

Energy management program DC Dredging group

Management review December 2022 External



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1 General

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 Management Review, the objectives and associated actions are saluted. 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 an award advantage.

2.2 Communication

A communication plan has been formulated within the organization and this is also available to all employees. Furthermore, in 2021, the ships were reported quarterly 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

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	10.133	2.949.157		10.133
Interballast BV	Interballast III	Sand	3.462	1.007.704		3.462
DC Rio BV	RIO	Sand	4.407	1.282.691		4.407
DC Vlaanderen	DC Vlaanderen	Sand	6.342	1.845.689		6.342
DC Rock BV	DC Brugge	Sand	5.280	1.536.545		5.280
DC River	DC Orisant	Gravel	31.002	9.022.736		31.002
DC River	Inland waterway vessels	Sand and Gravel	4.376	1.273.517		4.376
		Subtotal:	65.002	18.918.039		65.002
Office and quay:						
DC River	Office Breskens	1.31% / 2*			Na	426
DC River	Office and Quay Sluiskil	1.31% / 2*			Na	426
		Subtotal:				852
		Total CO ₂ scope 1+2:				65.854
				Total CO ₂ scope 1		65.002
				Share scope 2		652
				Total production:	Sand (t):	7.593.503
					Gravel (t):	2.629.725

*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 properly measure the result of the savings that have been made. 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 several 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.
- Contribution Tree Festival Day for planting 2500 trees.
- 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 "ship and yard" of the KNVTS.

We will also actively participate in the above groups for 2022.

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. This has not been further experimented with in 2021 either.

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

Regarding the training of the new sailing, 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.

4 New objectives

4.2 Reduction targets 2021-2025

In recent years, challenging goals have been set based particularly on high expectations of the DC Orisant. Afterwards it turned out that the engines didn't perform as well as promised by the supplier. At the end of 2020, the engines were replaced, and it is expected that the fuel consumption of the DC Orisant will be further reduced. Furthermore, if we want to make great strides in a greener fleet, we will have to invest heavily in greener engines or completely new ships. These decisions are taken together with the shareholder Groep de Cloedt. It is expected that more clarity will have to be provided about this in the next three years. In the short term, this means that small reductions can be achieved through better planning and "smarter" sailing.

The higher target for 2025 is a saving of 5% compared to 2020. For the next three years, we have formulated the following objective as part of the higher goal.

Progress objectives 2019 – 2022

Objective 1 (scope 1)

Reduce total fuel oil consumption per ton of turnover by 2%; to be realised by the end of 2022. Progress results up to and including 2021: At the end of 2021, an increase was observed for seagoing vessels and a decrease for gravel vessels. For the coming year, a decrease will have to be realised mainly due to more efficient planning.

Objective 2 (scope 1)

Investigating the application of alternative fuels on ships. In 2022, projects will take place in which alternative fuel will be used. At the end of the projects, an evaluation of the use will take place. Reduction improvement expectation of max. 0.5% at the end of 2022.

Objective 3 (scopes 1 and 2)

Directly feasible goals:

- Application of LED lighting on ships when replacing (as much as possible based on frequency).
- Participate in action in the field of stimulation CO₂, by a.o. becoming a member of the CO₂ neutraal.nl foundation.
- Skippers sign up for the training "the new sailing".
- Efficiently coordinate the planning of the transshipment from seagoing shipping to inland shipping.

Reduction improvement expectation of max. 0.5% at the end of 2022.

Objective 4 (other initiatives)

In addition to internal measures, DC Dredging will also look at contributing to external initiatives that contribute to CO₂ reduction.

Progress reduction targets and action plan in the coming years; 2019- 2025:

Start-position	Year	Scope	Goal realization	Contribution of measure to objective / result
Fuel Fuel Oil	2019	1	1-2 %	The consumption factor improved last year from 1.35 to 1.16. However, this is the same figure as we have already had in 2018, so there is actually no decrease yet. However, measures have been set in motion so that we now expect to further reduce the coming year.
Fuel Fuel Oil	2020	1	1-2 %	For the comparison, the DC Orisant is also included in the 2019 and 2020 figures. Due to a better performance of the DC Orisant in particular, there is a decrease of 7.7% to be observed.
Fuel Fuel Oil	2021	1	1-2 %	Due to the increase in English customers, the result was not achieved regarding the consumption at the sand fences. With the gravel ships we do see a decrease.
Fuel Fuel Oil	2022	1	1-2 %	
Fuel Fuel Oil	2023	1	1-2 %	
Fuel Fuel Oil	2024	1	1-2 %	
Fuel Fuel Oil	2025	1	1-2 %	

4.3 New measures and initiatives

Objective 1 measures

- Realize shore power connection in Breskens. There are still discussions with the municipality of Sluis about the redevelopment of the port.
- Training new sailing for inland shipping. In 2021, the first skipper went on a course. Participation will also take place in 2022.
- Further developing our internal dashboard of the ships (obtaining information about consumption and results).
- The new TD inspectors will also be given fuel control options as a focus.
- More efficient planning of both sea and inland shipping.

Objective 2 measures have already been mentioned in section 4.1 of this report.

Investigating the application of alternative fuels. Reduction improvement forecast of max. 0.5% by the end of 2022.

Objective 3 measures

- Application of LED lighting on ships when replacing (as much as possible based on frequency).
- Participate in action in the field of stimulation CO₂, by a.o. become a member of the CO₂ neutraal.nl foundation.
- Efficiently coordinate the planning of the transshipment from seagoing shipping to inland shipping.
- Investing in solar panels at our location in Sluiskil.

Other initiatives (Objective 4):

- Follow up measures from the SKAO list of measures.
- Continued participation in:
 - Association of hydraulic engineers (participation 4x per year).
 - Participation NVLB (participation working group Westerschelde sand).
 - Membership Schuttevaer.
 - Participation CO₂neutraal.nl.
- Further improvement of communication with the ships regarding reducing fuel (emailing/involving people/informing)