



Document title:

## PROJECT FILE


Project:

# EXECUTION OF MAINTENANCE DREDGING WORKS IN THE COASTAL MARINA OF NIEUWPOORT SPECIFICATIONS NO. 16EH/18/15 – PLOT 1

Document no.: JDN0113.CO2PL.2.0 project file H2.2019

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Rev.	Date	Description of revision	Prepared	Checked	Approved
2.0	17/01/2020	Review by head of department	BP	DUY	RHA
1.0	15/01/2020	First draft	DUY	RHA	BP
00	13/01/2020	Template proposal	RHA	STIA	BP

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## 0 INTRODUCTION

The Coastal Marina in Nieuwpoort is situated alongside the river IJzer ('navigation channel'), which flows into the North Sea and along which 3 marinas are located.

The Client regularly surveys the areas and indicates where dredging is required.

In the marinas and at places in the river that are difficult to reach, we use for this a small cutter suction dredger that pumps the dredged sediments through a floating pipeline into larger seagoing split hopper barges moored in the navigation channel. When loaded, they sail approximately 12km out to sea to dump the dredged material within a defined zone.

A trailing suction hopper dredger can dredge at the other places in the navigation channel.

The contract is divided into 'lease years', which run from 16 September to 15 June of the following year. Within each lease year, a 'dredging campaign' is carried out.

This report is the first after the project has been awarded 15 September 2019.

The dredging campaign for the first lease year has already started on 22 November 2019 and will be reported on in full in the next half-yearly publication (August 2020).

### 0.1 PROJECT DETAILS


Name	Maintenance dredging works Nieuwpoort
Description	Execution of maintenance dredging works in 3 marinas and in the navigation channel in Nieuwpoort so as to bring the bottom levels up to target depth.
Specifications number	16EH/18/15 (plot 1)
Client	Agentschap Maritieme Dienstverdeling & Kust (Maritime Services a Coast Agency)
Award date	22 January 2019 (start of works in November 2019)
Execution period	3 lease years, extendable by another 3 lease years.

### 0.2 PARTIES INVOLVED

Jan de Nul NV is the main contractor of this project and responsible for:

- Deployment of cutter suction dredger ('CSD'), seagoing split barges ('SHB'), assistance boats and loading pontoons ('FLAP');
- Deployment of trailing suction hopper dredgers ('TSHD');
- Project management and daily management.

No subcontractors have been engaged during this lease year.

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### 0.3 PLANNED EQUIPMENT AND PERIODS OF DEPLOYMENT

Ship	Deployment period
<i>TSHD PINTA</i>	2X per campaign year
<i>CSD Hendrik Geeraert</i>	Yearly from November to April
<i>SHB Magellano</i>	Yearly from November to April
<i>SHB Magellano</i>	Yearly from November to April
<i>Assistance boat DN59</i>	Yearly from November to April + mobilisation & demobilisation

## 1 INSIGHT


### 1.1 IDENTIFICATION OF ENERGY AND EMISSION FLOWS [2A]

List of significant energy/emission flows:

Energy flow	Scope
Fuel consumption of seagoing split hopper barges Magellano & Verrazano	1
Fuel consumption of trailing suction hopper dredgers Pinta & Sebastiano Caboto	1
Fuel consumption of cutter suction dredger Hendrik Geeraert	1
Fuel consumption of assistance tugboat DN59	1
Electricity consumption of construction site shed	2

List of excluded energy/emission flows:

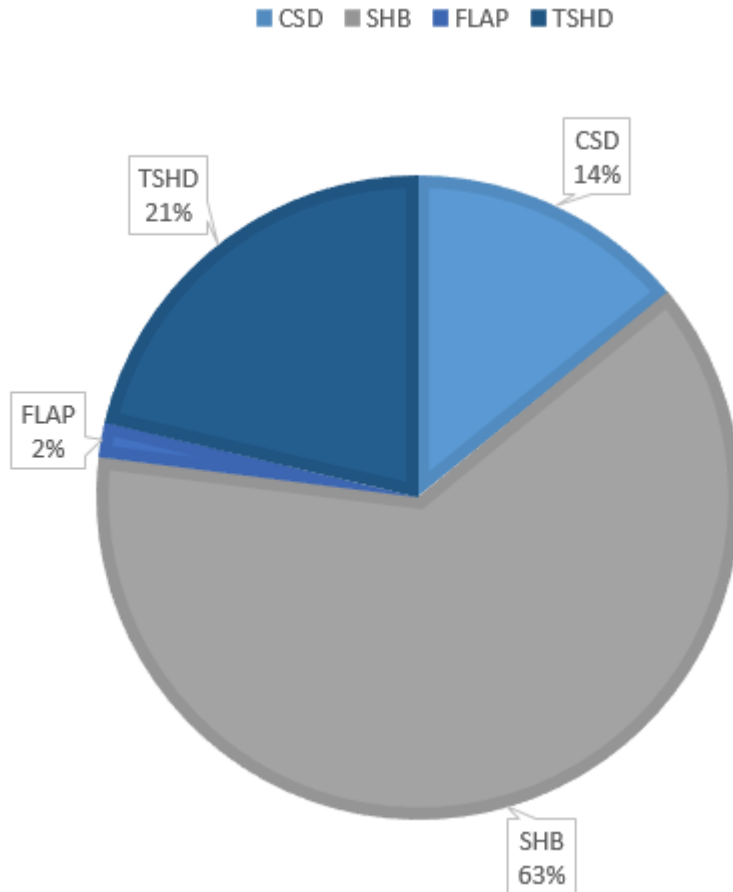
Energy flow	Reason
Transport with cars (execution)	Is monitored at corporate level and included in common parts
Transport with cars (crew)	Is monitored at corporate level and included in common parts
Air miles (crew)	Is monitored at corporate level and included in common parts

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## 1.2 CO<sub>2</sub> FOOTPRINT AND TRENDS


### 1.2.1 REFERENCE CO<sub>2</sub> FOOTPRINT

On the basis of the tender calculation, a reference CO<sub>2</sub> footprint was drawn up:



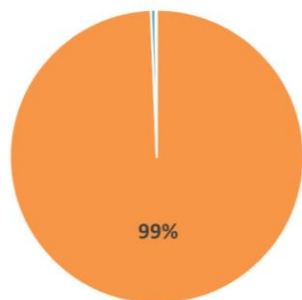
### 1.2.2 ACTUAL CO<sub>2</sub> FOOTPRINT OF PROJECT

The dredging campaign for the first lease year has already started on 22 November 2019 and will be reported on in full in the next half-yearly publication (August 2020).

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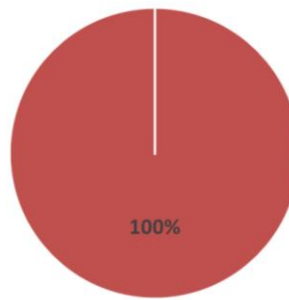
### 1.2.3 COMPARISON EMISSION PROFILE ORGANISATION – PROJECT

Emissieprofiel Bagger BENELUX



- Brandstof schepen [Scope 1]
- Airmiles [Scope 2]
- Elektriciteit [Scope 2]
- Pendel [Scope 3]
- Taxi [Scope 3]

Emissieprofiel Project Nieuwpoort



- Brandstof schepen [Scope 1]
- Airmiles [Scope 2]
- Elektriciteit [Scope 2]
- Pendel [Scope 3]
- Taxi [Scope 3]


Emission profile Dredging Benelux

- Fuel of vessels (Scope 1)
- Electricity (Scope 2)
- Cabs (Scope 3)
- Air miles (Scope 2)
- Commuting (Scope 3)

Emission profile Project Nieuwpoort

The energy/emission profile of this project does not deviate from the emission profile at corporate level for the dredging department Benelux.

The main energy flows within this project are related to the emission of 'wet' equipment, i.e. vessels.


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## 2 REDUCTION

### 2.1 LIST OF REDUCTION MEASURES FOR THIS PROJECT

ID	Title	Concrete optimisation
0113-1	Choice of vessel	The energy efficiency of vessels that might be used is checked during the tender process. This is weighed up against the mobilisation distance.
0113-2	CSD: Judicious use of engines	The cutter suction dredger is powered by a diesel engine that directly drives the dredge pump and an auxiliary generator. When the dredging process is interrupted (removing dirt from the pump, waiting for barges...), the engine is switched off. In between dredging processes (waiting for barges) and in bad weather, the cutter is – if possible – moored alongside the floating infrastructure and the quayside power supply (fuel consumption = 0) is switched on.
0113-3	FLAP ('Floating auxiliary plant'): judicious use of engines	When moored while on stand-by, the engine is turned off as much as possible. No unnecessary running of engines, for instance for air conditioning/heating.  For transports, priority is always given to the vlet boat with the lowest emissions and the lowest power consumption.
0113-4	Barges: judicious use of engines	In between dredging processes (waiting for other split barge that is being loaded) and in bad weather, the split barge is – if possible – moored alongside the sand quay or anchored beyond the project site. When moored against the loading pontoon, the engines are switched off: no needless use of screws for staying in position.
0113-5	Optimisation of planning of works	By planning trench dredging works immediately prior to the cutter works, barges with a larger draught can sail to the dumpsite. This means that more dredged material is transported per cycle, which reduces the CO <sub>2</sub> emission per m <sup>3</sup> of dredged material.
0113-6	Optimisation of works according to tides	The shipping route to the dumpsite is shorter at high tide than at low tide. The journeys to the dumpsite are therefore made as much as possible during high tide, sand journeys at low tide.
0113-7	Electrification	We've ordered a study into the possibility of running the barges on electric energy.

Source: List of measures Jan De Nul

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## 2.2 PROJECT-SPECIFIC APPLICATION OF MEASURES


The above measures were applied in this project as follows:

ID	Concrete application
0113-1	TSHD Pinta passed the project site during a mobilisation to another project, maintenance of navigation channel was scheduled according to this passage.
0113-2 0113-3	An agreement was concluded with the yacht club "VYN" to use quayside electricity from the yacht pontoons. This means that the generators on board of DN59 and Hendrik Geeraert do not have to run for heating/air conditioning. The yacht club is certified as energy neutral and supplies 100% green energy.
0113-5	TSHD Pinta ended the maintenance dredging works in the navigation channel on 02/12/19, the maintenance dredging works in the marinas started on 03/12/19. This enabled us to maximise the loading of the SHB as from day one.
0113-6	A tool has been developed to help the SHB crew determine the optimal load as a function of the current tide.

## 2.3 OTHER MEASURES ONLY APPLICABLE TO THIS SPECIFIC PROJECT

- Biofuel will be bunkered in the fuel tanks and the trailing suction hopper dredger
- Optimisation of the length of the floating pipelines in order to reduce the required motor power;
- Adjusting (lowering) of navigation speed as a function of the optimal split hopper barge cycle: no unnecessary navigation when we would then have to wait for the other SHB to have been loaded;
- Planning to replace the existing, outdated construction site shed by an energy-efficient shed.

The reduction measures that have so far only been specific to this project will be added to the cross-departmental list of measures for Jan De Nul. In this way, they will be considered for all upcoming projects (with award advantage).

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### 3 TRANSPARENCY

For the communication on our CO<sub>2</sub> performance for the entire Benelux, we refer to the cross-departmental communication plan <<CO<sub>2</sub>PL-Jan De Nul-3C2 – Communication plan >>.

Specifically for this project, we will also communicate on the CO<sub>2</sub> performance, both internally and externally. The form of communication, stakeholders, parties responsible and frequencies are summarised in the tables below.


#### 3.1 INTERNALLY:

Form of communication	Stakeholders	Party responsible	Frequency
Project introduction	Crew	Employee performing the task	At the start of each campaign
Toolbox meetings	Crew	Employee performing the task	Monthly
Monthly report	On-site project team	Employee performing the task	Monthly
BNL project meeting	Project team BNL	Employee performing the task	Half-yearly
Feedback in steering committee	Steering group BNL BAGGER	Project Manager	Monthly

#### 3.2 EXTERNALLY:

Form of communication	Stakeholders	Party responsible	Frequency
Project reporting per lease year	Client	Project Manager	Annually
Publication of this project report on the JDN website	Interested stakeholders	Energy & Emissions QHSSE Advisor	Half-yearly
Posting by means of banners & Heras information panels on the project site in the marinas	Interested stakeholders	Employee performing the task	Continuously
Social media: LinkedIn, Instagram, Facebook **	Interested stakeholders	Head of department	ca. 2x/year



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\* Note: Half-yearly frequency is maintained as long as activities can be reported on. If no activities take place in a semester, no reporting will be done.