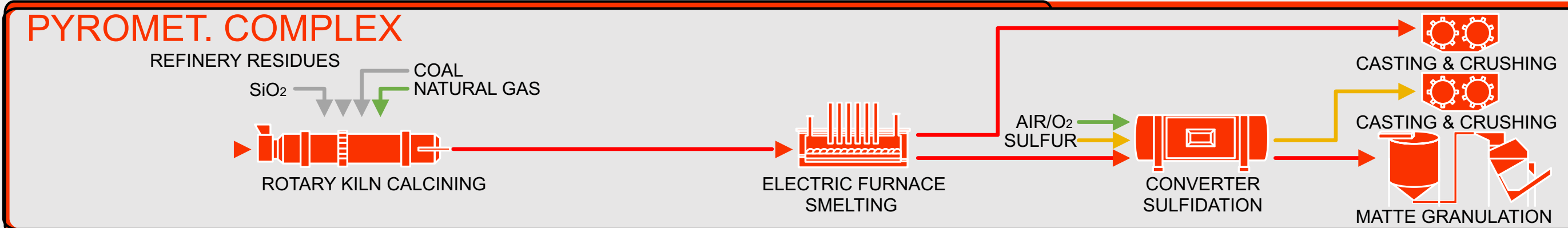
Pilot Kiln & Ancillary Systems
Whitehall, PA, USA



XPS | EXPERT PROCESS SOLUTIONS

Smelting, converting & sulfidation

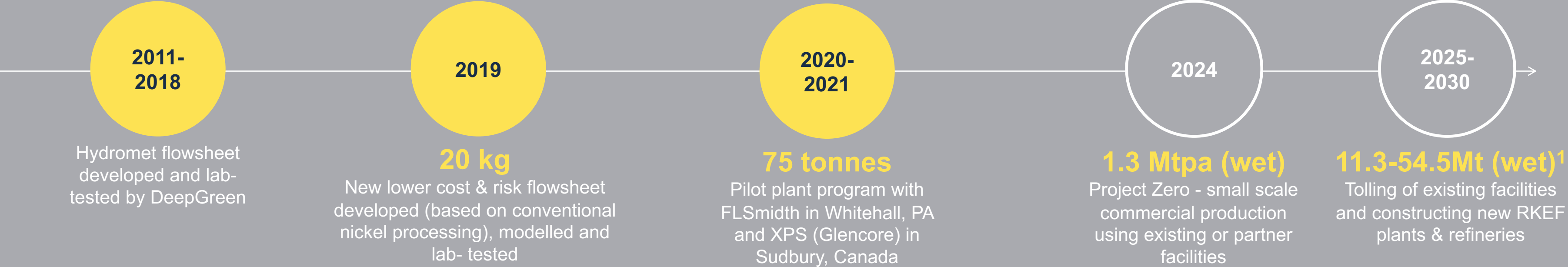
300kW DC Furnace & Ancillary Systems
Sudbury, ON, Canada



HYDROMET. REFINERY

Pilot status: Requests for proposal are being prepared.

**Achievable timeline:
Focus on systematic
de-risking.**



¹ 11.3Mpta (wet) for NORI-D and 54.5Mpta (wet) in full field development scenario for NORI+TOML.

From pilot plant to production: key risks & mitigation.

What might go wrong	What we are doing about it
Technology risk	Employ conventional equipment with analogous commercial precedence, project development according to established procedures (test work, pilot, engineering)
Metallurgical recoveries lower than estimated	Use conservative factors in development phases based on commercial precedence
Mn product marketability or valuation lower than estimated	Develop further downstream processing of Mn silicate into Mn alloy to capture value
CAPEX escalation	Identify all scope in development phases; develop project according to established Project Delivery System standards; be disciplined with respect to scope changes
Schedule delays	Plan with realistic timelines; leverage existing RKEF capacity for processing in event of delay

Thank you.

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