

Draft Terms of Reference for CEDA Working Group on Greenhouse Gas (GHG) emission from sediment in dredging projects

Rev. 2.0, March 2023

Introduction

The EU's nationally determined contribution (NDC) under the Paris Agreement is to reduce greenhouse gas emissions by at least 40% by 2030 compared to 1990. Countries, cities and regions, businesses and civil society members across the world are taking action to accelerate cooperative climate action in support of the Paris Agreement.

The dredging industry is taking its responsibility. Reduction of GHG emission from dredging and support equipment is the main focus at this moment. New build and modification of vessels with energy efficient engines and systems are being developed and the use of LNG or bio fuels gain popularity. Many governments through requirements and or reward systems in the tender documents, stimulate bidders to reduce GHG emission of equipment.

A CEDA Environmental Commission (CEC) work group has published an information paper on Energy Efficiency that provides an overview of key aspects during all project phases in order to make structured decisions in support of energy efficiency in line with sustainability and cost reduction. Climate change / global warming was one of the drivers to prepare this information paper.

It's only recently that it has come to the attention of the CEC that GHG emission in dredging projects does not only come from the equipment used but that also the sediment that's being dredged, transported and disposed, can release large volumes of GHG.

The CEC has decided to initiate a Work Group that investigates the possibility to elaborate on this subject. After having discussed the subject in a few meetings and the potential to share it as relevant and new information to the dredging industry, it was decided to prepare a terms of reference for an information paper. This Draft ToR is a first step in that process and will be handed to the work group that will be established to further investigate this subject.

Objective

The main objective of the information paper is to inform the dredging industry about this subject, about its nature, extent and relevance for the industry. The paper should make clear that this is an important subject that needs attention, more research and needs to be dealt with by decision makers.

It should provide measures that can contribute to the reduction of GHG emission by (wet) soil excavation, transport and deposition.

It should also explain the role and the responsibility of the dredging industry related to this emission of GHG.

Scope

Issues to be addressed in the information paper include:

- Thorough description of the processes that result in emission of GHG:
 - What happens when sediments are being excavated, how are gasses being released? At what parts of the process of dredging - transport – disposal?
 - What gasses are being released? How damaging are they?
 - Can we determine natural emissions versus what comes from the disturbance of sediments due to dredging of sediments?
 - How types of disposal impact emissions - shallow vs deep, beneficial re-use etc.
 - How time and place impact emissions - fresh vs sea water, hot vs cold environment etc.
 - Make a Life Cycle Assessment → it should be clear in this cycle what is based on measurements and what just on some equations/hypothetical calculations
 - Difference between types of GHG -short cycling - is carbon content of the sediment renewable or not?
- What are the limits of the “research area”, what spatial scale do we stop at? What type of works are considered by CEDA?
- What is the urgency for the dredging industry?
- What are the mitigation measures that can be used with existing technology e.g. beneficial reuse - this will be most interesting to the dredging industry and type of equipment - you can choose - some kind of cost benefit analysis needed?
- What are the low hanging fruits?
- Suggest relative improvement/reduction of emissions rather than absolute as there is not enough knowledge right now to quantify every action
- What should be further researched, what are the knowledge and information gaps?
- Are there any interfaces with other disciplines?
- Explain the role and responsibility of the dredging industry. The dredging industry should not be seen as the cause of this “problem” but more as an industry that can deal with/reduce the emission.

Deliverables

Information paper for the dredging industry, addressing:

- a description of the phenomenon and the scale of it. LCA, a graph with all possible stages of dredging and disposal processes
- relevance to the dredging industry
- quick wins / low hanging fruit to reduce emission from sediment
- further research required / pilots, information gaps
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Length of the documents

4 to 8 pages

Timetable

2023 - set up a task group and complete ToR

2024 - prepare the information paper

References

- Action Palette emission reduction soil material during wet soil movement EN, December 2022
- Reducing the ecosystem-based carbon footprint of coastal engineering, Technical publication, June 2022, Wetlands International