



# DEEP SEABED MINING

## WWF'S GUIDE FOR FINANCIAL INSTITUTIONS

(UPDATE 2024)

**Published:** March 2024

**Suggested citation:** WWF (2024). Deep seabed mining: WWF's guide for financial institutions.

## **AUTHORS**

**Stefano Esposito**, Senior Advisor Sustainable Finance, WWF-Norway

**Kaja Lønne Fjærtøft**, Senior Advisor Sustainable Oceans, WWF-Norway

**Trond Furnes**, Senior Advisor Sustainable Finance, WWF-Norway

## **CONTRIBUTORS**

**Andy Whitmore**, Finance Advocacy Coordinator, Deep seabed mining Campaign.

**Jessica Battle**, Global Lead No Deep seabed mining Initiative, WWF

**Else Hendel**, Team Lead Politics and Business, WWF-Norway

## **ABOUT WWF**

WWF - World Wide Fund for Nature is a global, independent conservation organization active in nearly 100 countries. Our mission is to stop the degradation of the earth's natural environment and to build a future in which humans live in harmony with nature by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable and promoting the reduction of pollution and wasteful consumption.

## **ABOUT PROFUNDO**

On behalf of WWF, Profundo carried out a market analysis to identify the main players in the Deep seabed mining sector. Profundo is a Dutch-based independent not-for-profit company which analyse international commodity chains, the financial sector, policy developments and the impacts of businesses and financiers on all sustainability aspects. More info at <https://www.profundo.nl/en>

*Notice for text and graphics: © 2024 WWF*

*All rights reserved.*

*Reproduction of this publication (except the photos) for educational or other non-commercial purposes is authorised subject to advance written notification to WWF and appropriate acknowledgement as stated above. Reproduction of this publication for resale or other commercial purposes is prohibited without prior written permission.*

## TABLE OF CONTENT

Outline.....	4
WWF recommendations to financial institutions.....	4
Overview of relevant companies potentially related to dsm .....	4
Why deep seabed mining poses unacceptable risk to nature and people .....	7
Why deep seabed mining is a risky business.....	7
Don't we need the minerals for the green transition? .....	9
Global support against DSM.....	9
Examples of financial institutions' policies on DSM.....	10

## OUTLINE

This briefing for financial institutions includes:

- A background on why deep seabed mining (DSM) is risky and unacceptable.
- WWF's recommendations on how financial institutions should develop a policy on deep seabed mining.
- An analysis made by Profundo for WWF, updated in November 2023, which provides a preliminary overview of the most relevant companies globally, serving as a basis for financial institutions to conduct further due diligence and start implementing the provided recommendations.

## WWF RECOMMENDATIONS TO FINANCIAL INSTITUTIONS

WWF recommends that financial institutions join the growing number of governments, organizations, scientists, companies, and financial institutions that are calling for a global Moratorium on deep seabed mining<sup>1</sup>, in line with the recent position of among others UNEP-FI (see section below).

Specifically, WWF recommends that financial institutions develop a dedicated policy to stop and prevent financing that can lead to deep seabed mining which targets different players in this supply chain. WWF recommends that financial institutions:

- 1) Publicly commit not to invest in pure-play deep seabed mining companies, or companies with a significant share of their revenue or activities within DSM.**
- 2) Engage with non-pure-play mining companies** and use all available engagement tools with the clear ask of stopping activities linked to deep seabed mining.
- 3) Engage with non-mining companies that are potential users of metals/minerals**, in sectors such as consumer electronics, industrials, energy technology, asking them to sign the business call for a moratorium<sup>2</sup>, develop proper monitoring systems, track minerals sourced and exclude DSM.
- 4) Engage with financial institutions and other sources of DSM funding, including companies with ownership in DSM-related companies**, to make them adopt similar policies.

## OVERVIEW OF RELEVANT COMPANIES POTENTIALLY RELATED TO DSM

To support financial institutions to implement a DSM-policy, Profundo (NL) has, on behalf of WWF, carried out a market analysis with the goal of identifying companies engaged, in various form, in deep seabed mining. This analysis is a partial update of the 2022 analysis<sup>3</sup>, which also included a list of financial institutions and their ties with companies. The 89 parent companies and 127 subsidiaries identified are meant to serve as a preliminary list to support further actions.

<sup>1</sup> <https://www.savethehighseas.org/momentum-for-a-moratorium/>

<sup>2</sup> <https://www.stopdeepseabedmining.org/about/>

<sup>3</sup> The previous 2022 analysis is available here: [http://profundo.nl/20220906\\_Profundo\\_Mapping\\_deep-sea\\_mining\(DSM\)\\_corporate\\_players\(EXTERNAL\\_USE\).xlsx](http://profundo.nl/20220906_Profundo_Mapping_deep-sea_mining(DSM)_corporate_players(EXTERNAL_USE).xlsx)

The complete 2023 analysis can be downloaded [here in excel format](#)<sup>4</sup> alongside the Profundo briefing “[Mapping of deep seabed mining corporate players: Supply chain forecasting](#)”<sup>5</sup>.

The list is built on the best of the available knowledge, and it is based on desktop research and company analysis, as well as financial information retrieved from Bloomberg and Refinitiv. Nonetheless, as with all market analyses, there are some limitations to take into consideration:

- The deep seabed mining market is still in its origin and is a very dynamic space. There are currently no companies commercially extracting minerals from the deep sea, and thus no revenue associated with this. The companies identified as “pure-play” are typically new companies that are starting to raise funding, some of which have recently listed on the stock exchange.
- Given the point above, it is not possible to define clear thresholds to be able to identify companies with significant DSM involvement, e.g. that have >5% of revenue from DSM, or that source >5% of their minerals from DSM.

**Based on the information retrieved, and on the policy recommendations above, companies have been classified in the following categories:**

- **Pure-play:** Companies engaged solely in deep seabed mining.
- **Non-pure-play - Mining:** Companies with subsidiaries (or divisions of the same company) engaged in deep seabed mining while the parent company is engaged in other business.
- **Non-pure-play - Auxiliary:** Companies with business in rubber, pipes, submersible, machinery, off-shore oil and gas; that is to say products or services that can potentially be used in deep seabed mining. These companies are within the scope because they have already engaged in deep seabed mining projects or joint ventures (with pure-play companies) though they are not deep seabed mining companies themselves.
- **Non-pure-play - Investor:** Financial institutions or investment companies investing, and with controlling power, in deep seabed mining companies.

**The analysis intends to give an overview of key companies with direct and indirect exposure to DSM activities and should provide a valuable starting point for financial institutions to conduct their due diligence and assess their own exposure to the financing of DSM activities.**

<sup>4</sup> 2023 analysis by Profundo: <https://media.wwf.no/assets/attachments/2023-082-Mapping-of-DSM-companies-ordered-by-pure-play.xlsx>

<sup>5</sup> Permalink: <https://media.wwf.no/assets/attachments/Mapping-of-deep-sea-mining-DSM-Supply-chain-forecasting.pdf>



(*Luidia sarsi*) bipinnaria larva, deep sea Atlantic ocean.  
© naturepl.com / David Shale / WWF



## WHY DEEP SEABED MINING POSES UNACCEPTABLE RISK TO NATURE AND PEOPLE

Deep seabed mining is a potential new industry based on extracting minerals from the seabed through either scraping, cutting, picking, or dredging the mineral deposits from the seafloor, transporting them to a surface vessel, extracting the minerals – which will be further processed on land - through de-watering and then releasing the sediment-rich waters back into the sea. There is widespread concern in the scientific community<sup>6</sup> about how DSM could have irreversible impacts on deep ocean ecosystems by altering the delicate balance between sediments, nutrients and living organisms. DSM is also likely to impact the carbon storage ability of the deep sea, which is the biggest carbon storage area on the planet. Economists project far-reaching financial consequences for industries and communities that depend on a healthy ocean. For instance, the dumping of mine tailings mid-water could potentially release heavy metals into the food chain, thus severely impacting fisheries. DSM could cause entire species to go extinct. These are some of the most important reasons why an increasing number of countries (24 by January 2024) are calling for a moratorium, precautionary pause or ban on DSM, including Germany, the United Kingdom, France, Portugal, Switzerland, Fiji, Mexico, Chile, Brazil and Sweden.

Deep seabed mining could impact the carbon storage ability of the deep sea, which is the biggest carbon storage on the planet.



© Doug Anderson / Silverback / Netflix

## WHY DEEP SEABED MINING IS A RISKY BUSINESS

Despite what companies engaged in the development of deep seabed mining claim, there is no way to conduct a proper impact assessment. The technology for this kind of assessment is yet to be developed and our knowledge of the deep-sea environment is still in its infancy, with less than 5% of the

<sup>6</sup> The International Union for Conservation of Nature (IUCN) and over 600 marine science and policy experts called for a pause to DSM. <https://www.seabedminingsciencstatement.org/>

ecosystem having been studied. For this reason, WWF believes that DSM should be considered unacceptable in all areas, and not only in the most vulnerable or high-biodiversity ones (e.g. in protected marine areas).

Scepticism towards the presumptive sustainability of DSM is also stated by high-level bodies. In 2022, the UNEP-FI concluded<sup>7</sup> that *“there is no foreseeable way in which the financing of deep seabed mining activities can be viewed as consistent with the Sustainable Blue Economy Finance Principles”*, citing significant regulatory, reputational, and operational risks. Similarly, the UN’s High Level Panel for a Sustainable Ocean Economy concluded that *“The potential to mine the deep seabed raises various environmental, legal and governance challenges, as well as possible conflicts with the United Nations Sustainable Development Goals.”*<sup>8</sup>

The International Seabed Authority, that regulates DSM activity in international waters, is unfit for its purpose due to conflicting mandates and in-built conflicts of interest<sup>9 10</sup>.

**There is no company actually carrying out any Deep seabed mining. The few pure-play companies are not generating any revenue and are attempting to increase financing while promoting a narrative built on wrong premises.**

WWF believes that DSM will likely come under higher scrutiny in the coming years, following increased public awareness that will potentially increase reputational risk for companies & investors<sup>11</sup>.

It is important to remember that, currently, there is no company performing commercial deep seabed mining. The few pure-play companies that exist do not generate any revenue and are attempting to increase financing while promoting a narrative built on the unproven sustainability of deep seabed mining. For a financier, funding DSM activities carries substantial risks, both financial and reputational. There is little upside and a 100% downside from a business that will likely need renewed financing because licenses will either be delayed or will not be forthcoming at all. For an investor, it is much of the same. Even if a stock carries a greater potential upside than a loan/bond, there are likely to be several capital increases along the way because of the absence of company revenue. At each juncture, investors will be faced with the option to take their losses or commit anew.

#### **The only company that has attempted DSM exploitation went bankrupt**

*Nautilus Minerals* was a Canadian first mover in the deep seabed mining business, wanting to exploit deep sea minerals in the jurisdictional waters of Papua New Guinea. Established in 1987, Nautilus Minerals went bankrupt in 2017, causing large losses for several banks, including ABN Amro. It also put Papua New Guinea’s government in major debt. ABN Amro has since signed the moratorium on deep seabed mining, along with other large banks, such as NatWest and Lloyds Bank.

<sup>7</sup> <https://www.unepfi.org/publications/harmful-marine-extractives-deep-sea-mining/>

<sup>8</sup> <https://oceanpanel.org/publication/what-role-for-ocean-based-renewable-energy-and-deep-seabed-minerals-in-a-sustainable-future/>

<sup>9</sup> [https://www.fint.assessments.panda.org/downloads/isa\\_and\\_principles\\_of\\_international\\_environmental\\_law\\_final\\_wwf\\_2020.pdf](https://www.fint.assessments.panda.org/downloads/isa_and_principles_of_international_environmental_law_final_wwf_2020.pdf)

<sup>10</sup> <https://chinadialogueocean.net/en/governance/19905-sandor-mulsow-isa-not-suited-to-regulate-oceans/>

<sup>11</sup> <https://planet-tracker.org/out-of-sight-but-not-out-of-mined/>





© naturepl.com / David Shale / WWF

## DON'T WE NEED THE MINERALS FOR THE GREEN TRANSITION?



© Global Warming Images / WWF

This is a claim regularly made by proponents of DSM but without presenting any concrete evidence. This claim has been disproven by at least two major reports: A study<sup>12</sup> by SINTEF, one of Europe's largest research institutions, showed that a combination of circular economic solutions, adoption of existing technologies and increased recycling of minerals reduces the global demand for minerals by up to 58%, while securing the achievement of our climate objectives. The EASAC<sup>13</sup>, which represent all National Academies of Science in Europe, concluded that *"the argument that deep seabed mining is essential to meet*

*the demands for critical materials [for the green transition] is thus contested" and "rather, sustainable development should prioritise reducing human demands on planetary resources that are already exceeding sustainable rates of harvesting and exceeding planetary boundaries, and accelerate moves towards circularity."*

## GLOBAL SUPPORT AGAINST DSM

Increasingly, countries, companies and financial institutions are publicly supporting a stop to DSM, and many have signed the largest public initiative asking for a global moratorium on DSM<sup>14</sup>. The full list of institutions and companies is found on the website. Examples of companies include BMW Group; Google; Northvolt; Philips; Samsung SDI; Scania; Volkswagen Group; Volvo Group; Triodos Bank. Other companies that explicitly excluded DSM from their procurement policies and/or investment policies include Microsoft; Ford; Daimler; General Motors; Tiffany & Co.

<sup>12</sup> SINTEF (2022). The future is circular. <https://www.sintef.no/en/publications/publication/2073636/>

<sup>13</sup> [https://easac.eu/fileadmin/user\\_upload/EASAC\\_Deep\\_Sea\\_Mining\\_Web\\_publication\\_.pdf](https://easac.eu/fileadmin/user_upload/EASAC_Deep_Sea_Mining_Web_publication_.pdf)

<sup>14</sup> <https://www.stopdeepseabedmining.org/endorsers/>

In 2023, a group of 37 financial institutions representing over EUR 3.3 trillion of assets signed a statement to governments asking to stop DSM citing policy, regulatory and reputational risks<sup>15</sup>.

In terms of institutions, we highlight in particular:

- The **European Investment Bank**<sup>16</sup> excludes DSM as “*Projects unacceptable in climate and environmental terms*”.
- The **IUCN World Conservation Congress**<sup>17</sup>: “*Deep seabed mining should be halted until the criteria specified by IUCN are met*”.
- The **European Parliament** called for a moratorium on DSM<sup>18</sup> and publicly criticized<sup>19</sup> Norway’s decision to open vast areas in Arctic waters for deep seabed mining activities.
- The **World Bank**<sup>20</sup> urged caution in DSM in the Pacific.
- **UNEP**: “*the sustainable blue economy is a goal for the wider blue economy, and therefore excludes non-renewable extractive industries (e.g. offshore oil and gas, and deep seabed mining) as well as unsustainable practices in other sectors.*”<sup>21</sup>
- The **UNEP** guide to “Harmful marine extractives: Deep seabed mining”: “*In their current form, there is no foreseeable way in which the financing of deep seabed mining activities can be viewed as consistent with the Sustainable Blue Economy Finance Principles.*”<sup>22</sup>
- **UNCTAD** (United Nations Conference on Trade and Development): “*industries that are known to pose a high risk to the environment are excluded ... [including] offshore oil and gas, deep- and ultra-deep-water oil and gas, marine and seabed mining.*”<sup>23</sup>
- The **High-Level Panel for a Sustainable Ocean Economy** stated that DSM “is conceptually difficult to align with the definition of a sustainable ocean economy”<sup>24</sup>.

## EXAMPLES OF FINANCIAL INSTITUTIONS’ POLICIES ON DSM

- **Storebrand Asset Management**<sup>25</sup> adopted a clear policy on DSM: “*Following the precautionary principle, Storebrand will not invest in companies involved in deep seabed mining*”.
- **Lloyds Bank Group** will not “*support new or existing customers undertaking deep seabed mining*”.
- **NatWest**’s restricted list includes “*companies undertaking deep-seabed mining*”.
- **BBVA bank (Spain)**<sup>26</sup>: “*BBVA will not support the provision of financial services to clients or projects who are involved in ... seabed mining*”.
- **Standard Chartered**<sup>27</sup>: “*Effective from March 2022 ... we will not provide financial services directly towards: ... The exploration or production of Deep seabed mining projects*”.
- **Credit Suisse**<sup>28</sup>: “*Credit Suisse will not provide any project-related financing towards the exploration or extraction of mineral deposits of the deep seabed. CS will not provide any lending or capital markets underwriting to companies that are primarily engaged in the exploration or extraction of mineral deposits from the deep seabed.*”

<sup>15</sup> [https://www.financeforbiodiversity.org/wp-content/uploads/Global-Financial-Institutions-Statement-to-Governments-on-Deep-Seabed-Mining\\_FfB-Foundation\\_19July2023.pdf](https://www.financeforbiodiversity.org/wp-content/uploads/Global-Financial-Institutions-Statement-to-Governments-on-Deep-Seabed-Mining_FfB-Foundation_19July2023.pdf)

<sup>16</sup> [https://www.eib.org/attachments/publications/eib\\_eligibility\\_excluded\\_activities\\_en.pdf](https://www.eib.org/attachments/publications/eib_eligibility_excluded_activities_en.pdf)

<sup>17</sup> <https://www.iucn.org/resources/issues-brief/deep-sea-mining>

<sup>18</sup> <https://www.savethehighseas.org/2022/05/03/european-parliament-calls-once-again-for-a-moratorium-on-deep-sea-mining/>

<sup>19</sup> <https://deep-sea-conservation.org/european-parliament-vote-norway/>

<sup>20</sup> <https://www.worldbank.org/en/news/press-release/2016/04/28/world-bank-report-urges-caution-in-deep-sea-mining-in-the-pacific>

<sup>21</sup> <https://www.unepfi.org/publications/turning-the-tide/>

<sup>22</sup> <https://www.unepfi.org/publications/harmful-marine-extractives-deep-sea-mining/>

<sup>23</sup> [https://unctad.org/system/files/official-document/ditcted2020d4\\_en.pdf](https://unctad.org/system/files/official-document/ditcted2020d4_en.pdf)

<sup>24</sup> <https://oceanpanel.org/publication/ocean-solutions-that-benefit-people-nature-and-the-economy/>

<sup>25</sup> [https://www.storebrand.no/filbibliotek/\\_attachment/inline/42b9db43-4da4-4333-a1cc-21680cf63260/86158%20-Storebrand-Policy-on-Nature.pdf](https://www.storebrand.no/filbibliotek/_attachment/inline/42b9db43-4da4-4333-a1cc-21680cf63260/86158%20-Storebrand-Policy-on-Nature.pdf)

<sup>26</sup> <https://shareholdersandinvestors.bbva.com/wp-content/uploads/2021/01/Environmental-and-Social-Framework--Dec.2020-140121.pdf>

<sup>27</sup> <https://www.sc.com/en/sustainability/position-statements/extractive-industries/>

<sup>28</sup> <https://www.savethehighseas.org/2022/04/29/credit-suisse-joins-growing-list-of-banks-shunning-deep-sea-mining/>



# A FUTURE IN WHICH HUMANS LIVE IN HARMONY WITH NATURE

Bigeye Jacks or Trevallies (*Caranx sexfasciatus*), Papua New Guinea. © Jürgen Freund / WWF



Working to sustain the natural  
world for the benefit of people  
and wildlife.

together possible.

[wwf.no](http://wwf.no)

WWF-Norway, Organisation No 952330071 and registered in Norway with reg.nos.  
© 1989 panda symbol and ® "WWF" registered trademark of Stiftelse  
WWF Verdens naturfond (World Wide Fund for Nature), WWF-Norway,  
P.O. Box 6784 St Olavs plass, N-0130 Oslo, tel: +47 22 03 65 00,  
email: [post@wwf.no](mailto:post@wwf.no), [www.wwf.no](http://www.wwf.no)