

# Deep Sea Mining - “Excuse my Norwegian Arm”

*Group 6: Victoria Westmark Sønnichsen, Emilie Benedikte Bjørsvik, Audun Roseth, Henos Tewoldbrhan and Ho Fai Lau*

In light of the recent decision on the 12th of April of the Norwegian government to open for exploration of Deep Sea Mining (DSM) on the Arctic mid ocean ridge, the debate on DSM is more relevant than ever<sup>1</sup>. It relates to several sustainable development goals from the 2030 UN agenda including goal 7, 8, 9, 11, 12, 14, and 15. This poster is based on outputs from research articles, Norwegian media, NGOs, and upcoming technologies of the mining industry.

Approximately 280,000 km<sup>2</sup> of seabed have been opened up for mining, potentially alleviating the insufficient supply of minerals for batteries necessary in the green transition. It has been estimated that the Norwegian seafloor contains minerals worth 1000 billion NOK<sup>2</sup>. However, there are concerns about the marine environment.

While there are significant knowledge gaps surrounding the biological communities associated with inactive vents, the chimney structure of inactive vents host cnidarians and sponges and provides substratum for long-lived and slow-growing benthic suspension feeders. Direct and indirect impacts of DSM include faunal mortality, habitat destruction, sediment plumes, and the release of toxic substances. Although the species are expected to tolerate some toxicological exposure, sessile suspension feeders may be especially sensitive to the combination of toxins, particles, and burial given the naturally low sedimentation rate of abyssal plains<sup>3</sup>.

There are two major ideas on DSM in practice. The first idea is vacuuming the metals up by excavating machines, processing them in barges or boats on the surface, and then excreting the byproduct sludge as large plumes into the water column<sup>4</sup>. The second suggestion and projection for future equipment integrates a closed system where minerals and sludge are collected in trolleys, limiting the spreading potential of the sludge and thus impact on the biology<sup>5</sup>. However, where to discard the sludge would still be a debate.

## Literature:

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