Seabed Mining
Fact or Fiction

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**First things first**

What is the seabed mining project

being proposed off the coast of South Taranaki?

Watch the video [here](https://www.youtube.com/watch?v=YyTzWnMymTE) (3:33 minutes)

Key minerals identified in New Zealand’s Seabed Deposits

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| **Mineral** | **Use & Global Demand** | **Relevance to NZ Seabed Mining** |
| **Iron Sands (Iron Ore & Titanium Oxides)** | Essential for **steelmaking**, construction, and infrastructure | NZ’s seabed contains **high-grade iron sands**, a valuable export commodity. |
| **Titanium** | Used in **aerospace, medical implants, pigments, and coatings** | Extracted from **iron sands**, NZ’s deposits have significant **titanomagnetite** content. |
| **Vanadium** | Key for **energy storage (VRFBs), steel alloys, and defence** | Found in NZ’s **iron sands**, providing potential for **battery production**. |
| **Rare Earth Elements (REEs)** | Used in **EVs, wind turbines, semiconductors, and military applications** | NZ seabed deposits **may contain REEs**, but further exploration is needed. |

Where do these minerals globally rank in criticality?

Vanadium and titanium are both recognised as critical minerals due to their essential roles in various industries and potential supply chain vulnerabilities. According to the International Renewable Energy Agency (IRENA) in their 2024 report, these minerals are categorised based on their criticality for the global energy transition:

**Most Critical**: Materials such as lithium, cobalt, and rare earth elements fall into this category.

**Moderately Critical**: This group includes **vanadium** and **titanium**, indicating a moderate level of criticality.

**Least Critical**: Materials like molybdenum and magnesium are considered least critical.

This classification reflects the importance of vanadium and titanium in the energy sector and other applications, balanced against factors like supply risk and availability. [irena.org](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2024/Oct/IRENA_Ranking_critical_materials_for_the_energy-transition_2024.pdf?utm_source=chatgpt.com)

Economic & Strategic Importance to New Zealand

**Export Potential**: Iron sands and titanium-rich minerals can position **New Zealand as a key supplier** for global steel and aerospace industries.

**Renewable Energy Supply Chain**: Vanadium and possible Rare Earth Elements (REEs) in seabed deposits could support **energy storage and green technology** initiatives.

**Local Job Creation**: The mining sector could drive **employment** and economic growth in regional New Zealand and in the case of seabed mining, Taranaki.

**Strategic Mineral Independence**: As the world shifts away from China-dominated mineral supply chains, **New Zealand could benefit from new partnerships** in mineral exports.

Project Economics – New Zealand

The proposed project will provide the following benefits to the New Zealand economy

* ~$1bn in annualised export earnings (what is sold to overseas markets)
* Approximately $250-$300m in corporate taxes and royalties
* Approximately 1600 new jobs nationwide
* Significant extraction of critical minerals Vanadium and Titanium
* Geopolitical trading of sought after minerals used in defence

Project Economics – Taranaki

The proposed project will provide the Taranaki region with

**Employment:**

* A corporate head office based in New Plymouth with up to 50 roles
* Up to 300 FTE roles relating to the integrated mining ship
* Up to 170 FTE induced roles (businesses that employ additional staff because of the new roles created and new disposable income spent in the region

*The average salary is estimated at $125,000 per FTE ensuring that the project increases the regional salary per capita levels back to pre-2016 oil & gas period.*

**GDP**

* The annual spend from the project operations within the Taranaki region will be approximately $250m per year. This includes wages and salaries of employees, and the operational expenditure associated with running the project day-to-day.

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| Fact | Fiction |
| The seabed mining project underwent extensive environmental impact assessments and in 2017 was approved by regulatory authorities based on scientific evidence. | The project was approved without proper environmental assessment, ignoring potential harm. |
| The project will use advanced technology to minimize environmental disturbance, including measures to reduce sediment plumes and impact on marine life. | Seabed mining will completely destroy marine ecosystems and lead to widespread biodiversity loss. |
| The iron sands extracted from the seabed contain minimal toxic elements, and independent studies show no significant long-term environmental risks. | The seabed mining operation will release toxic substances into the ocean, harming fisheries and human health. |
| The project will create jobs and economic benefits for New Zealand, contributing to local and national growth. | Seabed mining only benefits foreign corporations while leaving local communities with environmental damage. |
| The project owners has engaged in extensive consultation with stakeholders, including iwi groups, environmental organizations, and regulatory bodies. | The company has not properly consulted with local communities and Māori groups, disregarding their concerns. |

Sediment Plume

Opposition to seabed mining includes sediment plume behaviour. That is, the iron sands that are pumped back onto the seabed once the extraction process has been completed, and the effects this creates. In 2017, a worst-case scenario was presented to the Environmental Protection Agency (EPA) for consideration.

**CONCLUSIONS**

*The conclusions from the modelling of the worst-case scenario are that the plume of mining-derived sediment contributes significantly to the total suspended sediment concentration within a* ***few kilometres*** *of the mining operation but is* ***insignificant relative to the background suspended sediment concentration near the coast****. This plume behaviour is similar to that previously presented to the Hearing in the evidence of Dr Dearnaley with some (mostly small) differences in suspended sediment concentration. The main difference is that the area of higher sediment plume concentrations increases and extends further alongshore. The new worst-case scenario has the greatest effect on extreme statistics (99th percentiles), with the difference being small to indiscernible in the median values. Deposition from the plume increases slightly in the worst-case modelling scenario compared to the previous simulation. The deposition footprint, as with the previous simulations, can be distinguished from the background only within a few kilometres of the mining operation.*

References Hadfield, M.G and MacDonald, H.S. (2015) Sediment Plume Modelling, October 2015. Joint Statement of Experts in the Field of Sediment Plume Modelling – Setting Worst Case Parameters. Before the Environmental Protection Authority, 23rd February 2017. MacDonald, H.S. and Hadfield M. G (2017) South Taranaki Bight Sediment Plume Modelling: Worst case Scenario, March 2017.

**Is their Geopolitical Importance of the Seabed Mining Project**

Yes, geopolitical strategy is highly relevant in this case. The mining of **vanadium and titanium** in New Zealand could have strategic implications, particularly in relation to **New Zealand’s relationships with the United States, China, and its role in the broader Indo-Pacific security framework**.

**1. The Role of Vanadium and Titanium in Global Supply Chains
Vanadium** is crucial for **steel strengthening, aerospace, and emerging battery technologies** (such as Vanadium Redox Flow Batteries, which are seen as key for large-scale energy storage).
**Titanium** is essential for **aerospace, military, and industrial applications**, particularly in **defence manufacturing** (e.g., fighter jets, submarines, and missiles).
The fact that **China and Russia dominate production**, while the **USA lacks significant domestic sources**, makes **alternative supplies highly valuable**.

**2. Potential for a U.S.-New Zealand Strategic Minerals Agreement**Given the USA’s increasing focus on securing **critical mineral supply chains**, New Zealand could position itself as a **trusted Western supplier** of vanadium and titanium.
The **Indo-Pacific Economic Framework (IPEF)**, which the U.S. is promoting, emphasizes securing **reliable mineral sources outside of China**.
New Zealand could **negotiate marketing agreements** with the **United States or its allies (such as Australia and Japan)** to ensure these minerals are directed to friendly markets rather than China.

**3. Defence and Security Implications for New Zealand**The U.S. **recognizes resource security as a key aspect of defence and strategic planning**.
If New Zealand **commits to supplying** vanadium and titanium to the U.S. and allies, **it strengthens its defence relationship**.

In return, the U.S. could:
**Increase military cooperation with NZ**, including intelligence sharing and defence technology transfers.
**Provide diplomatic support** for New Zealand’s strategic initiatives.
**Enhance its role in South Pacific security**, offering more direct engagement in **maritime surveillance, cybersecurity, and regional defence**.

**4. How This Aligns with the Fast-Track Process**The New Zealand government’s fast-tracking of the project **aligns with broader Western efforts** to counter China’s dominance in critical minerals. Approval of the project could position New Zealand as a **strategic resource partner**, reinforcing its economic and security ties with the U.S. and its allies.

**Conclusion:**

If New Zealand does not move forward with the project, it risks **allowing China or Russia to continue their near monopoly**, which could limit Western access to these minerals.
If New Zealand can supply **critical minerals** to Western allies, it:

**Enhances its economic leverage** by becoming a key supplier of vanadium and titanium.
**Strengthens its defence relationship with the U.S.**, ensuring continued security cooperation.
**Positions itself as a reliable alternative** to China and Russia in the mineral supply chain.

Given these factors, **New Zealand has a strong incentive to approve the project and leverage it for strategic advantages in international defence and trade partnerships**.

Ready to take the poll?

Seabed mining in the Taranaki region can provide economic and strategic benefits where critical mineral extraction can be undertaken. This needs to be weighed against the environmental effects.

Do you support the project or not?

* Yes, dig baby dig, good to go
* Yes, provided all environmental conditions imposed can be met
* No, leave our oceans alone
* I remain undecided
* I strongly **agree** that the seabed mining project will bring prosperity for the Taranaki region
* I strongly **disagree** that the seabed mining project will bring prosperity for the Taranaki region
* I am **undecided**
* I reside in the New Plymouth District
* I reside in the Stratford District
* I reside in the South Taranaki District
* I reside elsewhere in New Zealand or overseas

Thank You!

We appreciate you taking the time to review information relating to seabed mining and completing the poll. We do hope this was informative.

The results of the poll will be published soon.

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