
# Q4 2023

Oslo February 22, 2024

Ståle Rodahl, Executive Chairman
Ståle Monstad, CEO

# Financial Highlights

| Key figures | | | | |
|---|---|---|---|---|
| All figures in NOK '000 (except equity ratio) | Q4 2023 (Unaudited) | Q4 2022 (Unaudited) | 2023 (Unaudited) | 2022 (Audited) |
| Revenues | 6 | 206 | 6 | 206 |
| Operating expenses | -3,996 | -4,081 | -10,943 | -11,330 |
| EBITDA | -3,990 | -3,875 | -10,937 | -11,124 |
| EBIT | -3,990 | -3,875 | -10,937 | -11,124 |
| Profit/(loss) | -3,990 | -3,866 | -10,966 | -11,110 |
| Cash flow operating activities | -2,674 | -2,359 | -9,528 | -8,883 |
| Net cash flow | -2,021 | -2,359 | -9,528 | 2,185 |
| Total assets | 12,671 | 21,998 | 12,671 | 21,998 |
| Cash and cash Equivalents | 11,723 | 21,252 | 11,723 | 21,252 |
| Equity ratio | 90% | 94% | 90% | 94% |

- EBITDA included a NOK 1.5 million non-cash charge on company's share incentive program, hence underlying EBITDA was NOK -2.5 million, broadly in line with previous guiding and run rate
- Underlying EBITDA is representative on an annual basis with quarterly fluctuations

# Q4 Highlights

- Norwegian Parliament decide to open Norwegian sector for mineral activities.
- Two major discoveries made in Norwegian sector. Confirms two different play models.
- Green Minerals signed an extension to the MoU on a large nodule license in CCZ.
- Final results from processing studies at GTK (Finland) confirm blendability between SMS and onshore copper ore.

# Building the value chain of marine minerals

Crust

SMS

## Exploration

- Project ULTRA (NOC)
- NTNU Ind.Economy Master
- AI use for exploration (MiNR)
- DeepMineX® (in-house)
- UiB Centre for Deep-Sea Research

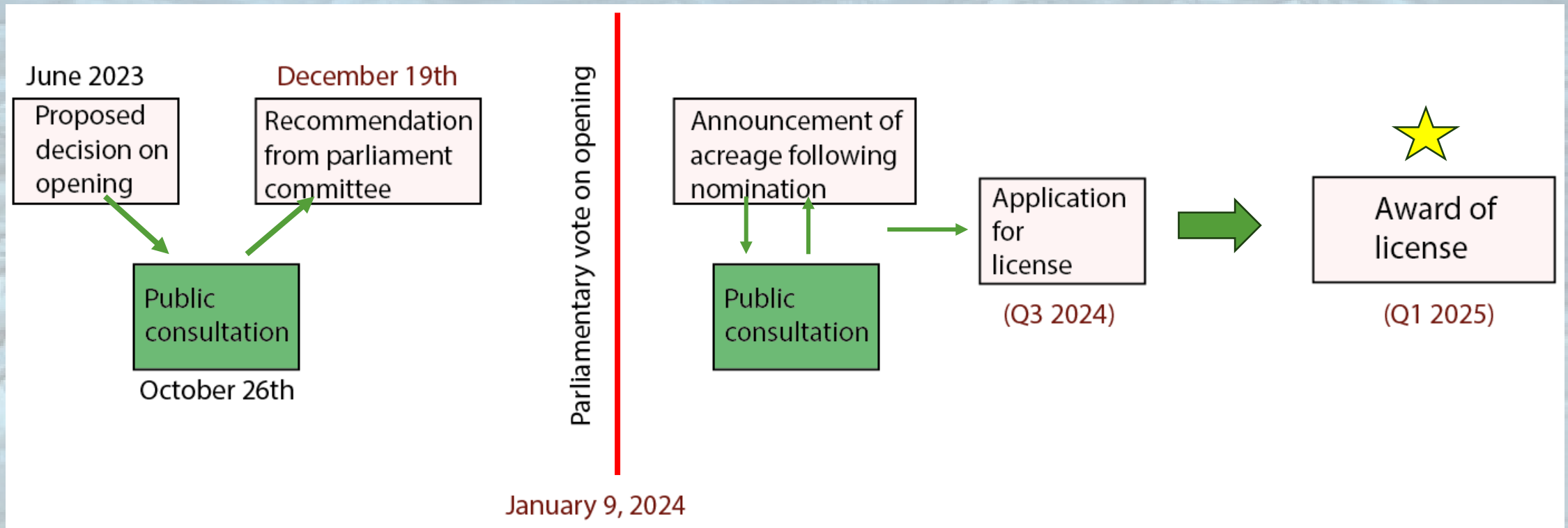
## Offshore Production

- HEDSM Conceptual Study (OSI Consortium)
- NTNU Geoscience PhD program

## Mineral Processing

- GTK SMS processing study

# Timeline license award



# A Significant Resource on a Global scale

NOD (NPD) Resource report

| Metal | NPD (Tons) | Global annual production (Tons) | NPD/Global prod. |
|---|---|---|---|
| Copper | 38 100 000 | 21 000 000* | 1.8x |
| Gold | 2 317 | 3 090** | 0.8x |
| Silver | 85 200 | 24 000* | 3.6x |
| Cobalt | 1 000 000 | 170 000* | 5.9x |

Seabed minerals: Substantial resources on the Norwegian shelf

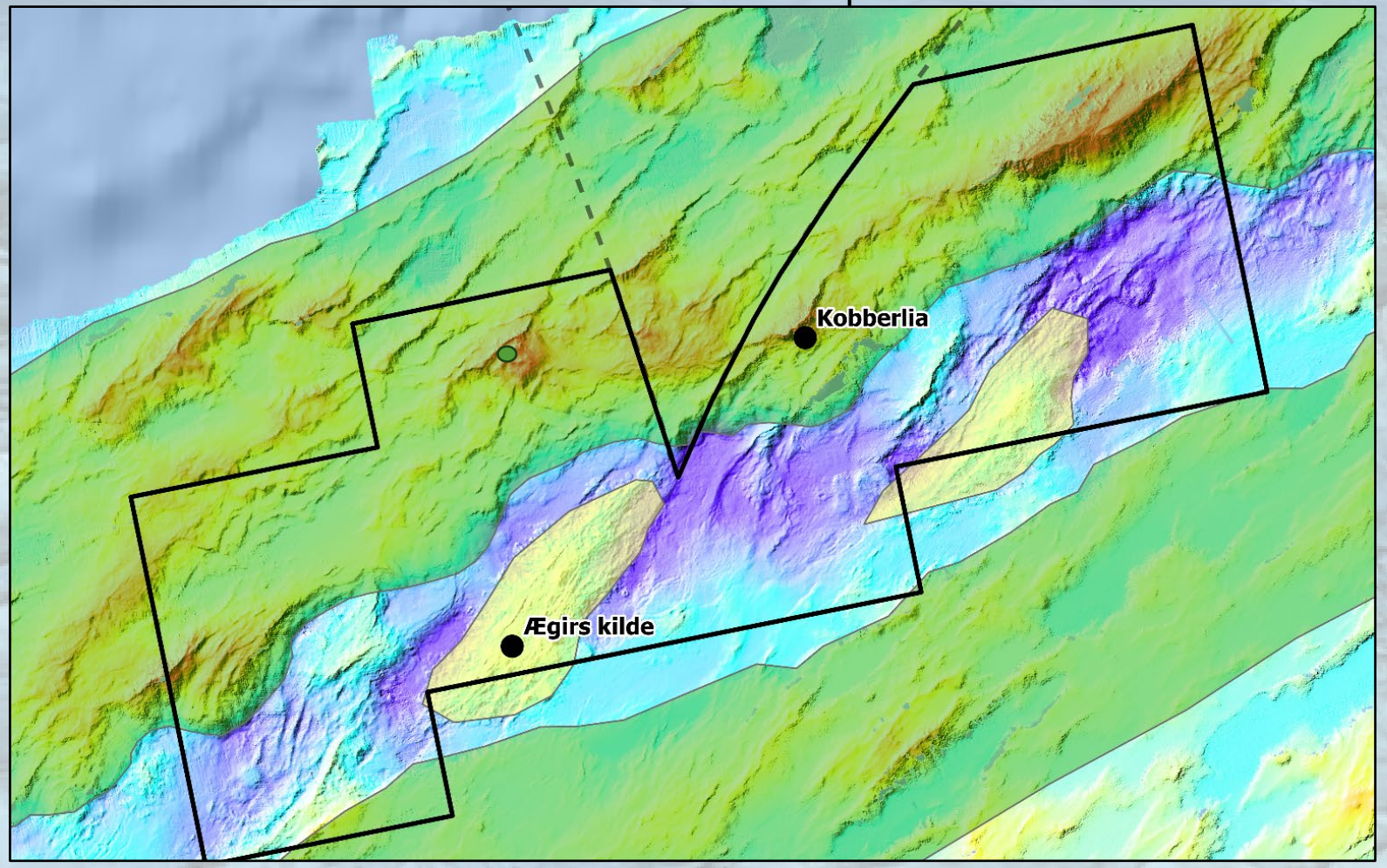

*All the metals we mined in 2021: Visualized - MINING.COM

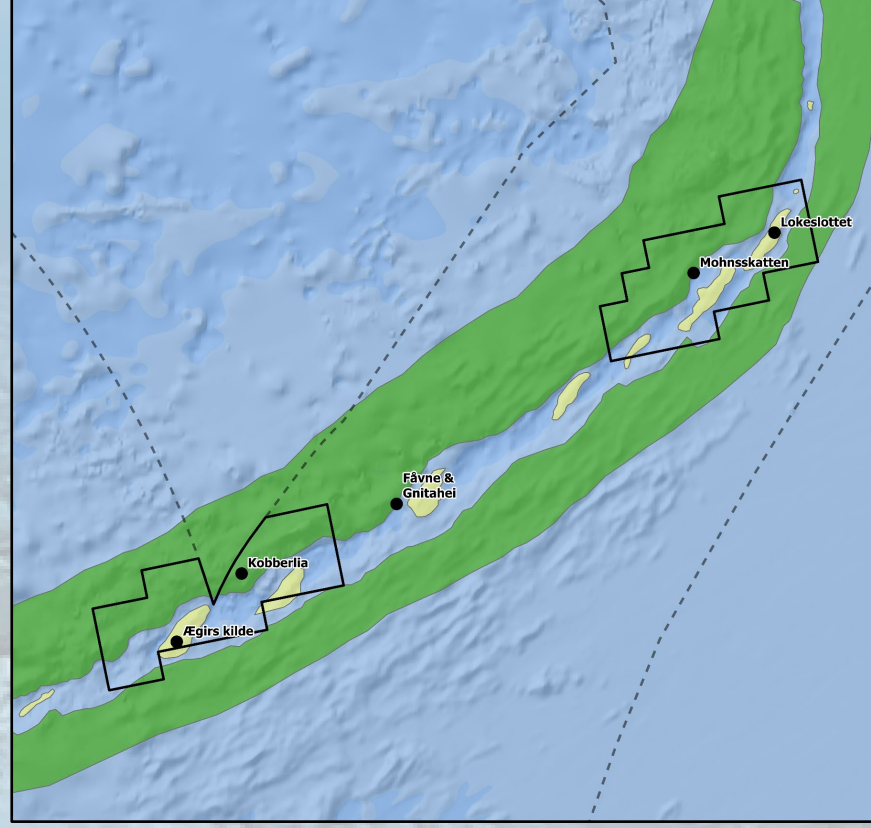
**Global gold production from mines 2022 | Statista

Exploration

# Play models

*«The frequency of flank occurrences is substantially higher than that of axial deposits. In addition, the preservation potential of the axial deposits is lower than that of the flank deposits»*
NOD Resource report 2023



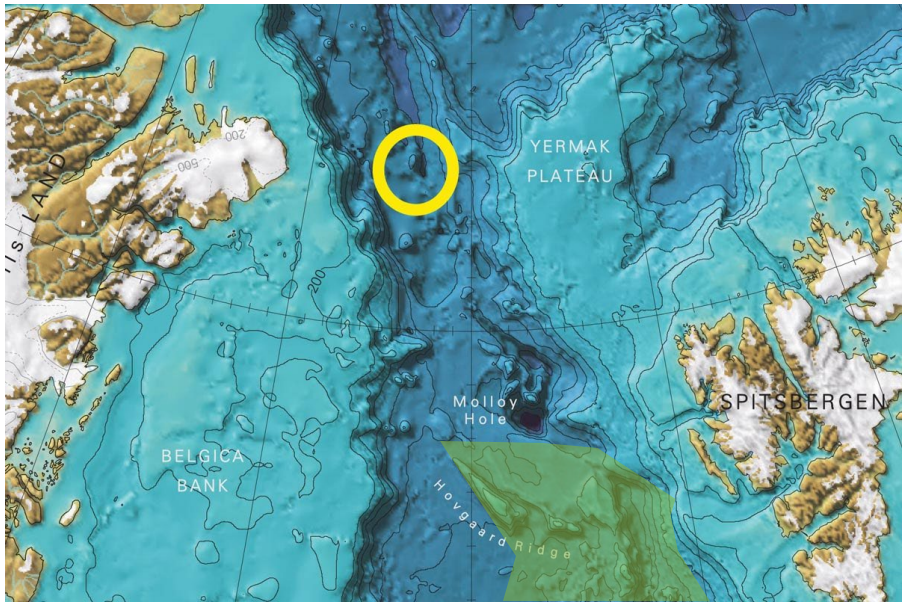

**Axial model:**
Lower preservation potential due to volcanism
Short-lived ->smaller

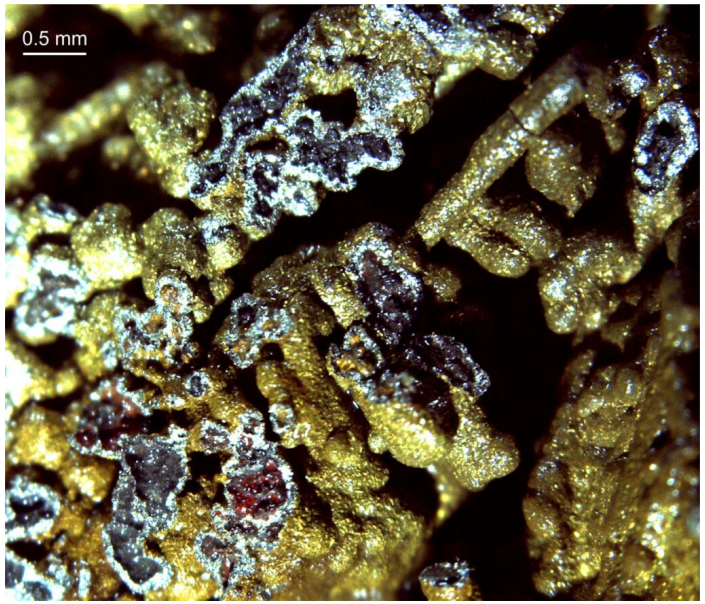
**Flank model:**
Higher frequency
Evolves over a longer period of time ->larger
Prone to faulting and partial collapse

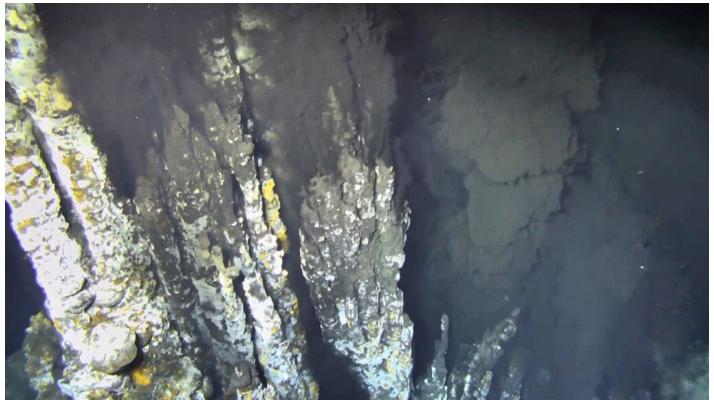
# GoNorth research cruise, Ultima Thule discovery

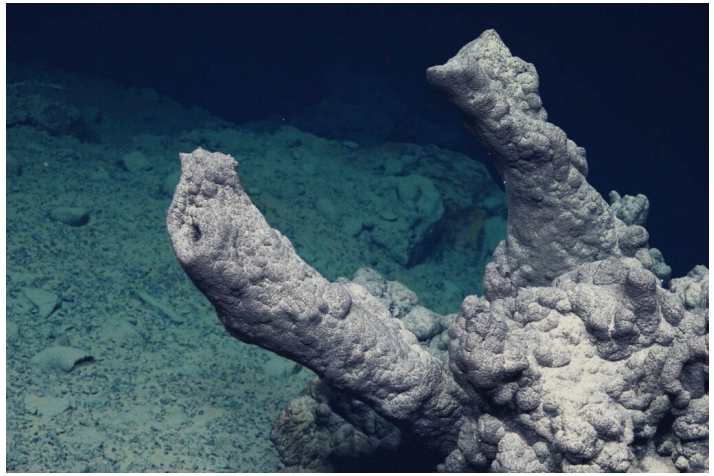
Axial Volcanic Ridge

- Collaboration between 13 Norwegian research institutions
- Known hydrothermal activity since 2004, but never confirmed



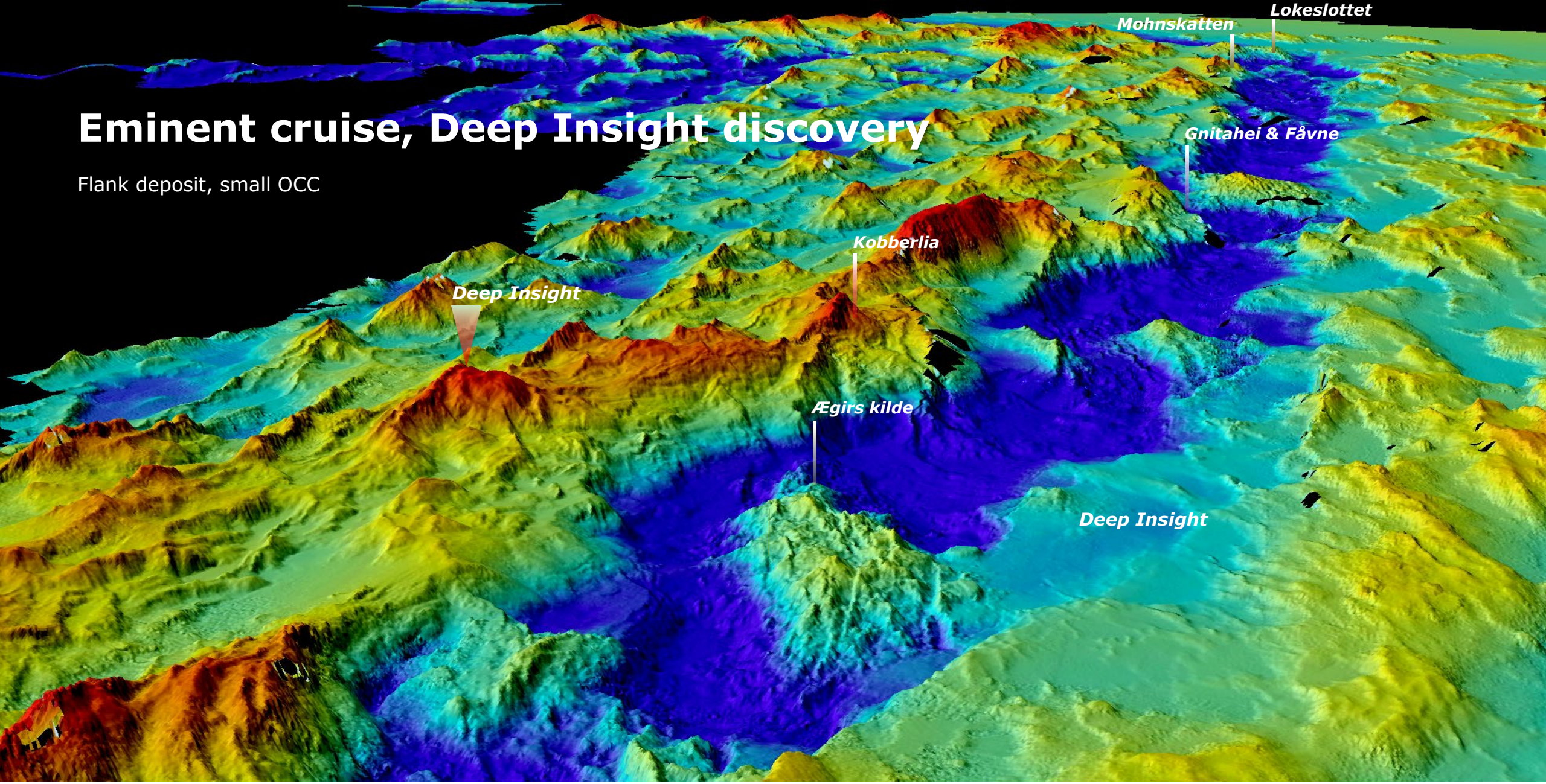


*«One of the biggest hydrothermal fields we know of, and it was a surprise to find it in this area»*
Prof. Rolf Birger Pedersen, NRK 18 aug 2018

Source: Daglige rapporter fra toktet 2023 (sintef.no)

# Eminent cruise, Deep Insight discovery

Flank deposit, small OCC



# Deep Insight deposit

Discovered May 2023

Massive sulphide sample from the Deep Insight discovery.
Photo courtesy of the Eminent project:
Learning across disciplines | EMINENT (eminent-project.com)

- Discovered at a water depth of just over 1000 m.
- Located on a low-angle fault zone in a tectonic setting resembling a small oceanic core complex (OCC).
- The structure is a little over 200 m across and rises 50 m over the surrounding seafloor.
- Drillcores taken to the depth of 18 meters.
- Preliminary core measurements (LIBS) indicate the presence of copper-rich intervals.

Reference: Pedersen, R.B, 2023. Abstract "Deep Sea Minerals-Abstracts & Proceedings".

# Production

- Two main activities:
- **Offshore Production.** Deep-Sea Mining system which includes subsea mining machines, a vertical transportation system, and a support vessel
- **Onshore Production** The processing of the marine minerals after their offshore extraction
- In 2023, GEM has made good progress with the conceptual design of a Harsh-Environment Deep-Sea Mining System (HEDSM). The concept is revolutionary and combines technology from both the mining and the oil and gas industries. The concept has been presented for the first time at the Geonova Marine Minerals conference held in Bergen in December 2023. Deep-sea mining

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Oil States

Marine operator

SMD

Subsea equipment

Global pump supplier

RISERTEC Riser Technology
A Division of Oil States Industries

Horizontal transportation

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# Concept for SMS mining system in Norway

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OSIMinerals™

Exploration

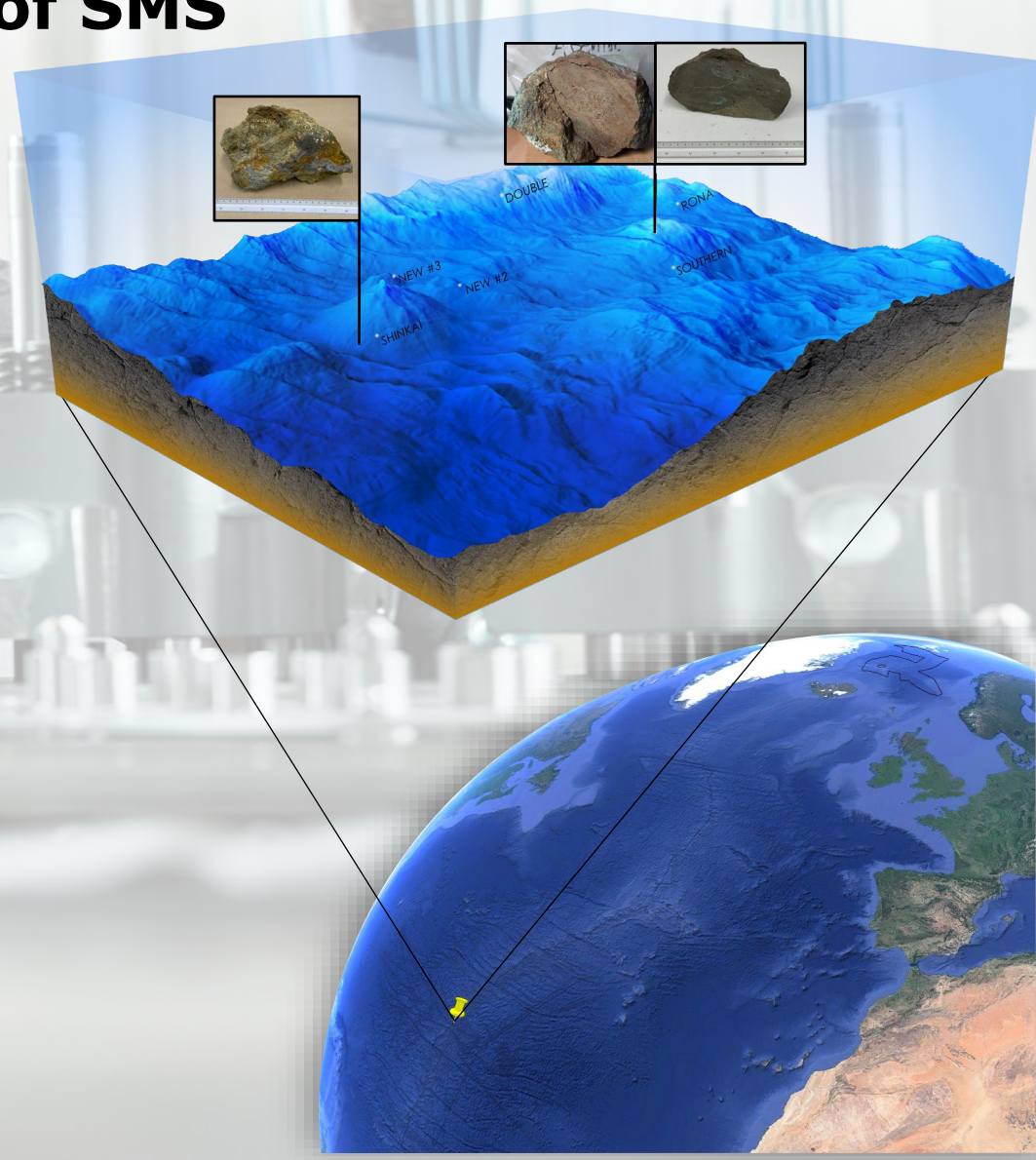
Offshore Production

Mineral Processing

# Early identifying processing methods of SMS

- Phase 1: A geometallurgical characterization study to define key material properties and guide type choice of the processing methods
- Phase 2: A mineral processing scoping study to test the selected minerals processing methods and blendibility

***Investigate the potential of processing SMS ore in existing plants in the Nordic countries***

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Source: Petersen, S (2019): Raw multibeam EM122 data and data products: METEOR cruise M127 (TAG Hydrothermal Field, Atlantic) (pangaea.de)

# Blendability study (SMS)-> Enabling our business strategy

**Building a new processing plant means high CAPEX : long Life-Of-Mine (LOM) requirements**

**Need to discover several SMS deposits to sustain long production before making FID**

**Exploration time will be longer and expected revenues further in the future.**

**SMS ore are genetically related to other copper ores.**

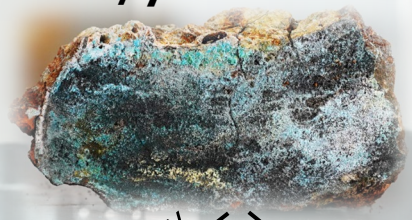
**Business strategy: Integration of SMS ore in the existing copper processing flowsheet.**

**Reduction of consolidated resource portfolio**

**Reduction of exploration time and shorter route to first revenues**

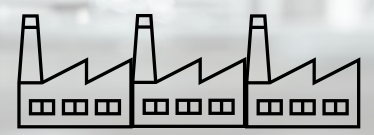
**Win/win paradigm for existing aging mine by longer use of already spent CAPEX, and boosting of marginal ore**

- **5-8000 tonnes/day ore to surface**
- **1,5Mt ore/year**



Existing facility

New facility



- **5 years production**
- **7,5 Mt ore for project life**

- **10-15 years production**
- **15-22,5 Mt ore for project life**

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# Blending:
# Terrestrial and marine copper ore

**XRF analysis %, Terrestrial ore**

| S* | Cu | Ni | Fe | SiO2 | CaO | Al2O3 | MgO | Co | Zn | W |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,5 | 0,255 | 0,245 | 8,603 | 46,903 | 13,96 | 3,343 | 19,799 | 0,051 | 0,003 | 0,125 |

Low-grade Cu-Ni sulphide ore. The mineralogical analysis showed the main minerals as chalcopyrite, pentlandite, pyrrhotite and pyrite. The grain sizes are around 20-30 µm.

**XRF analysis %, SMS ore**

| | S* | Cu | Fe | Zn | Co | Mo | Ag | W | Rh | Se |
|---|---|---|---|---|---|---|---|---|---|---|
| SMS-2 | 50,5 | **1,79** | 45,8 | 0,0069 | 0,207 | 0,0106 | 0,0032 | 0,128 | 0,0021 | 0,0074 |

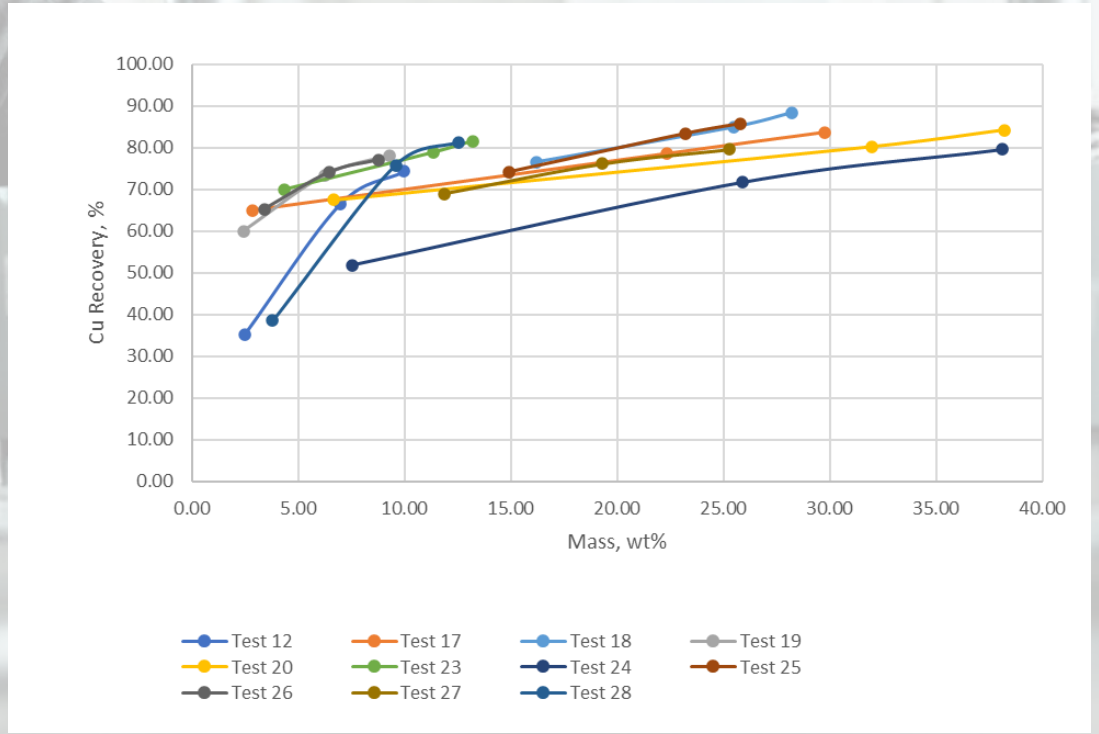
Sample contain high contents of S and Fe which are mainly carried by pyrite.

# Blendability proven !

- 15 tests with different:
  - VMS/SMS ratios
  - Commonly used Reagents for floatation/depression
- Same comminution (d80 - 35µm)

- => SMS can be floated together with other copper ores
- => SMS can be introduced within the same comminution

- Business plan for smaller reserves stands

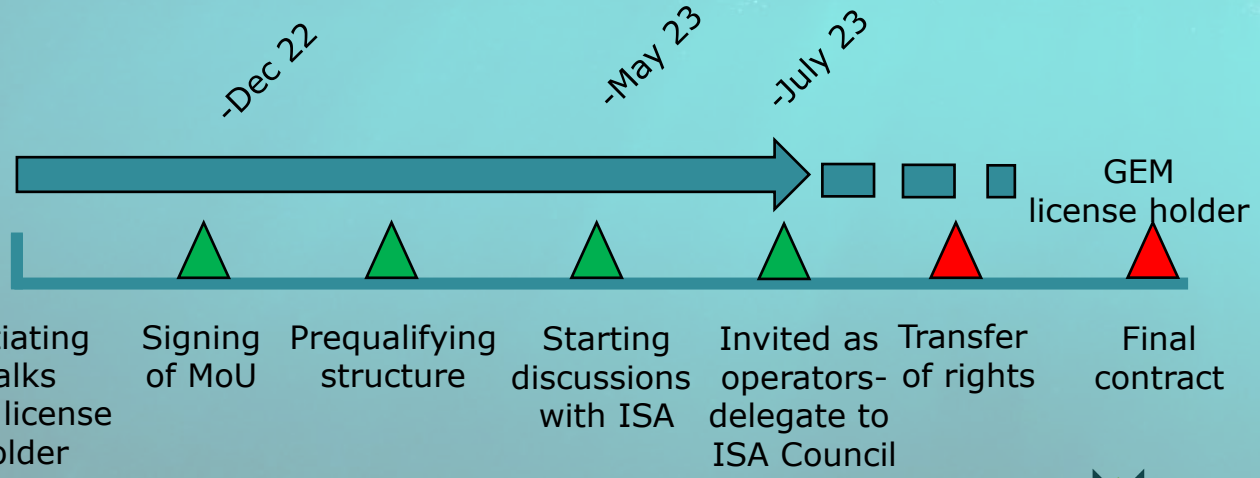


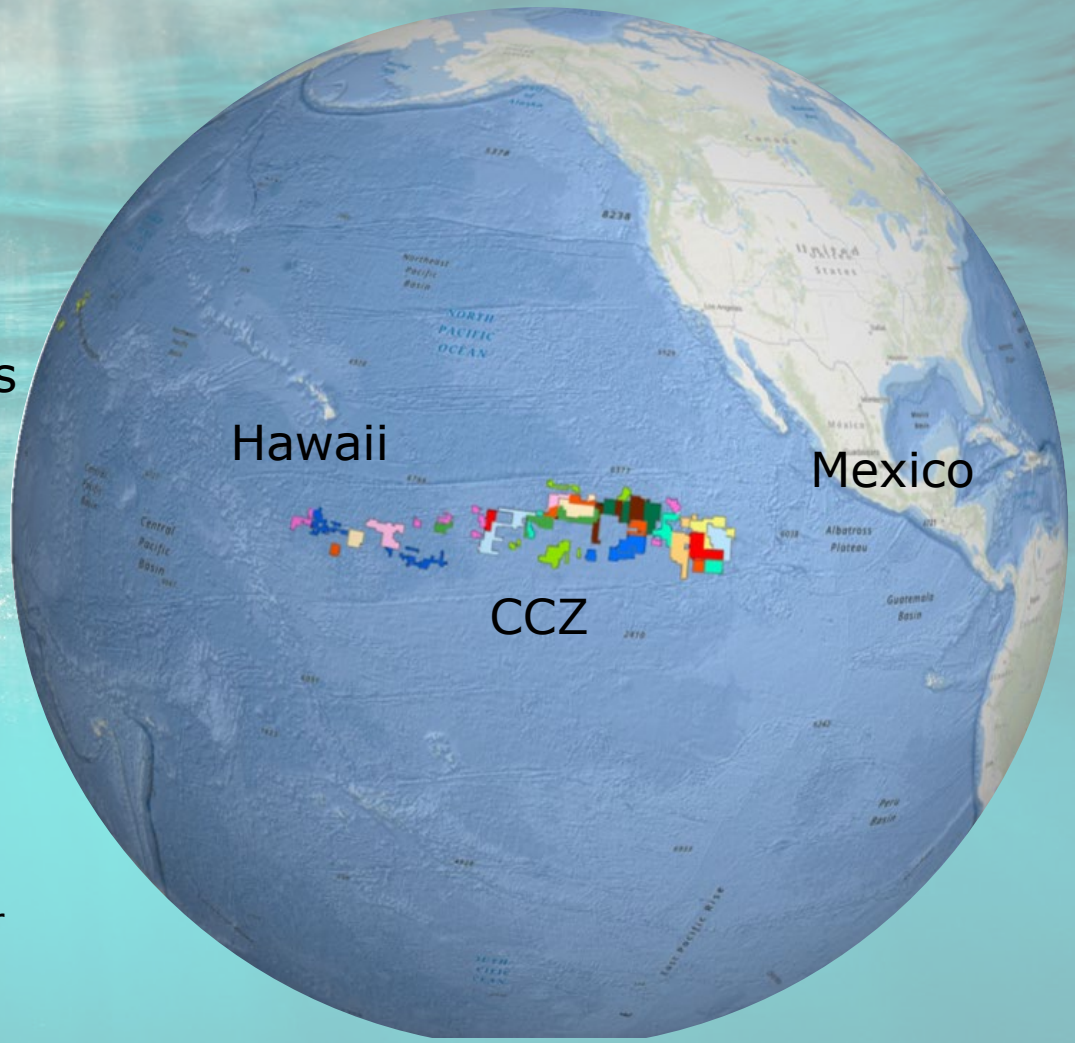
# The Pacific

**Prequalified** structure for our merger in the CCZ. Our MoU is extended through 2024.

**Green Minerals participated** as part of operators delegation to the 28th ISA Council Meeting in Kingston (July 2023)

**Our** consortium partners have already been involved in test production in the CCZ.



# Green Minerals summary

- **A pioneer and frontrunner** in marine minerals in Norway
- **Well positioned** for a license win in Norway. Expected license award Q4 2024/Q1 2025
- **Business strategy proven.** Blending SMS-ore into onshore copper processing facilities is proven by the GTK study.
- **Opening decision** in Norway. On January 9th, 2024 the Norwegian Parliament voted in favour (80-20) of an opening for deep-sea mining.
- **Green Minerals** working towards transfer of rights and final contract on large nodule license in CCZ. MoU is extended through 2024.
- **USA and the EU** declare > 30 minerals critical to national security. Including copper.

# Q&A

# THANK YOU!

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