

Energy management program DC Dredging group

Management review December 2022 External



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1.1 CO₂ performance ladder

At the beginning of 2017, DC Dredging started with the CO₂ performance ladder level 3. It is now 2021 and the year 2022 is in sight. There have been many developments in recent years.

The CO₂ performance ladder has significantly increased the focus on savings and with every new investment, the possible future consumption is now clearly considered. Various elaborations have also been made in the organization in recent years to improve the structure.

An Energy Management program (our handbook) was set up at the end of 2017 and has now been well implemented. In 2021, the document was updated and adapted to the current situation of the organization.

The most important energy flows are known within the organization. During the first energy calculation at the beginning of 2018 (see management report 2017), it was found that more than 99% of the emissions come from the fuel oil consumption of the ships. Given DC Dredging's activities, there will not be a major change in the ratio of CO₂ emissions of the various business units any time soon. The emissions from our ships are therefore the most important challenge for us to reduce in order to make a real impact.

By explicitly putting the subject of CO₂ on the agenda, it has been noticed that the subject is widely discussed and also widespread. Relevant knowledge is structurally shared with each other so that the Energy Management System is further optimized. The goal is to get a system that gives DC Dredging the data to grow, work effectively, better recognize the opportunities and risks and reduce the CO₂ footprint.

2 Evaluation Energy Management System

2.1 Energy policy

The energy policy is formulated in an Energy Management Programme. This document was prepared in 2017 and updated in 2021. The document is available to all employees.

During the Executive Board Review, the objectives and associated actions are evaluated. Based on the evaluation, an action plan is drawn up for the coming year in the opportunity register. The preparation of this action plan is part of the energy management programme. Our most important reduction targets and actions are expressed here.

It has generally been observed that the awareness of our employees and especially of our captains is at a good level. The rising price of gas oil has helped us to raise awareness. There have been no projects with award advantage.

2.2 Communication

A communication plan has been formulated within the organization and this is also available to all employees. Every quarter, the ships are reported on their gas oil consumption. During the Fleet Staff Days, there was also communication and thought about reducing CO₂.

2.3 Energy performance and emissions 2021 1st half year

An energy performance overview has been drawn up within the organisation. The different energy flows within DC Dredging have been mapped. An emission inventory has been used to determine which forms of energy are purchased by the various companies under DC Dredging. These are:

Name organisation	Ship / activity	Production of	Scope 1 [t CO ₂]	Consumption [liter] fuel oil	Scope 2 [t CO ₂] (Electricity)	Total [t CO ₂]
Alderman:						
Interballast BV	DC Ostend	Sand and gravel	5.072	1.476.274		5.072
Interballast BV	Interballast III	Sand	2.109	613.654		2.109
DC Rio BV	RIO	Sand	1.852	538.900		1.852
DC Vlaanderen	DC Vlaanderen	Sand	3.049	887.462		3.049
DC Rock BV	DC Brugge	Sand	2.453	714.015		2.453
DC River	DC Orisant	Gravel	14.518	4.225.176		14.518
DC River	Inland waterway vessels	Sand and Gravel	2.141	623.209		2.141
		Subtotal:	31.194	9.078.690		31.194
Office and quay:						
DC River	Office Breskens	1.31% / 2*			Na	204
DC River	Office and Quay Sluiskil	1.31% / 2*			Na	204
		Subtotal:				409
		Total CO ₂ scope 1+2:				31.603
				Total CO ₂ scope 1		31.194
				Share scope 2		652
				Total production:	Sand (t):	3.792.452
					Gravel (t):	1.288.484

*Because the CO₂ calculation of 2018 showed that the share of scope 2 is very marginal (1.31%) and the activities remained the same as 2018 (amount of annual accounts is comparable), the consumption for 2020 and 2021 has not been checked, but 1.31% has been added to the total scope 2 consumption.

When setting up our CO₂ system, it was concluded that almost 99% of our CO₂ consumption is determined by our fuel oil consumption (Marine Gas Oil) of the ships. Our measures are therefore mainly aimed at reducing this consumption. This means that scope 2 measures can be beneficial but, given the total, this would be very marginal.

In addition, our consumption is highly dependent on production and in particular whether sand or gravel is dredged (dredging gravel requires considerably more energy than sand) and the number of dangerous kilometres needed to collect sand or gravel. In addition, there are also differences due to sand types. All this makes it difficult for us to get the result

of the savings deployed right. We therefore limit ourselves for this update to a brief explanation of our progress and a presentation of our consumption, as indicated above.

In order to calculate our consumption back to measurable values, we have calculated a consumption factor. This consumption factor determines whether our reduction target is achieved. The achieved values are published internally.

2.4 Measures and initiatives

The MT participates in a number of initiatives from the sector, including:

- Member of the association of hydraulic engineers (participation group of seagoing vessels).
- Participation NVLB (participation working group Westerschelde sand).
- Membership Schuttevaer.nl.
- In Belgium, there is an active participation in the "Hydrogen Network". As a knowledge and cooperation platform, WaterstofNet wants to contribute to a carbon neutral society by supporting and realising hydrogen projects in Flanders and the Netherlands. Together with industry and governments, we ensure concrete realizations and lay the foundation for further cooperation.
- Reading trade journals such as the KNVTS' "ship and yard".

In recent years, the dual fuel developments have also been followed (application of LNG). Van Oord has ordered 2 ships and company Van de Kamp has an LNG hopper in development (will work in Rotterdam where LNG can be refuelled) and DEME also has an LNG cutter under construction. However, LNG carriers are not yet possible for DC Dredging because bunkering cannot be done at the locations where work is carried out. LNG is seen as a real option in the dredging world.

The use of biofuel was also discussed within DC Dredging. This is an option to achieve CO₂ reduction. Biofuel is 2 to 3 times as expensive, but because good agreements have been made with the fuel supplier, it is possible to purchase this.

DC Dredging has not subscribed to tenders in the past six months. There have been tenders and registrations with the parent company DC Industrial.

Currently, there are developments within our sector in the field of hydrogen engines. When building a new ship, the fuel-saving possibilities will of course be looked at, including hydrogen engines.

3 Evaluation Action Plan 2021

3.1 Objectives 2021

Our objective 1 (scope 1) is formulated as follows:

Reduce total fuel oil consumption per ton of turnover by 2%; to be realised at the end of 2021 (related to 2017).

After we started in 2017, we can conclude that reducing CO₂ emissions from our ships is a difficult story. Due to the different cycles of our ships and customers in the different countries, the emissions per ton of aggregates can be strongly influenced. We therefore see that the consumption of our sand ships has increased. We do see a decrease in our gravel vessels.

Our second objective was the use of alternative fuels on the ship's cranes. However, this target contributes less than 1% of the total and was already considered insufficiently relevant in 2018. For the time being, no further experimentation has been carried out with this.

Regarding objective 3, we note that the scope 2 component (electricity) has been implemented, such as the purchase of LED lighting for the wheelhouses of the ships.

Regarding the training of the new sailors, an inland navigation skipper has followed a course.

3.2 Conclusion progress and realization

Reducing the CO₂ of our ships is difficult. We can therefore conclude that the sand ships have not succeeded in reducing. Only a significant investment in engines will be able to contribute. However, we do see that the awareness among staff and thinking along in solutions has increased.