

### Forward looking statements.

This presentation contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, that relate to future events, TMC the metals company Inc.'s ("TMC" or the "Company") future operations and financial performance, and the Company's plans, strategies and prospects. These statements involve risks, uncertainties and assumptions and are based on the current estimates and assumptions of the management of the Company as of the date of this presentation and are subject to uncertainty and changes. Given these uncertainties, you should not place undue reliance on these forward-looking statements.

Important factors that could cause actual results to differ materially from those indicated by such forward-looking statements include, among others, those set forth under the heading "Risk Factors" contained in TMC's Annual Report on Form 10-K for the year ended December 31, 2021, which was filed with the Securities and Exchange Commission on March 25, 2022, as well as any updates to those risk factors filed from time to time in TMC's subsequent periodic and current reports. All information in this presentation is as of the date of this presentation, and the Company undertakes no duty to update this information unless required by law.

#### **Regulation G – Non-GAAP financial measures:**

This presentation contains certain non-GAAP financial measures which are provided to assist in an understanding of TMC's business and its operational performance. These measures should always be considered in conjunction with the appropriate GAAP measure. Reconciliations of all non-GAAP amounts to the relevant GAAP amount are provided in the Appendix to this presentation.

#### **HIGHLIGHTS**

#### Historic project development milestones achieved since last update.

#### Q3 results

- Net loss of \$27.9 million and loss per share of \$0.12 for Q3 2022 compared to a net loss of \$36.7 million and \$0.18 per share in Q3 2021
- Lower net loss mainly attributable to a decrease of \$5.9 million in non-cash share-based compensation as significant stock options were granted prior to the September 2021 Business Combination, lower environmental program costs of \$3.2 million following the completion of NORI Area D baseline campaigns and decrease in professional and other fees of \$2.9 million mostly due to the Business Combination taking place in 2021, partially offset by the increase of \$3.7 million in pilot mining test costs.

#### Cash

- Total cash of \$66.9 million at September 30, 2022
- \$8.7 million cash used in operations in Q3 2022 vs. \$10.4 million in Q3 2021
- We believe that our cash on hand will be sufficient to meet our working capital and capital expenditure requirements for at least the next twelve months from today

#### **Financing**

- In Q3 2022, the Company completed a private investment in public equity (PIPE) financing and raised \$30.4 million in gross proceeds
- In October 2022, the SEC declared effective TMC's \$100 million universal shelf filing on a form S-3 registration statement effective

#### **Milestones**

- NORI Receives ISA Recommendation to Commence Trials: In September, we announced that the International Seabed Authority (ISA) had completed its review of the Environmental Impact Statement (EIS) and Environmental Monitoring and Management Plan (EMMP) submitted by our subsidiary, NORI, and recommended that it proceed with its forthcoming collector test.
- NORI Collector Test Monitoring: In October, we announced that a multidisciplinary team of independent scientists from leading research institutions around the world and industry-leading contractors commenced the next phase of an extensive environmental baseline and impact monitoring campaign in preparation for NORI's pilot nodule collection system trials in NORI Area D area of the Clarion Clipper Zone (CCZ).
- **First Nodules Collected from Seafloor in Historic Trials:** In October, we announced the successful collection of an initial batch of seafloor polymetallic nodules delivered via riser system to the surface production vessel in what represents the first integrated collection system test conducted in the CCZ since the 1970s.
- Successful Conclusion of Integrated Pilot Collection System Trial: In November, we announced the conclusion of the historic integrated system trial in the CCZ. The trial achieved all significant pilot production milestones, with engineers remotely driving the pilot collector vehicle over 80 kilometers of the seafloor, collecting ~4,500 tonnes of nodules and lifting over 3,000 tonnes of nodules up a 4.3-km riser system to the surface production vessel, Hidden Gem. The Allseas-designed pilot nodule collection system achieved a maximum sustained production rate of 86.4 tonnes per hour and is expected to reach an estimated average production rate of over 200 tonnes per hour after pilot system goes through upgrades and optimizations in preparation for NORI's Project Zero.

#### Agenda.

Our value proposition	5
Market update	7
Regulatory update	9
NORI-D project update	12
Near-term milestones	23
Financial highlights	24
Appendix	29

#### **OUR VALUE PROPOSITION**

# Our resource alone can supply U.S. demand for nickel, cobalt and manganese.



= Approximate raw material requirements of one million electric vehicles<sup>1</sup>

#### **Eagle Mine**

137.000t Ni / 3.700t Co Total Resource

Only U.S. miner of nickel or cobalt reaching end of life 2025<sup>2</sup>
\*Nickel concentrate (11-14%) exported for refining

#### **Talon Metals**

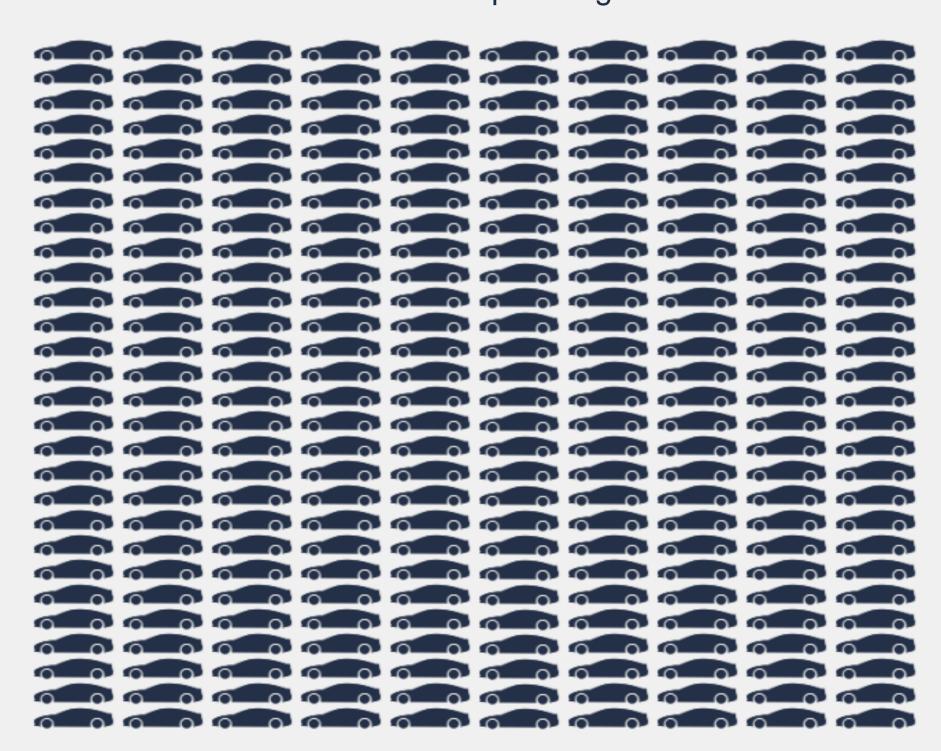
135.000 t Ni / 3,500 t Co Total Resource

Unpermitted Tamarack project in Minnesota, enviro. review in 2023<sup>3</sup>
\*Nickel concentrate (13%) likely exported for refining



#### **The Metals Company**

15,700,000 t Ni / 2,400,000 t Co / 13,300,000 t Cu / 350,000,000 t Mn Total Resource Estimated *In situ* quantities of nickel, copper, cobalt and manganese equivalent to the requirements of 280 million vehicles or the entire U.S. passenger vehicle fleet<sup>1</sup>



<sup>1</sup> 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

<sup>&</sup>lt;sup>2</sup> https://lundinmining.com/site/assets/files/3640/2017-04-26-eagle-ni-43-101.pdf

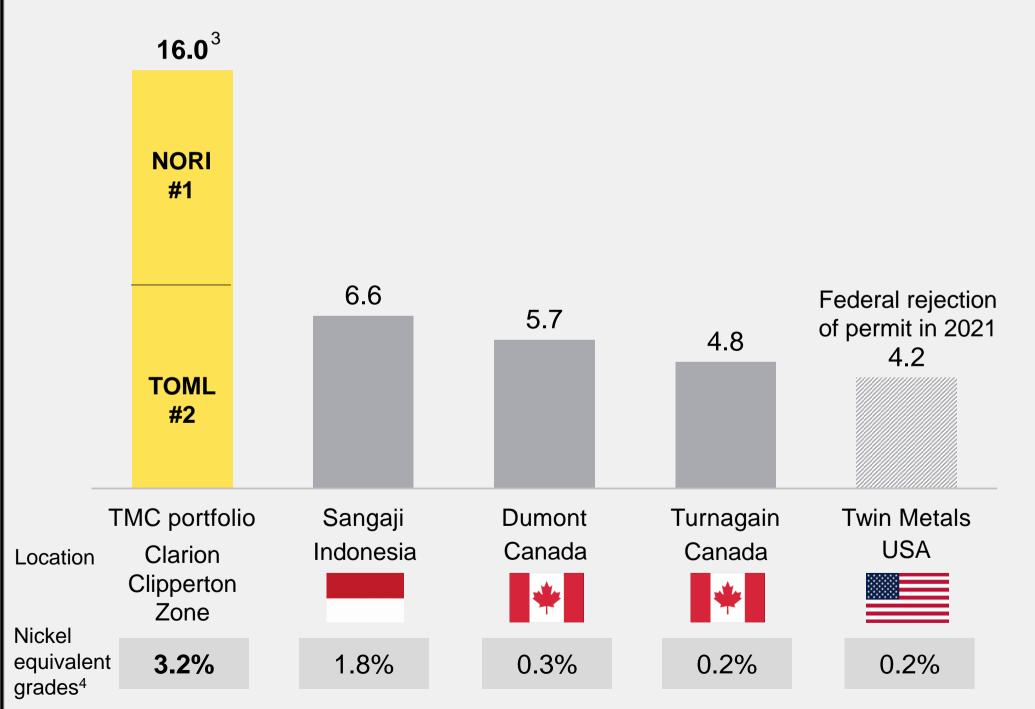
<sup>&</sup>lt;sup>3</sup> https://talonmetals.com/wp-content/uploads/2020/08/Talon-Tamarack-PEA-Update-12Mar2020-Final.pdf

#### **OUR VALUE PROPOSITION**

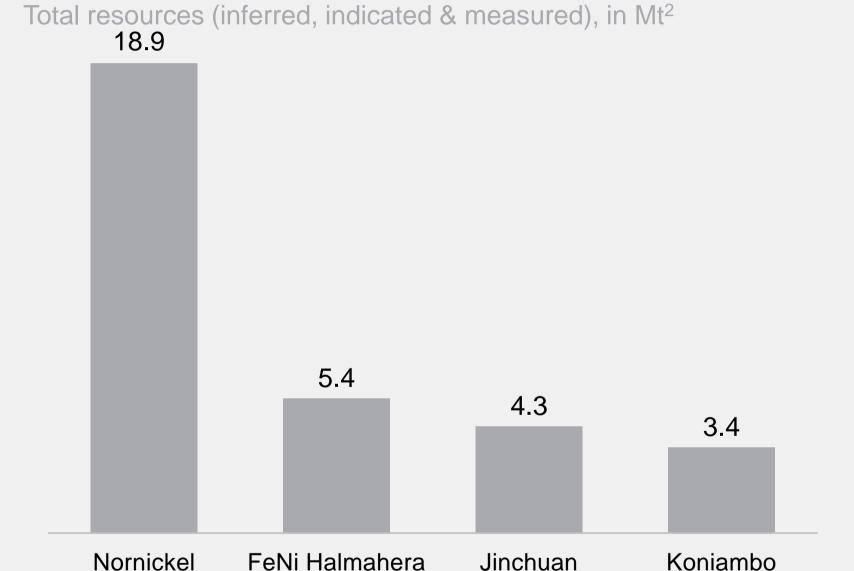
#### TMC: #1 and #2 largest undeveloped nickel projects on the planet, and the alternative to Russian- and Chinese-controlled supply.

#### World's largest nickel projects – 2022

**MINING** Total est. resources (inferred, indicated & measured), in Mt<sup>1</sup> [DOT] COM



#### World's largest nickel operations ranked by resource



Indonesia

1.9%

Russia

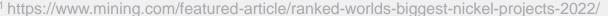
2.3%

China

1.3%

New Caledonia

2.5%



<sup>&</sup>lt;sup>2</sup> Global Nickel Industry Cost Summary, Wood Mackenzie, August 2020; inclusive of reserves. Asset Reports for FeNi Halmahera, Jinchuan and Koniambo.

<sup>&</sup>lt;sup>3</sup> Canadian NI 43-101 Resource Statement for full field financial model (internal DeepGreen development scenario).

<sup>&</sup>lt;sup>4</sup> Nickel equivalence calculation uses NORI-D Model price deck as stated in NORI Initial Assessment available at investors.metals.co.

#### MARKET UPDATE

Potential for nodules in focus in the U.S., as Indonesia mulls OPEC-style battery metal cartel.<sup>1</sup>



Letter from U.S. Secretary of Energy Jennifer Granholm responding to Senator Lisa Murkowski (R-AK) on polymetallic nodules, July 2022:

"DOE believes that the environmental, social, community, and national security issues pertaining to marine minerals need to be accurately compared to the impacts of onshore resource extraction, processing, and utilization throughout the world...In light of global demand for critical minerals, it is reasonable to expect that exploitation of these resources will at some point occur...DOE is continuing to work with interagency partners to consider all potential sources of critical minerals for the supply chain including the role that seabed nodules could play in the future."



Innovative agreement will have union workers processing critical minerals from seafloor nodules for production of electric car batteries, Sept 2022:<sup>2</sup>

"UAW and The Metals Company (TMC) announced that they have entered into a labor neutrality agreement to bolster the critical mineral supply chain and to lay the groundwork for sustainable production of electric car batteries while creating a path to more good union jobs in the United States...building large-scale metals processing infrastructure and mineral supply chains in the United States will enhance national and economic security."

<sup>&</sup>lt;sup>1</sup> https://www.afr.com/companies/energy/indonesia-eyes-opec-style-cartel-for-battery-metals-20221031-p5budd

<sup>&</sup>lt;sup>2</sup> https://www.globenewswire.com/en/news-release/2022/09/30/2525942/0/en/Innovative-agreement-will-have-union-workers-processing-critical-minerals-from-seafloor-nodules-for-production-of-electric-car-batteries.html

#### MARKET UPDATE

# Major news coverage of TMC and nodules in the last three months.



TMC Gets Approval for Pilot Deep-Sea Mining Project Sept 2022



Should we mine the deep sea?

Sept 2022

### The New York Times

Battle Over Deep-Sea Mining Takes on New Urgency as Trial Run Winds Down

Nov 2022



Lit: America's Future Sept 2022

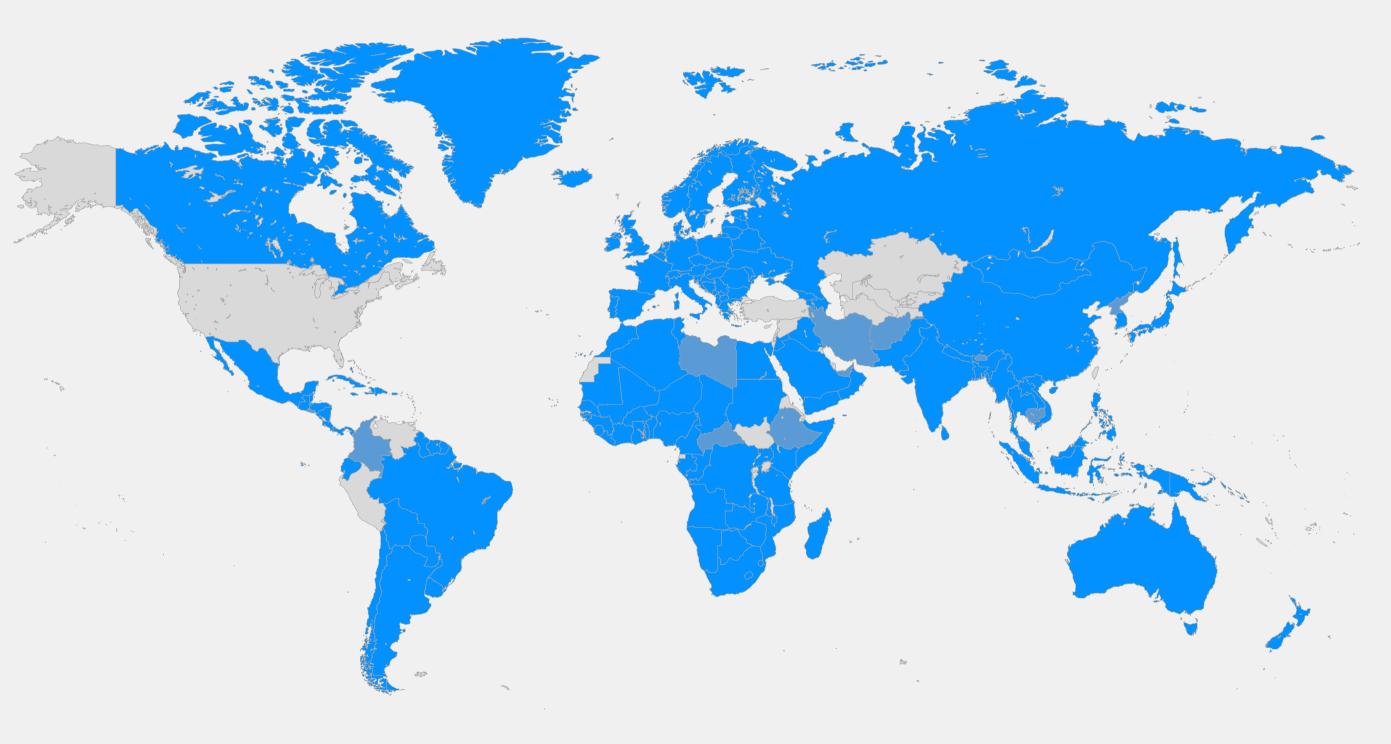
#### REGULATORY UPDATE

Regulated by the International Seabed Authority established in 1994 by UNCLOS.





- The International Seabed Authority (ISA)
  was established in 1994 by the United
  Nations Convention on the Law of the Sea
  (UNCLOS) and regulates seabed minerals
  beyond national jurisdiction.
- Issues Exploration Contracts to qualified applicants who are sponsored by a State Party to UNCLOS.
- 19 polymetallic nodule contracts issued to date to a mix of state-backed, state-owned and commercial contractors.



#### REGULATORY UPDATE

# While some states raised concerns, most statements recognized the ISA's obligation to finalize regulations.





During Part III of the ISA's 27<sup>th</sup> Session, the majority of participating states expressed their continued support for negotiating robust regulations that ensure the protection of the marine environment, and were concerned by the position taken by France calling for a 'ban' on exploitation activities.

#### Closing Statement by ISA Secretary-General, Michael Lodge, 11 November 2022:

"Each chapter of the Convention is an integral part of the whole. Its provisions reflect the ecological unity of the ocean and are carefully designed to respond to the interests of all States Parties, including developing States Parties. It is not legitimate to pick and choose different elements depending on the circumstances and the need to appease particular constituencies... Significant progress has been made in one year and that is already clear evidence of the overwhelming support demonstrated by States Parties and observers in fulfilling the vision of Part XI and the 1994 agreement."

#### Statement by Te-ara Henderson on behalf of the Cook Islands to ISA Assembly, 10 November 2022:

"While we are still seeking to better understand the new position of France, it is our initial view that this new position undermines basic principles of international law, and is therefore untenable and irreconcilable with multilateralism, cooperation and good faith in the implementation of our collective UNCLOS treaty obligations...The Cook Islands, like other delegations, seeks to better understand the implications of France's new position on continuing to advance, in good faith, the work of the ISA. In this respect, we seek further clarification from France on its continued role in the ISA - as a Council member, as a Sponsoring State and as a Contractor in the Area."

#### **REGULATORY UPDATE**

#### ISA roadmap targeting final exploitation regulations by July 2023.



#### **Timeline**

2H 2023

2H 2024

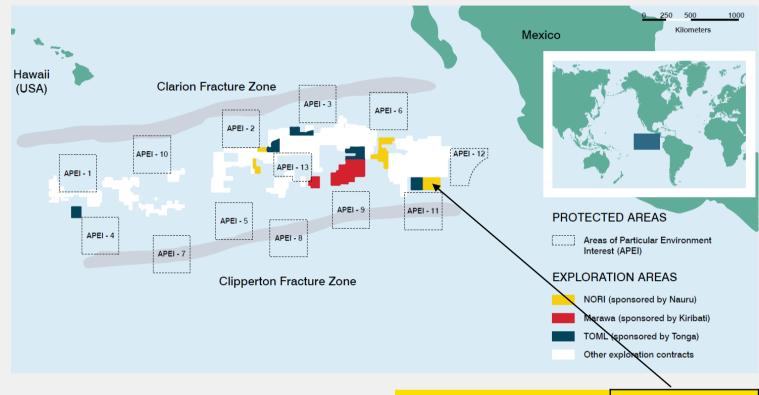
2014 July 2020 9 July 2021 Dec 2021 March 2022 July/Aug 2022 Oct/Nov 2022 March 2023 July 2023 **July 2023** 

ISA commences work to develop exploitation regulations ISA stated goal for adoption was delayed due to COVID Government of Nauru (Sponsor of NORI) submitted a 2-year notice In-person ISA meetings resume in Jamaica, after a nearly 2-year hiatus ISA meetings to address regulations, financials and standards & guidelines ISA meetings to address regulations, financials and standards & guidelines ISA meetings to address regulations, financials and standards & guidelines ISA meetings to address regulations, financials and standards & guidelines ISA meetings to address regulations, financials and standards & guidelines Deadline for ISA to adopt final exploitation regulations

Estimated timing for completion of NORI-D application for ISA exploitation contract Estimated timing for exploitation contract to be granted by ISA, for NORI-D area

Source: Letter from Nauru Ambassador to ISA Secretary-General, July 2021, available at URL: https://isa.org.jm/files/files/documents/NauruLetter-Notification.pdf; Press Release, "In-person meetings of the 26th session of the ISA Assembly open in Kingston", December 2021, available at URL: https://isa.org.jm/news/person-meetings-26th-session-isa-assembly-open-kingston-jamaica; Press Release, "Part 1 of the 27th Session of the ISA Council opens with a focus on draft regulations for deep-seabed mineral resources." exploitation," March 2022, available at URL: https://isa.org.jm/news/part-i-27th-session-isa-council-opens-focus-draft-regulations-deep-seabed-mineral-resources; Press Release, "ISA Council opens Part II of its 27th session," July 2022, available at URL: https://isa.org.jm/news/isa-council-opens-part-ii-its-27th-session:

#### NORI-D project at a glance.



	NORI (A,B,C,D) <sup>1</sup>	NORI-D <sup>1</sup>
ISA Exploration Contract Grant	2011	
Sponsoring State	Republic of Nauru	
Contract area, km <sup>2</sup>	74,830	25,160
Nodules, wet tonnes - estimated	866	356
Nickel, % - estimated	1.3	1.4
Copper, % - estimated	1.1	1.1
Manganese, % - estimated	29.5	31.2
Cobalt, % - estimated	0.2	0.14
Project status		Mid-PFS
Exploitation contract application <sup>2</sup>		H2 2023
Earliest start of production <sup>2</sup>		H2 2024

#### Resource

- The estimated largest and highest nickel-equivalent grade undeveloped nickel project on the planet
- Contained metals (Ni, Cu, Co, Mn) well matched to the critical mineral requirements of the energy transition
- NORI-D as the 1<sup>st</sup> project (closest to shore, 41% of estimated NORI resource and 22% of total estimated resource)

### Products & project economics

- NiCuCo matte and Mn silicate as intermediates produced from reduced scope onshore metallurgical plant (Project Zero)
- Ni sulfate, Co sulfate, Cu cathode and Mn silicate as main products from full scope onshore metallurgical plant (Project One)
- +60% expected EBITDA margin / 2<sup>nd</sup> lowest nickel C1 cash cost on a by-products' basis at full scope steady state production on NORI-D Project One

#### Project partnerships

- Strong focus on leveraging partners' expertise, reuse of existing assets and access to capital to get into production
- Allseas as offshore production partner for Project Zero and beyond
- Epsilon Carbon as likely onshore production partner for Project Zero

#### Capital spent

Approximately \$250M spent on NORI property since 2011 to get to mid-PFS on NORI-D

### Valuation of NORI-D project

- US\$6.8B NPV for NORI-D at CRU long-term prices (Feb 2021)<sup>1</sup>
- US\$15.9B NPV for NORI-D at current prices (November 11, 2022)1

<sup>&</sup>lt;sup>1</sup> SEC Regulation S-K (Subpart 1300) Compliant NORI Area D Clarion Clipperton Zone Mineral Resource Estimate and associated financial model, AMC, 17 March 2021. NORI-D resource - 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. <sup>2</sup> Subject to availability of funding and ISA granting an Exploitation Contract.



# Key objectives of NORI-D Pilot Collection System Test and Monitoring Campaign.

#### Objective #1:

Demonstrate integrated pilot system capable of collecting and lifting nodules



✓ First successful integrated pilot system test in CCZ since 1970s

#### Objective #2:

Collect ~3,600 wet tonnes of polymetallic nodules



√ 4,500 wet tonnes collected

√ 3,021 wet tonnes lifted

#### Objective #3:

Test pilot system performance to inform future system optimizations and upgrade



√ 86.4 t/h production rate

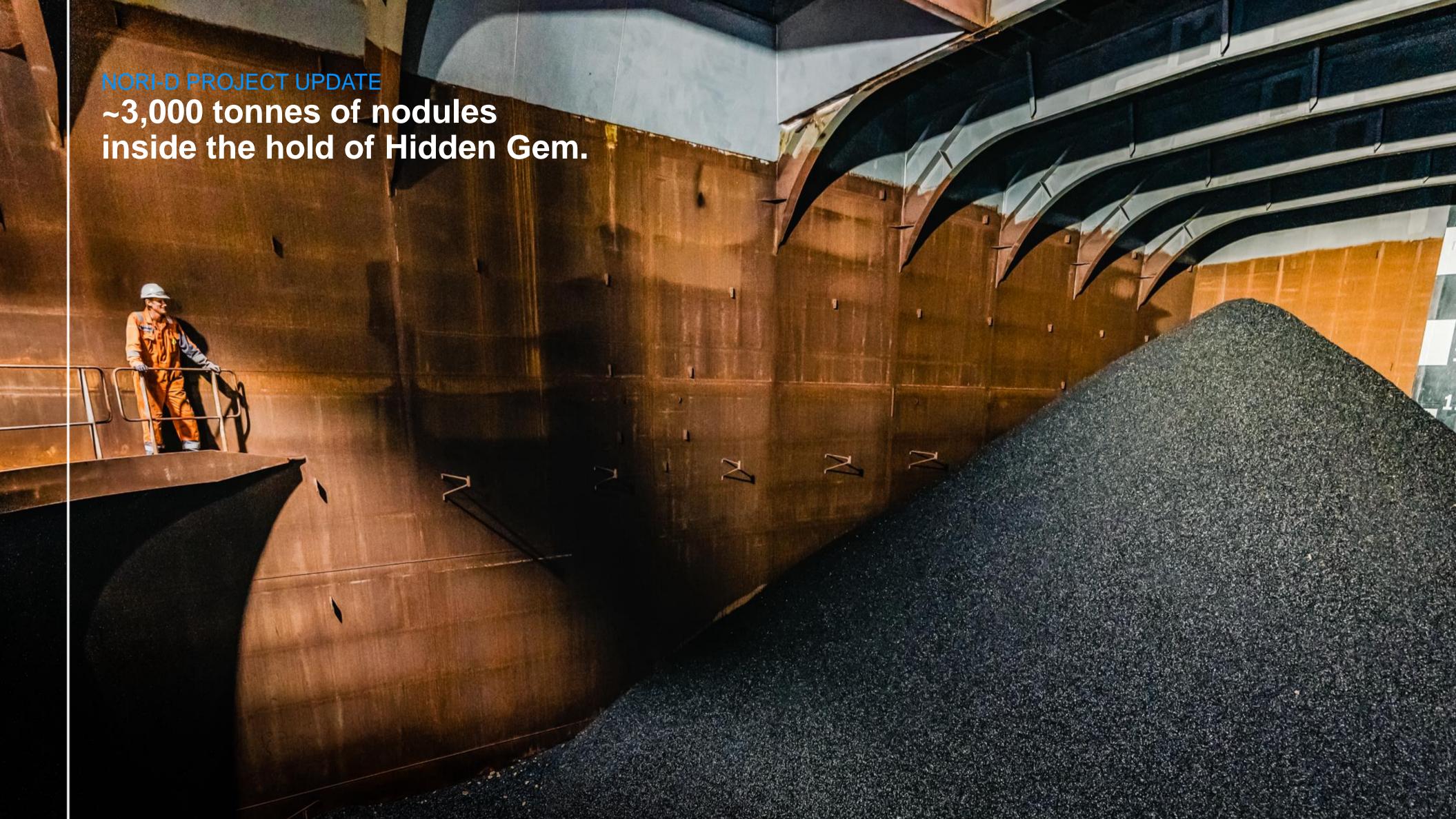
Performance data acquired to be used to upgrade and optimize pilot system into Project Zero system with a targeted average production rate over 200t/h

#### Objective #4:

Monitor and survey pre-, during- and posttest environment



- ✓ Pre- and during surveys complete
- Post-test surveys ongoing

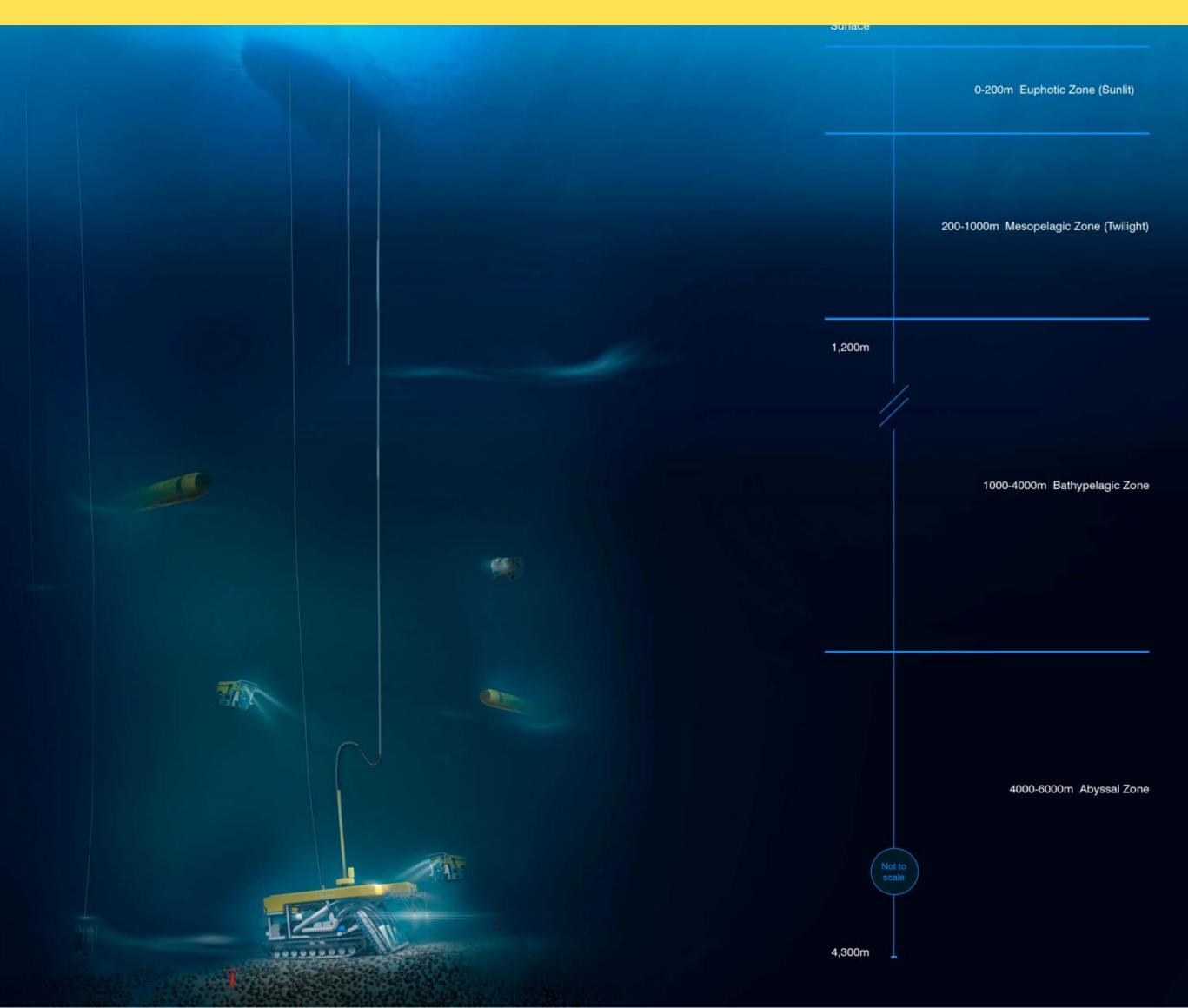




# NORI-D PROJECT UPDATE Giving the regulator and key stakeholders eyes and ears into future operations.

With our digital twin, a mix of sensors and cloud-based Al, we will optimize the environmental performance of operations by applying environmental constraints and limits to the mine planning process.

The iterative nature of an adaptive management approach also means that the predictive and protective capabilities of the AMS will gradually improve over time as more information enters the system.



# Sediment plumes: activists' speculation vs. published research.





#### **SPECULATION**

#### **Deep-Sea Mining Statement**

Signed by 653 people as of Nov 1, 2022 Organized by Deep-Sea Conservation Coalition

- "the production of large, persistent sediment plumes that would affect seafloor and midwater species and ecosystems well beyond the actual mining sites;
- the resuspension and release of sediment, metals and toxins into the water column, both from mining the seafloor and the discharge of mining wastewater from ships, detrimental to marine life including the potential for contamination of commercially important species of food fish such as tunas"

#### **RESEARCH**

#### Research published and field studies conducted in 2021-22

- Peer-reviewed research on seafloor and midwater plumes published by MIT and Scripps<sup>1</sup>
- Field observations of seafloor plumes conducted in May 2021 by BGR and GSR in their respective exploration contract areas in the CCZ<sup>2</sup>
- Plume modelling performed for TMC by DHI, one of the world's leading experts, using actual metocean data from NORI exploration area in CCZ and settling properties of sediment from NORI-D<sup>3</sup>

#### Midwater plume

<10% of entrained sediment from the return of seawater used for nodule transport dilutes to natural background levels within a few hundred meters of the outlet.

#### Seafloor plume

92-98% of plume from pilot nodule collector vehicle rose only 2 meters above the seafloor.

"It's quite a different picture of what these plumes look like, compared to some of the conjecture," says study coauthor Thomas Peacock, MIT.



Ouillon, R., Kakoutas, C., Meiburg, E., & Peacock, T. (2021). Gravity currents from moving sources. *Journal of Fluid Mechanics*, 924, A43. doi:10.1017/jfm.2021.654; Muñoz-Royo, C., Peacock, T., Alford, M.H. et al. Extent of impact of deep-sea nodule mining midwater plumes is influenced by sediment loading, turbulence and thresholds. *Commun Earth Environ* 2, 148 (2021). https://doi.org/10.1038/s43247-021-00213-8; https://doi.org/10.1038/s43247-021-00213-8;

<sup>&</sup>lt;sup>2</sup> First test of a manganese nodule collector in around four kilometers of water: research consortium successfully completes monitoring of environmental impacts in the Pacific, BGR press release, May 12, 2021 <sup>3</sup> NORI Environmental Impact Statement for Collector Test Study, July 2021

# Benchmark Minerals LCA: Nickel from NORI-D shows lowest impact.

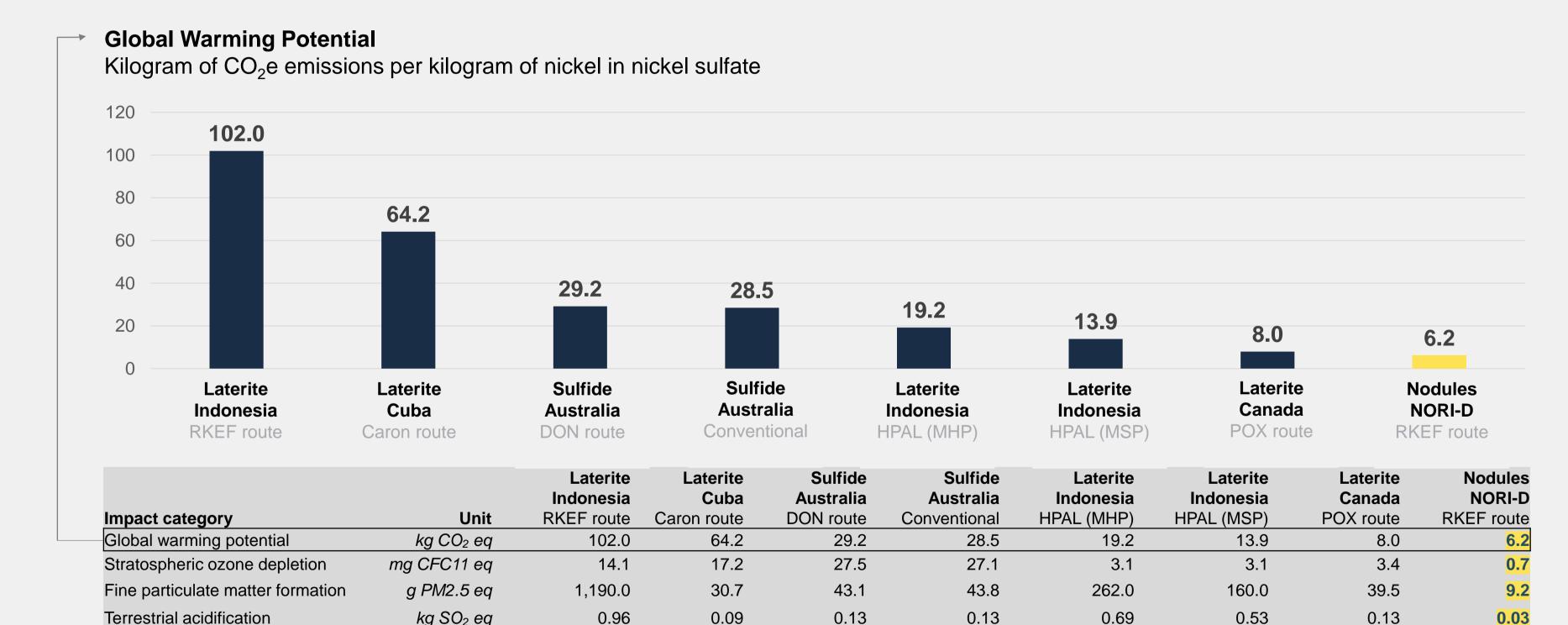
Freshwater eutrophication

Marine eutrophication

Water consumption

Results are undergoing third party verification

Lowest impact value



75.8

2.3

0.15

9.5

0.1

0.17

75.8

2.3

0.13

5.2

-1.3

0.24

9.1

-1.8

0.25

2.9

0.2

0.15

1.0

-2.2

0.05

Source: Independent lifecycle assessment (LCA) completed by Benchmark Mineral Intelligence in Nov 2022. Lifecycle from mine to end-product format (battery-grade nickel sulfate, cobalt sulfate, copper cathode and manganese silicate)
Nodules from NORI-D (RKEF route) also found to be the lowest impact option for copper. Cobalt from the DRC is lowest impact option; cobalt from NORI-D are lowest in all other assessed impact categories.

91.0

5.5

0.31

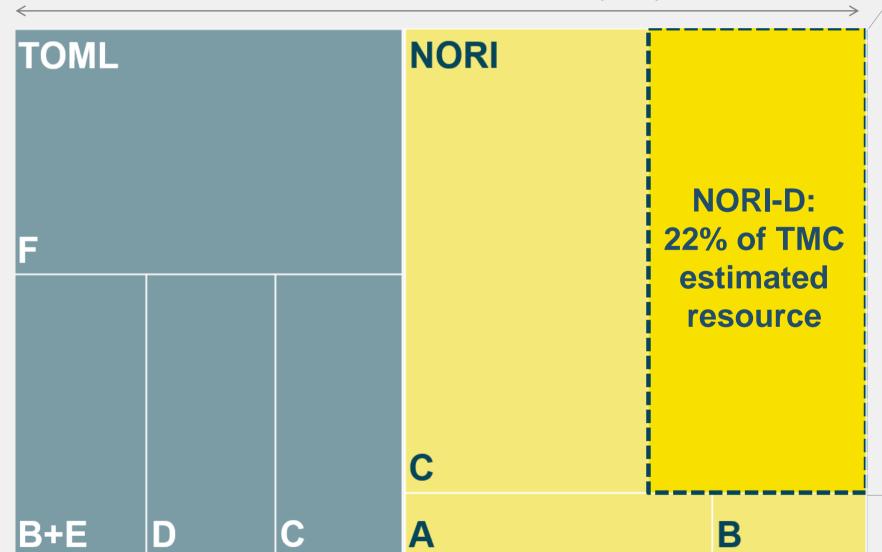
g P eq

g N eq

 $m^3$ 

#### Based on SEC-compliant Initial Assessment, NORI-D project estimated at \$6.8 billion NPV (est. \$15.9 billion using current metal prices).

Estimated resource 1,634Mt (wet)<sup>1</sup>



#### **NORI-D Financial Model<sup>2</sup>**

\$ billions unless otherwise noted

(other assumptions held

constant including other

metal prices at current)

	100 110104		
Prices			
CI	RU forecast	<b>Current price</b>	Increase
Nickel	\$16,106/t	\$26,856/t	67%
Copper	\$6,787/t	\$8,522/t	24%
Cobalt	\$46,416/t	\$51,955/t	12%
Mn silicate	\$4.53/dmtu	\$5.75/dmtu	27%
Project economics—c	umulative ov	er project life	
Total revenue	\$95.1b	\$136.4	37%
Nickel	44.0	73.6	
Copper	12.7	15.9	
Cobalt	10.4	12.4	
Mn silicate	27.2	34.0	
Total OPEX	37.5b	37.5b	0%
Total EBITDA	57.3b	98.6b	72%
EBITDA margin	60%	72%	12 pts
NPV	\$6.8	\$15.9	+134%
	billion	billion	
	\$45,000/t	\$26.7 billion	
NORI-D NPV at	<b>COF 000</b> /4	\$20.7 billion	General rule of thumb
various nickel prices (other assumptions held	\$35,000/t \$25,000/t	\$20.7 billion	every \$10k/t change in nickel price equates

\$25,000/t

\$15,000/t

\$14.7 billion

\$8.7 billion

to \$6 billion change in

**NORI-D NPV** 

<sup>&</sup>lt;sup>1</sup> Canadian NI 43-101 Resource Statement for full field financial model (internal DeepGreen development scenario).

<sup>&</sup>lt;sup>2</sup> 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. 'Current price' scenario is internal-only, as of November 11, 2022. NPV at January 1, 2021, assuming 9% discount rate.

# TMC trading at ~20x lower multiple than average for copper developers, using NPV for NORI-D alone (22% of total estimated resource).



Source: https://wp-solgold-2021.s3.eu-west-2.amazonaws.com/media/2022/10/SolGold-Cornerstone-Transaction-Investor-Presentation\_2022-10-12.pdf . Peer group includes Adventus, Filo, Highland, Los Andes, Marimaca, Solaris, SolGold, Trilogy and Western. Peer market data as of October 6, 2022.

<sup>&</sup>lt;sup>1</sup> 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. 'Current Price' scenario is internal-only, as of November 11, 2022. NPV at January 1, 2021, assuming 9% discount rate.

# Key de-risking milestones to unlock NORI-D project value.

**Expected timing** 

**De-risking milestones** 

Risks potentially

reduced

H2 2022

- **Pilot Collection System Test**
- P.Zero commercial terms
- Financing
- **Technical risk** reduced with technology pilots completed onshore and offshore.
- Financing risk reduced allowing to extend runway and project development to continue.
- Commercial risk reduced with CAPEX and commercial terms for Project Zero production locked through binding agreements.

H<sub>2</sub> 2023

ISA adopts final exploitation regulations

Regulatory risk reduced as uncertainty around the final regulatory framework for the exploitation phase is eliminated as the final regulatory framework, including environmental standards is adopted by the ISA.

H<sub>2</sub> 2023

NORI submits NORI-D Exploitation
Application

- Environmental risks
  (perceived and real)
  reduced through
  completion and
  submission of the EIS
  and EMMP for the
  NORI-D Project
- Commercial risk further reduced with completion of NORI-D Project PFS.

H2 2024

ISA grants NORI Exploitation Contract for NORI-D

Permitting risk
 eliminated with ISA
 granting exploitation
 contract for NORI-D.

H2 2024 >>

NORI-D Project Zero starts production

Commercial and production risk reduced with nodule collection and processing demonstrated at commercial scale.

**\$15.9B**NORI-D NPV\*

Assuming 100% of NORI-D NPV (22% of TMC's total estimated resource) at current metal prices\*

Illustrative progression of NORI-D project valuation

[Multiple] x
NORI-D NPV\*

EIS – Environmental Impact Statement EMMP – Environmental Management and Monitoring Plan

\*US\$6.8B NPV stated in SEC Regulation S-K (Subpart 1300) Compliant NORI Area D Clarion Clipperton Zone Mineral Resource Estimate and associated financial model, AMC, March 2021. Based on assumed long-term prices of Ni - \$16,106/t, Cu - \$6,787/t, Co - \$46,416/t, Mn - \$4.53/dmtu. \$15.2B NPV is internal-only scenario based on prices as of Nov. 10, 2022 (Ni - \$26,856/t, Cu - \$8,522/t, Co - \$51,955/t, Mn - \$5.75/dmtu). NPV at January 1, 2021 at 9% disc. rate.

#### **NEAR-TERM MILESTONES**

# Major milestones achieved in the first nine months of 2022.

Completed In progress

#### Offshore nodule collection system

- Deep-water tests of pilot collector in the North Atlantic
- Pilot Collection System Test in the Pacific (NORI-D, CCZ)
- Digital twin implementation for NORI-D pilot collection system test

#### Offshore environmental & social impact assessment (ESIA)

- ISA review of NORI-D Pilot Collection System Test EIS and EMMP
- Contracts for NORI-D Pilot Collection System Test Monitoring Campaign
- Execution of NORI-D Pilot Collection System Test Monitoring Campaign
- Partnerships in place for Environmental Monitoring & Management Plan (EMMP) for NORI-D project

#### **Onshore processing**

- Complete value-in-use studies for Mn silicate product
- Complete analysis of pyrometallurgical pilot results
- Complete hydrometallurgical bench-scale work

#### **Lifecycle impacts**

- Complete inaugural Impact Report
- Complete comparative life-cycle analysis (LCA) study for NORI-D Project One

#### **NORI-D Project Zero offtakes & strategic partnerships**

- Allseas: Agree non-binding commercial terms for commercial nodule collection; agree binding terms post NORI-D pilot collection system test
- Epsilon Carbon: Agree on PFS for Project Zero plant and binding commercial terms after PFS
- NiCuCo alloy/matte: share samples and secure offtakes
- Mn silicate: share samples and secure offtakes

# Income statement: three months ended September 30, 2022.

(\$mm)	Q3 2021	Q3 2022	Change
Exploration expenses	23.8	22.7	(1.1)
Environmental Studies	18.6	15.4	(3.2)
Exploration Labour	0.8	1.0	0.2
Mining and Process Development	0.7	0.2	(0.5)
Pilot Mining Test System (PMTS)	-	3.7	3.7
Project development share-based compensation <sup>(1)</sup>	3.0	1.6	(1.4)
Sponsorship, Training and Stakeholder Engagement	0.5	0.5	-
Other <sup>(2)</sup>	0.2	0.3	0.1
General & administrative expenses	13.3	5.9	(7.4)
Corporate staff salaries	0.9	1.0	0.1
Corporate share-based compensation <sup>(1)</sup>	6.5	2.0	(4.5)
Professional fees	2.6	1.0	(1.6)
Other <sup>(3)</sup>	3.3	1.9	(1.4)
Net operating loss	37.1	28.6	(8.5)

<sup>&</sup>lt;sup>1</sup> The options granted in 2021 were awarded in lieu of cash bonuses to retain DeepGreen employees in furtherance of the September 2021 Business Combination. The DeepGreen Board had the sole discretion to award these options and exercised its discretion to do so, as it had not consistently awarded cash bonuses to its employees, despite multiple years of service. Some of the options were granted subject to the achievement of significant long-term performance goals of DeepGreen and remain unvested.

2021 Share-based compensation	Units granted (M)	Total expense (\$M)
Options by grant date		
17-Feb-21	0.6	0.3
04-Mar-21	15.5	9.3
Total share-based		
compensation	16.1	9.5
Expenses re options		
granted before 2021		0.0
Total share-based		
compensation expenses		9.5

<sup>&</sup>lt;sup>2</sup> Exploration expenses – other includes corporate costs associated with exploration activities.

<sup>&</sup>lt;sup>3</sup> General & administrative expenses – other includes investor relations expenses, corporate office expenses and director fees.

#### Cash flow: three months ended September 30, 2022.

(\$mm)	Q3 2021	Q3 2022	Change
Cash used in operating activities	10.4	8.7	(1.7)
Capital expenditures	-	0.5	0.5
Settlement of deferred acquisition costs	-	-	-
Acquisition of equipment	-	0.5	0.5
Less non-recurring items	(1.1)	-	1.1
Settlement of deferred acquisition costs	-	-	-
Transaction costs related to the Business Combination	(1.1)	-	1.1
Free cash outflow excluding non-recurring items	9.3	9.2	(0.1)

# Balance sheet: as at September 30, 2022.

(\$mm)	Dec 31, 2021	Sep 30, 2022	Change
Total Assets	133.2	117.2	(16.0)
Cash	84.9	66.9	(18.0)
Accounts receivable and prepaid expenses	3.7	5.0	1.3
Exploration and evaluation assets	43.2	43.2	-
Property and equipment	1.4	2.1	0.7
Total Liabilities	40.4	38.1	(2.3)
Accounts payable and accrued liabilities	26.6	25.2	(1.4)
Warrant liability	3.1	2.2	(0.9)
Deferred tax liability	10.7	10.7	-
Total Equity	92.8	79.1	(13.7)
Common shares	296.1	328.9	32.8
Class A – J Special Shares	-	-	-
Additional paid-in-capital	102.1	116.9	14.8
Accumulated other comprehensive income	(1.2)	(1.2)	-
Deficit	(304.2)	(365.5)	(61.3)

#### Income statement: nine months ended September 30, 2022.

(\$mm)	YTD 2021	YTD 2022	Change
Exploration expenses	80.2	40.3	(39.9)
Environmental Studies	44.0	20.5	(23.5)
Exploration Labour	2.4	3.4	1.0
Mining and Process Development	1.7	0.8	(0.9)
Pilot Mining Test System (PMTS)	-	6.5	6.5
Project development share-based compensation <sup>(1)</sup>	30.6	7.4	(23.2)
Sponsorship, Training and Stakeholder Engagement	0.8	1.1	0.3
Other <sup>(2)</sup>	0.7	0.6	(0.1)
General & administrative expenses	41.1	22.5	(18.6)
Corporate staff salaries	1.9	3.1	1.2
Corporate share-based compensation <sup>(1)</sup>	24.7	7.6	(17.1)
Professional fees	8.2	5.2	(3.0)
Other <sup>(3)</sup>	6.3	6.6	0.3
Net operating loss	121.3	62.8	(58.5)

<sup>&</sup>lt;sup>1</sup> The options granted in 2021 were awarded in lieu of cash bonuses to retain DeepGreen employees in furtherance of the September 2021 Business Combination. The DeepGreen Board had the sole discretion to award these options and exercised its discretion to do so, as it had not consistently awarded cash bonuses to its employees, despite multiple years of service. Some of the options were granted subject to the achievement of significant long-term performance goals of DeepGreen and remain unvested.

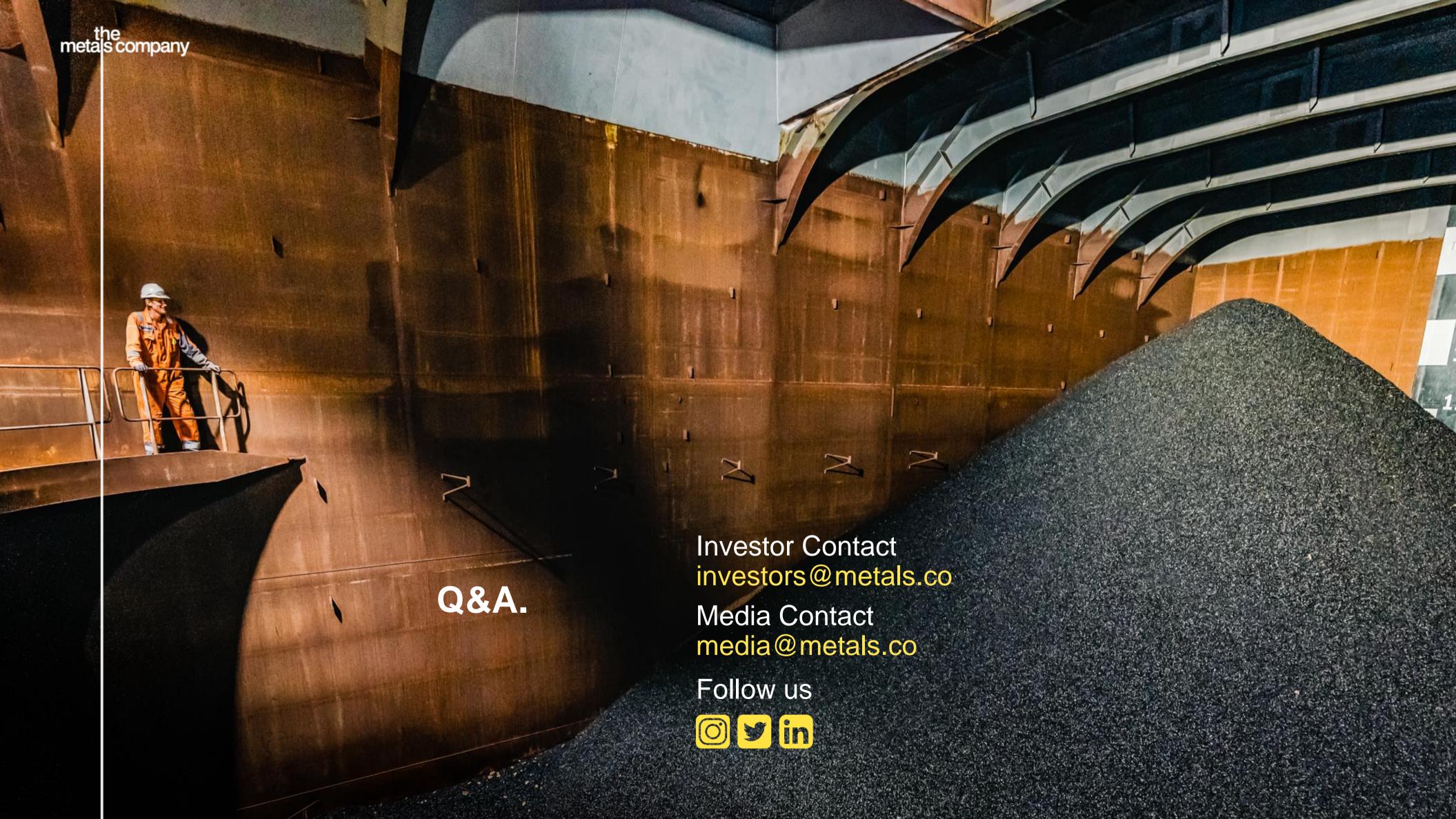
2021 Share-based compensation	Units granted (M)	Total expense (\$M)
Options by grant date		
17-Feb-21	0.6	3.8
04-Mar-21	15.5	50.7
Subtotal	16.1	54.4
Expenses re options granted before 2021 <b>Total share-based</b>		0.8
compensation expenses		55.3

<sup>&</sup>lt;sup>2</sup> Exploration expenses – other includes corporate costs associated with exploration activities.

<sup>&</sup>lt;sup>3</sup> General & administrative expenses – other includes investor relations expenses, corporate office expenses and director fees.

#### Cash flow: nine months ended September 30, 2022.

(\$mm)	YTD 2021	YTD 2022	Change
Cash used in operating activities	28.3	46.8	18.5
Capital expenditures	3.8	1.0	(2.8)
Settlement of deferred acquisition costs	3.4	-	(3.4)
Acquisition of equipment	0.4	1.0	0.6
	45.5		
Less non-recurring items	(8.8)	-	8.8
Settlement of deferred acquisition costs	(3.4)	-	3.4
Transaction costs related to the Business Combination	(5.4)	-	5.4
Free cash outflow excluding non-recurring items	23.3	47.8	24.5





### Appendix: non-GAAP reconciliation.

#### Non-GAAP Financial Measures – Free Cash Outflow Excluding Non-Recurring Items

Free cash outflow excluding non-recurring items is a non-GAAP financial measure. Free cash outflow excluding non-recurring items is used in addition to and in conjunction with results presented in accordance with United States Generally Accepted Accounting Principles ("U.S. GAAP"), and free cash outflow excluding non-recurring items should not be relied upon to the exclusion of U.S. GAAP financial measures. TMC's management strongly encourages investors to review TMC's financial statements and publicly-filed reports in their entirety and to not rely on any single financial measure. Free cash outflow excluding non-recurring items, which is reconciled to "net cash used in operating activities", is cash flow from operations reduced by capital expenditures excluding certain other one-time expenditures. TMC believes that free cash outflow excluding non-recurring items is a useful additional measure to "net cash used in operations" since the excluded expenditures are not a recurring expenditure of operations moving forward and free cash outflow excluding non-recurring items is useful as a measure of TMC's ability to meet its planned operating obligations moving forward. Free cash outflow excluding non-recurring items, however, has limitations due to the fact that it does not represent the residual cash flow available for discretionary expenditures and different companies define free cash outflow excluding non-recurring items and other measures of free cash flow in different manners and, therefore, TMC's free cash outflow excluding non-recurring items can not be compared to another company's use of free cash outflow excluding non-recurring items or any other measure of free cash flow. TMC therefore believes it is important to view free cash outflows excluding non-recurring items as a complement to its entire condensed consolidated statements of cash flows.

A reconciliation of "net cash used in operating activities" to free cash outflow excluding non-recurring items for the three months ended September 30, 2022 and 2021 is as follows:

(\$mm)	Three months ended September 30	
	2022	2021
Cash used in operating activities	8.7	10.4
Capital expenditures	0.5	-
Settlement of deferred acquisition costs		-
Acquisition of equipment	0.5	-
Free cash outflow	9.2	10.4
Less: non-recurring items	-	(1.1)
Settlement of deferred acquisition costs	-	-
Transaction costs related to the Business Combination	-	(1.1)
Free cash outflow excluding non-recurring items	9.2	9.3

### Appendix: non-GAAP reconciliation.

#### Non-GAAP Financial Measures – Free Cash Outflow Excluding Non-Recurring Items

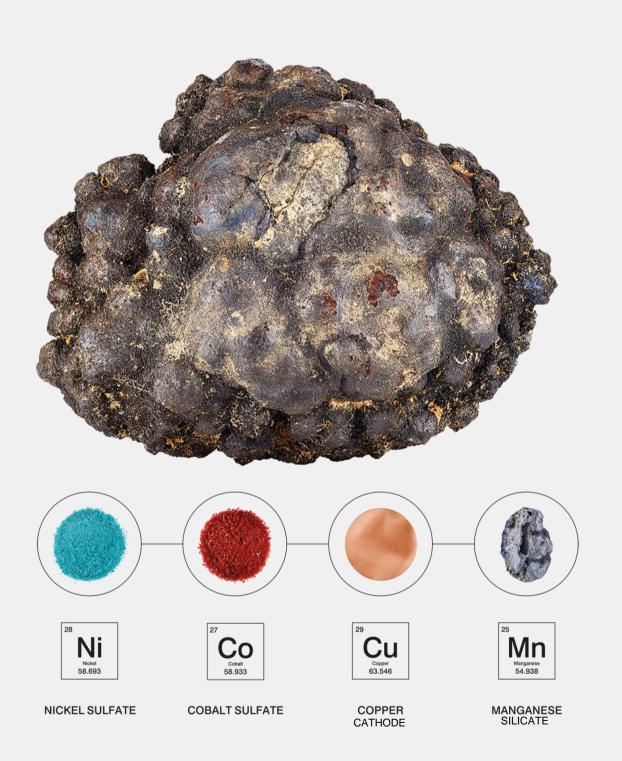
Free cash outflow excluding non-recurring items is a non-GAAP financial measure. Free cash outflow excluding non-recurring items is used in addition to and in conjunction with results presented in accordance with United States Generally Accepted Accounting Principles ("U.S. GAAP"), and free cash outflow excluding non-recurring items should not be relied upon to the exclusion of U.S. GAAP financial measures. TMC's management strongly encourages investors to review TMC's financial statements and publicly-filed reports in their entirety and to not rely on any single financial measure. Free cash outflow excluding non-recurring items, which is reconciled to "net cash used in operating activities", is cash flow from operations reduced by capital expenditures excluding certain other one-time expenditures. TMC believes that free cash outflow excluding non-recurring items is a useful additional measure to "net cash used in operations" since the excluded expenditures are not a recurring expenditure of operations moving forward and free cash outflow excluding non-recurring items is useful as a measure of TMC's ability to meet its planned operating obligations moving forward. Free cash outflow excluding non-recurring items, however, has limitations due to the fact that it does not represent the residual cash flow available for discretionary expenditures and different companies define free cash outflow excluding non-recurring items and other measures of free cash flow in different manners and, therefore, TMC's free cash outflow excluding non-recurring items can not be compared to another company's use of free cash outflow excluding non-recurring items or any other measure of free cash flow. TMC therefore believes it is important to view free cash outflows excluding non-recurring items as a complement to its entire condensed consolidated statements of cash flows.

A reconciliation of "net cash used in operating activities" to free cash outflow excluding non-recurring items for the nine months ended September 30, 2022 and 2021 is as follows:

(\$mm)	Nine months ended September 30	
	2022	2021
Cash used in operating activities	46.8	28.3
Capital expenditures	1.0	3.8
Settlement of deferred acquisition costs	-	3.4
Acquisition of equipment	1.0	0.4
Free cash outflow	47.8	32.1
Less: non-recurring items	-	(8.8)
Settlement of deferred acquisition costs	-	(3.4)
Transaction costs related to the Business Combination	-	(5.4)
Free cash outflow excluding non-recurring items	47.8	23.3



#### Abundant, secure, low production cost and low ESG cost potential supply of metals.



#### **Abundant**

TMC is developing the world's largest estimated source of battery metals with enough nickel, copper, manganese and cobalt in situ to potentially electrify 280 million EVs1

#### Secure

Located on the abyssal seafloor in the international waters regulated by the International Seabed Authority, an inter-governmental organization established pursuant to the United Nations Convention on the Law of the Seas

#### Low production cost

Expecting to become the 2<sup>nd</sup> lowest cost nickel producer on the planet at steady state production on Project One<sup>2</sup>, reflecting high grades with four battery metals in high concentrations in a single resource

#### Lower environmental and social cost

Expected 70-99% reduction of lifecycle environmental impacts, including near-zero solid processing waste, 90% less CO<sub>2</sub> equivalent emissions compared to land-based metal extraction<sup>3</sup>

#### \$15.9 billion NPV for 1<sup>st</sup> project

\$15.9 billion net present value at current metal prices for NORI-D, TMC's first project representing 22% of the company's estimated resource<sup>4</sup>

#### Tier 1 partners / investors<sup>5</sup>









<sup>&</sup>lt;sup>1</sup> 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. <sup>2</sup> Canadian NI 43-101 Compliant Preliminary Economic Assessment (PEA) for NORI-D Area, AMC, February 2021; Metals Cost Curve, Wood Mackenzie, August 2020.

<sup>&</sup>lt;sup>3</sup> "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.

<sup>&</sup>lt;sup>4</sup> Canadian NI 43-101 and SEC Regulation S-K (Subpart 1300) Compliant NORI Area D CCZ Mineral Resource Estimate and associated financial model, AMC, March 2021. Current prices as of November 11, 2022. NPV at January 1, 2021.

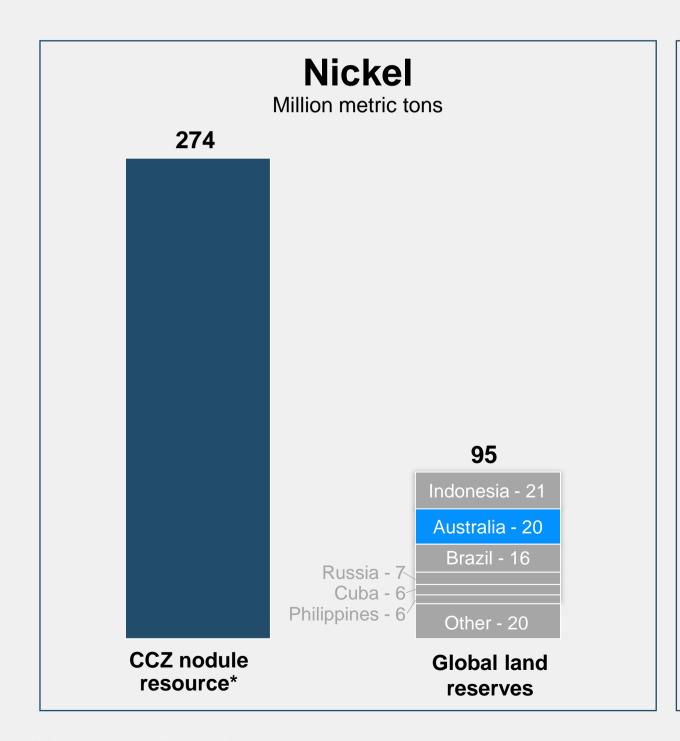
<sup>&</sup>lt;sup>5</sup> Allseas, Maersk and Glencore are TMC shareholders. Our agreement with Maersk for vessel operations ended pursuant to its terms in January 2022 following the completion of all NORI Area D baseline campaigns.

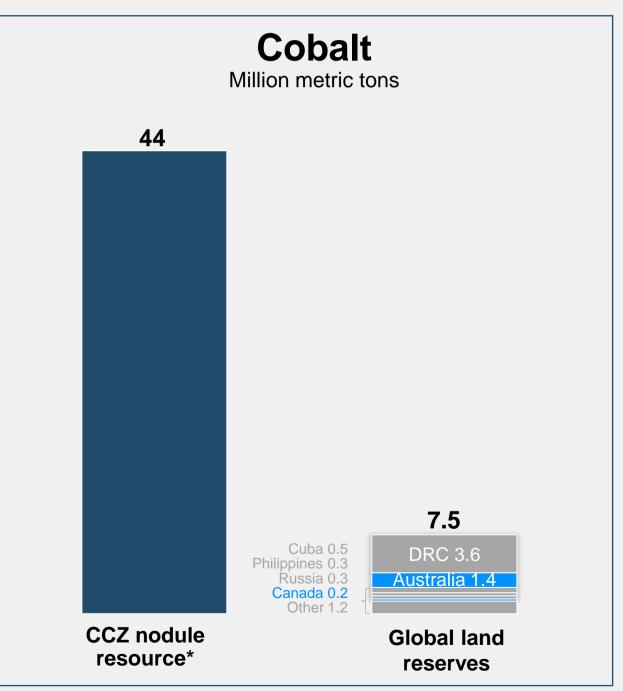
# CCZ nodule resource much bigger than reserves of countries with U.S. FTAs.

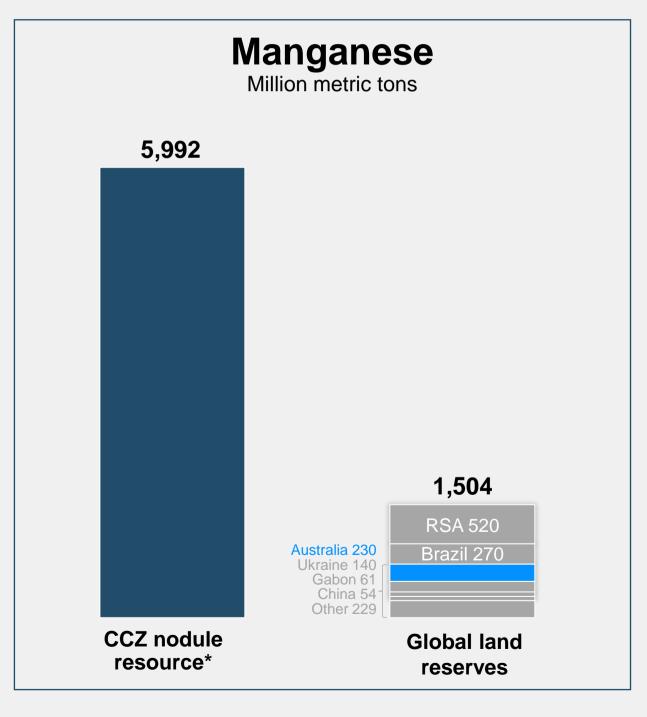
Total estimated CCZ nodule resource

U.S. FTA partner

Not a U.S. FTA partner



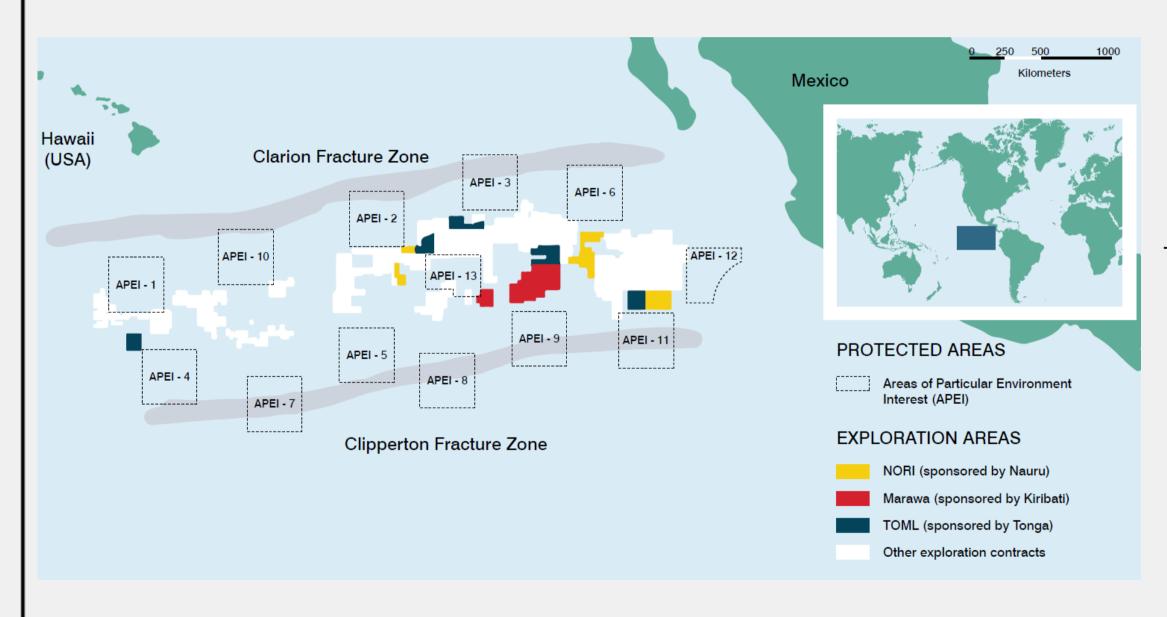




Source: USGS 2021 commodity summaries for terrestrial resources; James R. Hein, Kira Mizell, Andrea Koschinsky, Tracey A. Conrad, Deep-ocean mineral deposits as a source of critical metals for high- and green-technology applications: Comparison with land-based resources, Ore Geology Reviews, Volume 51, 2013, Pages 1-14, ISSN 0169-1368, doi.org/10.1016/j.oregeorev.2012.12.001 for CCZ nodules and PCZ crusts

<sup>\*</sup>CCZ nodules = Clarion-Clipperton Zone polymetallic nodules

# TMC: technical resource statements issued on NORI + TOML, with an *in situ* estimated resource of Ni, Cu, Co and Mn sufficient to electrify the entire U.S. passenger car fleet<sup>1</sup>.



TMC exploration contract area	NORI <sup>2</sup>	TOML <sup>3</sup>	Marawa
Sponsoring State	Republic of Nauru	Kingdom of Tonga	Republic of Kiribati
Exploration area	74,830 km <sup>2</sup>	74,713 km <sup>2</sup>	74,990 km <sup>2</sup>
Technical resource statement	Yes	Yes	Work in progress
Estimated nodule tonnage	866 <sup>4</sup> million tonnes (wet)	768 million tonnes (wet)	
Manganese	29.5%	29.2%	
Nickel	1.3%	1.3%	
Copper	1.1%	1.1%	
Cobalt	0.2%	0.2%	

<sup>&</sup>lt;sup>1</sup> 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.

<sup>2</sup> SEC Regulation S-K (Subpart 1300) Compliant NORI Clarion Clipperton Zone Mineral Resource Estimate AMC, 17 March 2021. 521 Mt Inferred, 341 Mt, 4 Mt Measured.

<sup>&</sup>lt;sup>3</sup> SEC Regulation S-K (Subpart 1300) Compliant TOML Clarion Clipperton Zone Project Mineral Resource Estimate, AMC, 26 March 2021. 696 Mt inferred, 70 Mt Indicated, 2.6 Mt Measured.

<sup>&</sup>lt;sup>4</sup> SEC Regulation S-K (Subpart 1300) Compliant NORI Area D Clarion Clipperton Zone Mineral Resource Estimate and associated financial model, AMC, 17 March 2021. 11 Mt Inferred @ 1.4% Ni, 1.1% Cu, 0.1% Co and 31.0 % Mn and 15.6 Kg/m<sup>2</sup> abundance, 341 Mt Inferred @ 1.4% Ni, 1.1% Cu, 0.1% Co and 31.2% Mn and 31.2% Mn and 31.2% Mn and 31.2% Mn and 32.2% Mn and 18.6 Kg/m<sup>2</sup>.

#### **Resource definition:** 2D resource allows effective definition through sampling and imagery.

BOX CORE SAMPLING<sup>1</sup>

250 box cores collected<sup>2</sup>

**82,000** kg (wet) nodules collected<sup>2</sup>

13,950

biological samples collected<sup>2</sup>

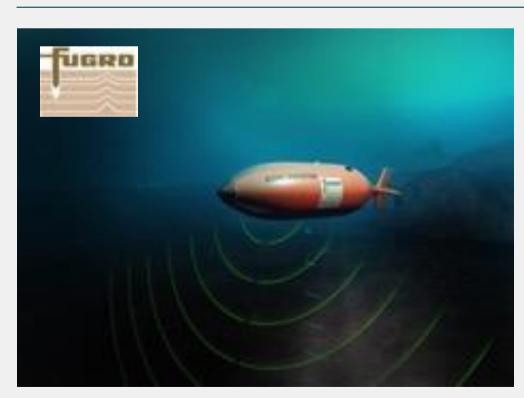


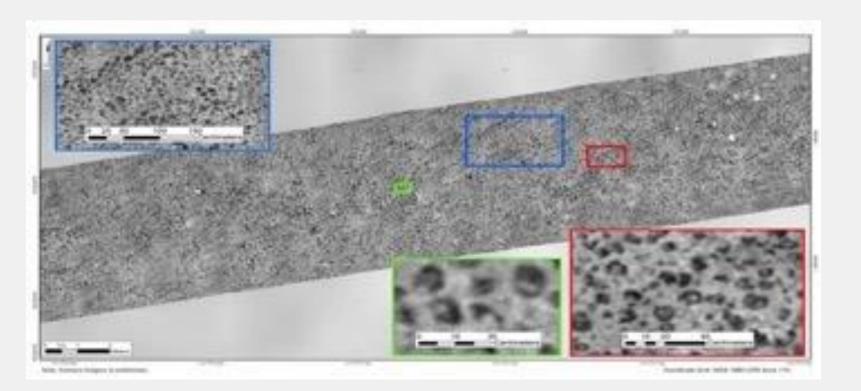




AUV CAMERA IMAGERY<sup>1</sup>

178,591 km<sup>2</sup> of high-res bathymetric survey<sup>2</sup> 5,439 km<sup>2</sup> detailed seafloor imagery<sup>2</sup>





<sup>&</sup>lt;sup>1</sup> Images from DeepGreen's resource survey offshore campaigns in NORI contract area.

<sup>&</sup>lt;sup>2</sup> Boxcores, nodules collected, high-res bathymetry, detailed bathymetr 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.

## Nodule collection technology demonstrated in the 1970s.

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

# De-risking offshore: Pilot Collection System Test complete; environmental impact monitoring continues.

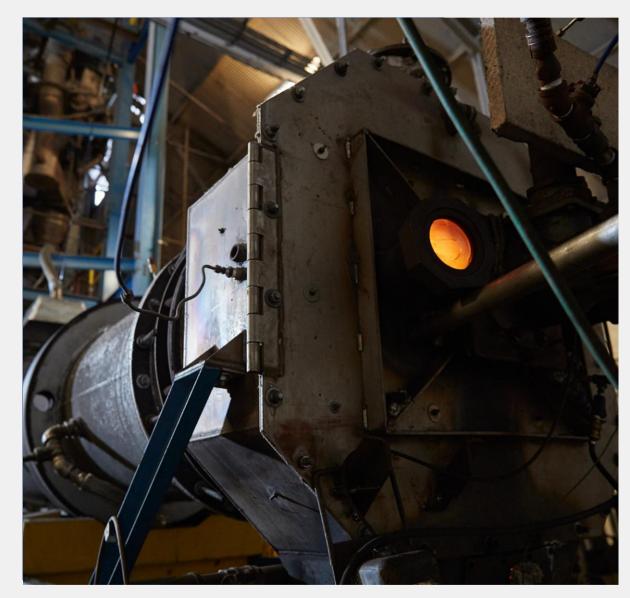




#### PILOT COLLECTOR SYSTEM TEST PROGRAM 2022

January	Riser acceptance test		
February	Thruster re-lift, dockside vessel commissioning, review of nodule offloading & handling test program		
Feb 7	LARS load test		
Feb 28–Mar 3	Thruster installation		
March 2-9	Collector wet function tests in outer harbor		
March 12–17	Hidden Gem dynamic positioning trials		
March 18–28	Collector drive test in the North Sea		
April 6–11	Deep-water test in the Atlantic		
April 21–24	Riser deployment test		
April 22-May 3	Jumper deployment and connection test		
May 3-June 29	Transit to Mexico		
June 29–	Mobilization		
ENVIRONMENTAL IMPACT MONITORING CAMPAIGN			
2021-2022 July 8–15 July 15 Sept 7 Sept-Dec	EIS, EMMP & revisions submitted to ISA Mobilization Pre-collector test survey ISA recommendation to proceed Pre, during, post environmental surveys		
PILOT TRIALS IN NORI-D			
Sept-Dec	Integrated collector test ~4.5k wet tonnes collected, over 3k wet tonnes brought to surface		

# Onshore, we have demonstrated we can turn nodules into manganese silicate and NiCuCo alloy & matte.



**Calcining** nodules at FLSmidth's facilities in Whitehall, Pennsylvania.



**Smelting** nodules in an Electric Arc Furnace at XPS facility in Canada. Electrode temperature 1450 degrees C. Smelting results in two products:

- Manganese silicate product
- NiCuCo alloy (intermediate)

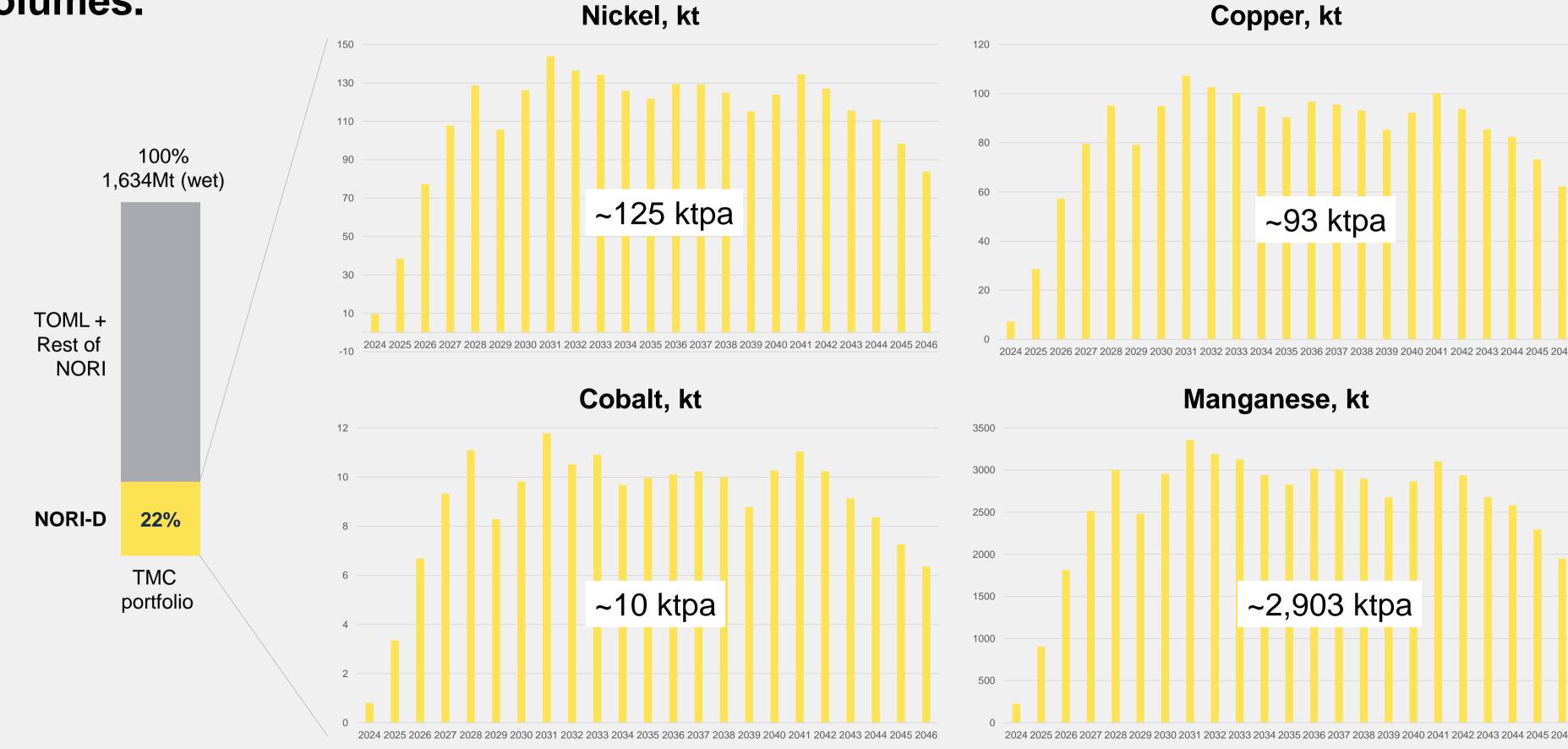


**Converting** NiCuCo alloy into NiCuCo matte (intermediate) at the same XPS facility.

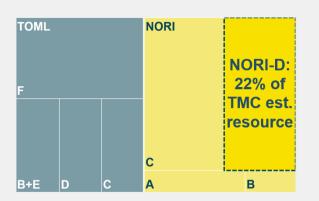


Matte pour post converting. Endproduct is NiCuCo matte.

NORI-D project: expected production volumes.

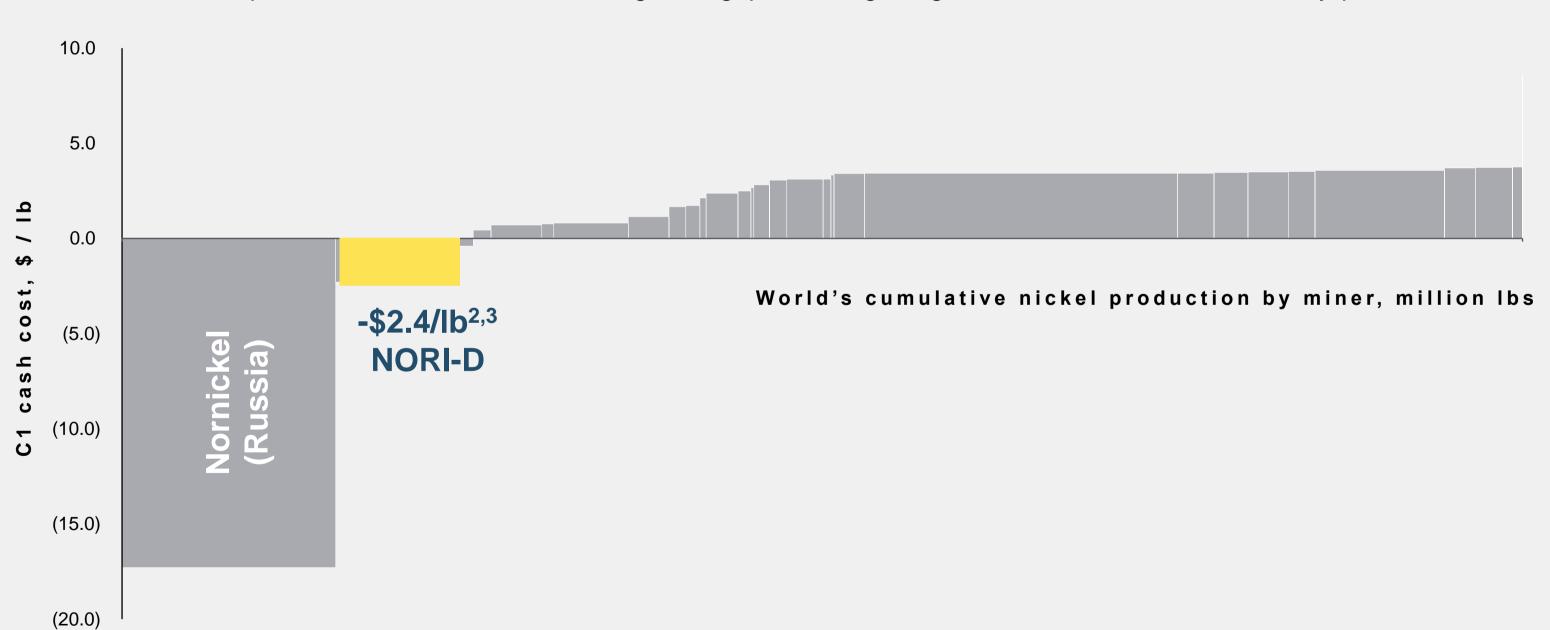


#### We expect to become the second lowest-cost nickel producer in the world.



#### Nickel C1 cost curve on a by-products' basis<sup>1</sup>

C1 Cash Cost represents all direct costs, including mining, processing, freight, SG&A minus revenue from by-products



<sup>&</sup>lt;sup>1</sup> Nickel C1 Cost Curve, Wood Mackenzie, August 2020.

<sup>&</sup>lt;sup>2</sup> Average for the steady state years 2030-45.

<sup>&</sup>lt;sup>3</sup> Canadian NI 43-101 Compliant Preliminary Economic Assessment (PEA) for NORI-D Area, AMC, February 2021.

# Near term focus on Project Zero, with plan to scale quickly.

Products	Production <sup>1</sup>	
NiCuCo alloy	25Kt	
Mn in silicate	303Kt	

# Products Production<sup>3</sup> Nickel 125 Kt Manganese 2,903 Kt

93 Kt

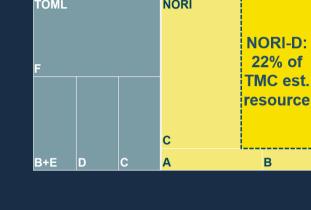
10 Kt

254 Kt

Copper

Cobalt

Fertilizer



#### **PROJECT ZERO**

1.3Mt (wet) 1.0Mt (dry)

#### ~\$55M

Project Zero construction and engineering costs borne by TMC prior to production<sup>2</sup>

#### **PROJECT ONE**

12.5Mt (wet) 9.5Mt (dry)

# Production vessels Hidden Gem acquired Collector robots Completed tests in 2022 for pilot collector (#1) Onshore processing term sheet Partnering with Epsilon Carbon to address onshore processing



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.

<sup>&</sup>lt;sup>1</sup> Production based on 1.3Mpta (wet) with a single subsea collector.

<sup>&</sup>lt;sup>2</sup> Assuming definitive agreement reached with Allseas based on the non-binding term sheet signed March 17, 2022.

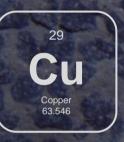
<sup>&</sup>lt;sup>3</sup> Total NORI-D stable state production including both Project Zero and Project One, 2030-2045 average.

# Marine minerals: why we only focus on nodules.

#### Polymetallic nodules









3,800-5,500m depth

#### The Abyssal Plains

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 / m<sup>2</sup>

#### **Cobalt crusts**









800-2,500m depth

#### Seamounts

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

#### Seafloor massive sulfides (SMS)









1,000-4,000m depth

#### Hydrothermal vents

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 hardrock 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

# Remoteness & depth of the site has several advantages.

#### **Biomass on Earth**

Contained carbon kg/m<sup>2</sup>

Deforestation
Child labour
Social displacement
Destruction of carbon sinks

3.6

8 1 5 1 6

Abyssal seabed

0.01

Land biome average

Rainforests (e.g., Indonesia)

15-30

**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.