



SEAS AT RISK

for the protection and restoration of the marine environment

Deep sea mining in a circular economy

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**SAR - DSCC Deep sea mining conference:
Exploring the unknowns
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“As we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns -- the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones.”

- United States Secretary of Defense Donald Rumsfeld, 2002

In 2050, we live well, within the planet's ecological limits – 7th EAP

- to protect, conserve and enhance the Union's natural capital;
- to turn the Union into a resource-efficient, green and competitive low-carbon economy;
- to safeguard the Union's citizens from environment-related pressures and risks to health and well-being.

Circular economy – closing the loop

- EU action plan for the transition to a more circular economy, where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised, is an essential contribution to the EU's efforts to develop a sustainable, low carbon, resource efficient and competitive economy.

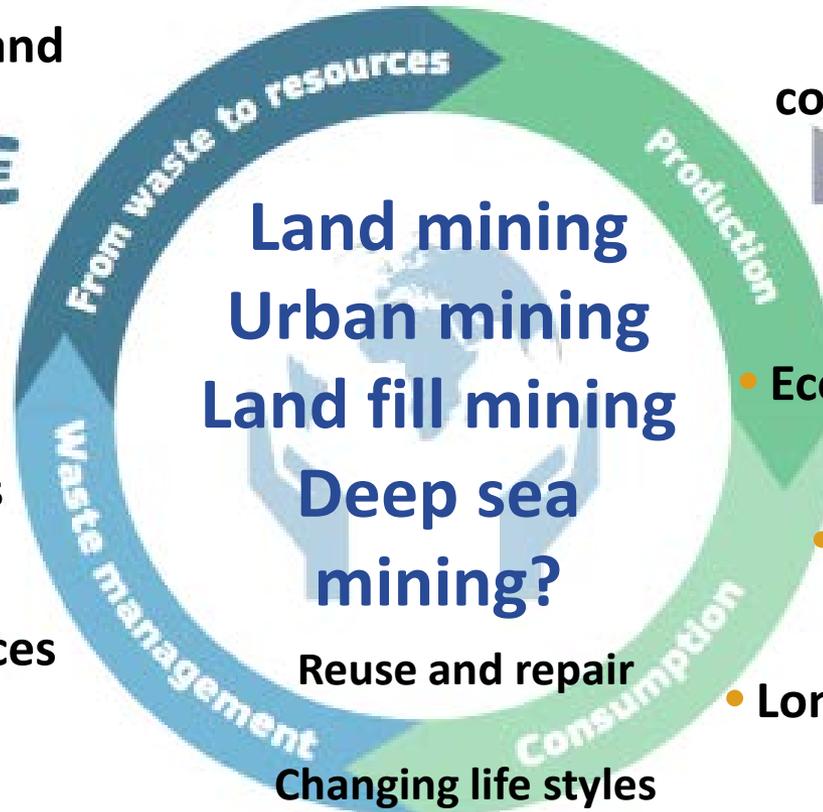
- Recycling products and materials



- Waste prevention programmes

- Economic incentives

- Setting the right prices



- System change: sharing economy, collaborative economy, innovative business models,...



- Eco-design, renewables

- Substitute materials



- Longer product life time

Awareness raising

- Electronical and electronic equipment is the fastest growing waste stream in the EU, estimated to reach 20 million tonnes per year in 2020 (EEA)
- Electronic waste can yield between 300-400 g gold per metric tonne.
- Precious metals recovered from electronic waste can be 50x richer than ores mined from the ground
- Only 1 / 3 of EU's e-waste was properly recycled in 2012. Almost 5 million tonnes were mismanaged or traded under the table. 1.3 million tonnes were illegally exported out of the EU, mostly to Africa and Asia.
- Only 18 metals are recycled with rates higher than 50%, including some found on the seabed such as manganese (53%), cobalt (68%), copper (50%), iron (50-90%), nickel (60%), zinc (20-50%). The rest have lower recycling rates, most of them as low as 1% (UN International Resources Panel)
- Rare earth elements recycling is less than 1% in Europe. Other important materials, e.g lithium, have recycling rates of virtually zero.

- Japanese car constructors have developed rare-earth-free induction motors. Honda has technique for extracting 17 rare chemical elements from batteries used in hybrid vehicles. Japan developed recycling plant to extract valuable metals and REEs from old electronic parts.
- 55 samples in four different UK landfill sites - contained £104m in platinum group metals; £280m in aluminium and copper; £10m in Lithium and £6.4m in Neodymium.
- Following Fairphone's example, other well-established brands have ventured into the sustainable phone market.
- Graphene has the potential to create next-generation of electronics currently limited to sci-fi. Faster transistors; semiconductors; bendable phones and other electronics.
- Rethinking car ownership: 1 shared car results in 9-13 less cars (4-6 cars sold plus 5-7 cars that won't be purchased) . Electric cars expected to become mainstream soon. Self driving cars estimated to become mainstream in 2020-25 .
- Gift economy, sharing economy, crowdfunding, collaborative consumption... are gaining more followers each day.

Within a circular economy - will deep sea mining be needed?

- Can demand for raw materials be managed through a circular economy?
- In a circular economy scenario: will deep sea mining be essential?
- Equity: who will get the benefits, who the impacts?
- Given steep start-up investments: how to avoid we get locked into an environmentally damaging industry at the detriment of developing alternatives?
- Sustainability: mining for 50-100yrs, impacts felt for thousands – fair to next generations?
- What are the options for future EU policy initiatives and how should research be targeted?

Deep-sea mining should not take place until...

- Circular economy alternatives are fully explored
 - **Future outlooks, 2050 scenarios**
- Baseline information is provided and data made public
- Equitable, transparent, credible governance systems are in place
- The full range of marine habitats, biodiversity and ecosystem functions are adequately protected
- A broad public debate and thorough stakeholder consultation has been held, including awareness raising

DSCC position paper, NGO Blue Manifesto for Europe's seas

Public acceptance is crucial

- I ask you not to engage in such practices that will destroy many crucial habitats and irreversibly affect everything that's living in the ocean
- Don't allow the DEEP-SEA MINING in our precious OCEANS!!
- Please protect our oceans from deep sea mining
- The destruction and devastation man inflicts on this planet must end !
- I do NOT support any bulldozing of the ocean floor!
- Allowing the destruction of the oceans, for purely financial gain, is an unforgivable mistake
- Please stop deep-sea mining. It is far too destructive to the ocean environment
- No Seabed mining ever in Europe, PLEASE!!!!!!
- Arrêtez de permettre la destruction de la faune et de la flore des mers et des océans !!!

We are, after all, talking
about the
Common Heritage of
Mankind



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