



SECTOR-WIDE CO₂-EMISSION REDUCTION PROGRAMME

2023-2030

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Reference documents

Reference	Title
Standards	
CO2-Performance ladder	Handbook CO ₂ Performance ladder 3.1

Abbreviations

Abbreviations	Meaning
aMT	Department Maritime Access of the Flemish Authority
MDK	Agency Maritime Services and Coast – hereinafter “MDK”
NO _x	Nitrogen oxides
VW	De Vlaamse Waterbouwers



Abbreviations	Meaning
IKZ	Procurement programme Innovations in Coastline Care
TSHD	Trailing Suction Hopper Dredger

Table of contents

1	30% reduction on 80% of maintenance dredging contracts in Flanders	5
1.1	Description of the measures targeted by the project.	5
1.1.1	Quantitative estimate of the reduction potential of the specific measure	6
1.1.2	Motivation implementation reduction programme	6
1.2	Result	6
1.3	Timetable	6
1.4	Budget	7
1.5	Expertise	7
2	Sustainability regular maintenance of Dutch coast	7
2.1	Description of the project's target measures	7
2.1.1	Quantitative estimate of reduction potential of specific measures	7
2.1.2	Motivation implementation of the reduction programme	7
2.1.3	Target group of the reduction programme	7
2.2	Result	8
2.3	Timetable	8
2.4	Budget	8
2.5	Expertise	8



Purpose

By taking part actively in a sector-wide reduction programme in cooperation with the authority, Jan De Nul aim at taking measures that are applicable to the sector as a whole, with a reduction target for a sector as a whole.

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1 30% reduction on 80% of maintenance dredging contracts in Flanders

1.1 Description of the measures targeted by the project.

Jan De Nul aim at actively implementing a minimum obligation of 30% in the assessment and/or emission reduction obligation (CO_{2e} and pollutants) in 80% of maintenance dredging contracts in Flanders by 2030, in partnership with:

- The Flemish Authority – Agency Maritime Services and Coast – hereinafter “MDK”
- The Flemish Authority – Department Maritime access – hereinafter “aMT”
- The not-for-profit organisation “De Vlaamse Waterbouwers VZW” – hereinafter “VW”
- The advanced sustainable fuels sector

Emissions include both greenhouse gases and pollutants such as NO_x and fine dust.

In this manner, we want to deploy a maximum effort to encourage other businesses within our hydraulic engineering industry to take high-potential energy or CO₂ reduction measures.

To highlight our absolute pioneering role, we set examples in projects we are awarded where there are no absolute reduction obligations yet. We do this through the deployment of ULEv equipment, the use of sustainable, innovative drop-in diesel and maximum operational optimisations.

Project	Implemented reduction measures
Maintenance Nieuwpoort Coastal Marina	Since 01.09.2019, each year at least 15% reduction on cutter and trailing suction hopper dredger activities
Maintenance dredging Scheldt & Coast	Since 01.09.2019, TSHDs Alexander von Humboldt and Sebastiano Caboto run on sustainable drop-in diesel. Since 2021, deployment of ULEv TSHD Sanderus on sustainable drop-in diesel.
Framework contract nourishment	Nourishment Raversijde 2021 and Oostende 2022: TSHDs Pedro Alvares Cabral and Alexander von Humboldt approx. 85% CO ₂ reduction achieved for the project. Deployment of Tierf 4f machines on land.
Nourishment Knokke-Heist	Nourishment Knokke 2021 and 2023: TSHD Pedro Alvares Cabral approx. 85% CO ₂ reduction achieved for the project. Deployment of Tierf 4f machines on land.
Maintenance dredging Canal Ghent-Terneuzen	Since 01.08.2021 deployment of new hydraulic dredger crane with 30% reduction of fuel consumption.

1.1.1 Quantitative estimate of the reduction potential of the specific measure

The total, sector-wide reduction aimed at by this programme is 36,000 tonnes CO₂/year (30% x 120,000 tonnes CO₂ estimated reference footprint fossil equivalent) .

1.1.2 Motivation implementation reduction programme

The 'obligation' to encourage contractors actively to make significant reductions is entirely in the hands of the authorities who draw up specifications, and this deserves extra action in the form of sector-wide lobbying, described in further detail under section 4.

1.1.2.1 Target group of the reduction programme

Target group: Vlaamse Waterbouwers and dredgers

Action plan:

- Francis Verhees – Area Director Benelux – is a director within the trade organisation Vlaamse Waterbouwers vzw. He manages the fixed agenda item regarding active CO₂ reduction in projects at meetings of the board of directors.
 - The target group is reached in 2 ways: directly through the sharing of ideas during meetings of the board of directors, and indirectly through contact of the trade organisation with the authority, which should result in the medium term in concrete reduction obligations in specifications.
- Bart Praet – Area Manager – dredging works Benelux – has half-yearly consultations with the advanced biofuels industry, and therefore he has an up-to-date insight into this market.
- Francis Verhees and Bart Praet are lobbying the Flemish authority together; the Agency Maritime Services and Coast and the Department for Maritime Access together manage all major maintenance dredging contracts in Flanders.
 - They organise consultations together to establish an open dialogue.
 - This reaches the target group in the medium term via concrete reduction obligations in specifications.

1.2 Result

- Reduction programme 2019-2022: Obligation of minimum 15% reduction in 80% of contracts
- Result = **Sustainability share in assessing 15% in 86% of contracts**
- Results programme 2023-2030 to be expanded in the years to come

1.3 Timetable

Q1/2023 until 2030

1.4 Budget

- € 5,000/year (hourly rate).
- Extra cost advanced sustainable fuels

1.5 Expertise

- Francis Verhees, Bart Praet: +25 years' experience dredging works
- Michel Deruyck: +25 years' experience technical dept. vessels and fuel cell JDN
- Hannelore Ruytjens, Jana Van Quaquebeke: experience in Energy, QHSSE and certification

2 Sustainability regular maintenance of Dutch coast

2.1 Description of the project's target measures

The procurement programme Innovations in Coastline Care (hereinafter "IKZ") aims for maximum sustainability of the maintenance of the Dutch coast in combination with an unchanged cost-effectiveness, by 2024.

Within the programme, innovation is not the target, but the means to achieve the general climate ambitions defined in the Netherlands for regular coastal maintenance too.

The programme is implemented by Jan De Nul in partnership with:

- Rijkswaterstaat Programmes, Projects and Maintenance
- LBP Sight for the monitoring and guidance of sustainability quantification
- Supplier and/or technical implementation of equipment changes required to achieve sustainability

2.1.1 Quantitative estimate of reduction potential of specific measures

The total reduction in the sector aimed at by the programme is \pm 80-90% of emissions generated by the regular maintenance of the Dutch coast.

2.1.2 Motivation implementation of the reduction programme

Dredging contractors are encouraged actively to take part in the programme: on the one hand by picking a winner who will carry out the nourishment works as from 2024 with the winning innovation; on the other by having the opportunity to develop an innovation in partnership with the contracting authority.

2.1.3 Target group of the reduction programme

Target group: Flemish and Dutch hydraulic engineers and dredgers

Action plan:

Different contractors submit their innovations and develop them in partnership with Rijkswaterstaat in different phases:

- Phase Exploration
- Phase Development
- Phase Testing and validation
- Phase Implementation

2.2 Result

- 07.02.2019: Rijkswaterstaat and Jan De Nul start the partnership to develop innovation (selection decision)
- 11.04.2019: Submission qualitative document presenting the innovation
- 2019: different calculation sessions with Rijkswaterstaat and contractors to establish a standard dredging profile and corresponding emission as a benchmark
- 02.10.2019: Jan De Nul submits Action Plan for the Exploration phase
- 15.07.2020: Phase Exploration is completed successfully including feasibility studies.
- 03.11.2021: Phase Development is then launched.
- 30.06.2023: Phase (2) development is concluded after reporting
- As from Q4 2023: implementation of Testing and Validation phase

2.3 Timetable

2019 - 2024

Phases:

- Phase Exploration: completed summer 2020
- Phase Development: to be completed Q4 2023
- Phase Testing and Validation: to start Q4 2023
- Phase Implementation – Q3-Q4 2024
- Implementation beach nourishment with huge (80-90%) sustainability increase: in commercial phase 2025+

2.4 Budget

- Hourly rates innovation studies
- Technical costs for innovation installation and, if applicable, equipment conversion
- Intervention Rijkswaterstaat per completed phase (€ 25,000 Phase Exploration; € 20,000 Phase Development, next steps to be agreed)

2.5 Expertise

- Francis Verhees, Bart Praet: +25 years' experience dredging works



- Michel Deruyck: +25 years' experience technical dept. vessels and fuel cell JDN
- Hannelore Ruytjens: experience in Energy, QHSSE and certification