

Management Statement (MS) on reducing emissions in our dredging contracts

Parties



The undersigned parties

1. Rijkswaterstaat (The Netherlands)
2. Port of Rotterdam (The Netherlands)
3. North Sea Port (The Netherlands and Belgium)
4. Kystverket Norway (Norway)
5. Harwich Haven Authority (United Kingdom)
6. ..
- 7.

Agree to the following, invite our fellow clients in dredging industry to join us and declare:

Considerations

Our ambitions

1. It is necessary to reduce emissions in our dredging works.
2. Emissions of greenhouse gasses (CO₂eq), Nitrogen Oxides (NO_x), Sulphur Oxides (SO_x) and Particular Matter (PM₁₀) are most relevant for our business.
3. We strive for being climate neutral and for clean air.
4. In the long term we want to be climate neutral and have zero emission in our dredging works
5. In the short term we know there are challenges (technical, logistics and economic) but we can set minimum requirements.

Our starting point

6. Because our industry is an international market of multiple clients and few international suppliers, the following elements are key for the transition:
 - a. Cooperation,
 - b. Clarity
 - c. Consistency
7. We want to facilitate a solid base for return on investments and create a level playing field by cooperating. The level playing field is important:
 - a. To help our contractors to invest,
 - b. For clients it is also important to prevent a race to the lowest emissions at high prices, with the result of circulation of the newest vessels in the existing fleet, without entering new technologies.

Our procurement strategy

We collectively create and introduce minimum requirements per period of time for the emissions of the dredging vessels.

8. These minimum requirements will increase over time, step by step until we reach the needed standards in time.

9. All participating ports and authorities will implement the minimum requirements in their tenders and contracts, referring to the basic level of the growth path in appendix A and B.
10. All participants are free to make the requirements stricter than the minimum in special selected projects or works that ask for more (front runner projects).
11. Applying common award criteria ECI (in Dutch MKI) is also encouraged, all participants are free to apply this voluntarily. In appendix C the method is explained.

Our Data

12. We share our data and knowledge on the following issues to help the industry improve in reduction on emissions.
 - a. Implementing regulations and legislations on these emissions
 - b. Procurement instruments (for instance on requirements, award criteria, judging methods on the quality of tenders on these issues and emission calculations)
 - c. Share knowledge with the industry on the latest developments on technologies and energy carriers and its (dis)advantages and performances in dredging.
 - d. Initiate pilots with new technologies

Our conditions

13. Dredging works (production) must continue at all times (keeping the coast safe and channels and ports at depth).
14. Costs and risks must be bearable for the clients and the contractors together, distribution of costs and risks must be as clear as possible.
15. Ports and authorities have a key position in supporting the creation of bunker and charge infrastructure for the maritime industry. We will work in cooperation with the dredging companies to ensure bunker and charge infrastructure created is available and suitable for dredging vessels.
16. Boundary conditions: IMO-policy, EU legislation, fit for 55, ETS, EU-fuel maritime, Renewable Energy Directives and other relevant legislation, such as Tender Laws and so on.

Our Growth Paths

17. There are two paths set out in the Appendices for a basic requirement for improvement in emissions and a more ambitious requirement. These paths are split between dredging equipment for inland areas and for seagoing equipment.
18. Participants are able to choose their own pathways in any combination from those shown.

Appendix A:

- Basic level inland equipment
- Ambition level inland equipment

Appendix B:

- Basic level seagoing dredging equipment
- Ambition level seagoing dredging equipment

Appendix C: Environmental Cost Indicator (ECI)

- Summary of the application and the use of ECI.

Appendix D: Glossary

Some relevant terms and hyperlinks.

Appendix A Inland dredging equipment

A1: Basic level inland dredging equipment

Fairway maintenance freshwater/construction Basic level Rijkswaterstaat - Provinces - Municipalities - Water boards					
Vessel type		Period 1 2022 through to 2024	Period 2 2025 through to 2027	Period 3 2028 through to 2029	Period 4 From 2030
Barge, tug, push and sounding vessels, silt pushers, survey vessels, small cutter suction dredgers** other small waterborne dredging equipment	Engines →	No requirement	No requirement	Minimum emissions in accordance with CCR II*	Minimum emissions in accordance with CCR II*
	Energy carriers →	At least 20% renewable energy carriers	At least 35% renewable energy carriers	At least 60% renewable energy carriers	At least 75% renewable energy carriers
"Crane vessel, cutter suction dredger, bucket suction dredgers, dry well hopper barges, piling barges, support vessels, hopper dredger"	Engines →	No requirement	No requirement	Minimum emissions in accordance with CCR II*	Minimum emissions in accordance with stage V (IWP-IWA)*
	Energy carriers →	At least 20% renewable energy carriers	At least 35% renewable energy carriers	At least 60% renewable energy carriers	At least 75% renewable energy carriers

* Certified CCR I to stage V (IWP-IWA) inclusive or retrofit compliant with the emission standards in accordance with CCRI to stage V (IWP-IWA)

** Small cutter suction dredgers are suction dredgers deployed solely on zone 4 waters.





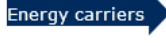

Explanatory note 1: Non-installed mobile equipment on vessels falls under the transition path road, dike and rail equipment (WDSM)

Explanatory note 2: xy% renewable energy carriers: at least xy% renewable energy carriers in accordance with RED in the contract portfolio of the client

Explanatory note 3: Emission class standards relate to the weighted average of the installed capacity on the vessel as a whole, including all main, auxiliary and work engines.

Explanatory note 4: For classification of renewable energy carriers, see section 4.1.2. of the roadmap

A2: Ambition level inland dredging equipment

Fairway maintenance freshwater/construction Ambition level Rijkswaterstaat - Provinces - Municipalities - Water boards					
Vessel type		Period 1 2022 through to 2024	Period 2 2025 through to 2027	Period 3 2028 through to 2029	Period 4 From 2030
Barge carrier, tug, lighter and sounding vessels, weed cutters, survey vessels, small cutter suction dredgers** other small floating plant and equipment		No requirement	Ambition 10% emissions in accordance with stage V (IWP-IWA-NRE)*	Ambition 40% emissions in accordance with stage V (IWP-IWA-NRE)*	Ambition 70% emissions in accordance with stage V (IWP-IWA-NRE)*
		Ambition 20% biofuels	Ambition 40% biofuels	Ambition 60% biofuels	Ambition 85% biofuels
		Ambition 1% RFNBOs or HE	Ambition 2% RFNBOs or RE	Ambition 5% RFNBOs or RE	Ambition 15% RFNBOs or RE
"Crane vessel, cutter suction hopper, suction bucket dredgers, hopper barges, flush-decked piling barges, support vessels, hopper dredger"		No requirement	Ambition 25% emissions in accordance with stage V (IWP-IWA-NRE)*	Ambition 60% emissions in accordance with stage V (IWP-IWA-NRE)*	Ambition 100% emissions in accordance with stage V (IWP-IWA-NRE)*
		Ambition 20% biofuels	Ambition 40% biofuels	Ambition 60% biofuels	Ambition 85% biofuels
		Ambition 1% RFNBOs or HE	Ambition 2% RFNBOs or RE	Ambition 5% RFNBOs or RE	Ambition 15% RFNBOs or RE

* Certified CCR I to stage V (IWP-IWA) inclusive or retrofit compliant with the emission standards in accordance with CCRI to stage V (IWP-IWA)

** Small cutter suction dredgers are suction dredgers deployed solely on zone 4 waters.

Explanatory note 1: Non-installed mobile equipment on vessels falls under the transition path road, dike and rail equipment (WDSM)

Explanatory note 2: xy% renewable energy carriers: at least xy% renewable energy carriers in accordance with RED in the contract portfolio of the client



Explanatory note 3: Emission class standards relate to the weighted average of the installed capacity on the vessel as a whole, including all main, auxiliary and work engines.

Explanatory note 4: For classification of renewable energy carriers, see section 4.1.2. of the roadmap

Explanatory note 5: RE stands for renewable electricity & RFNBOs stands for renewable fuels of non-biological origin

Appendix B Seagoing dredging equipment

B1: Basic level seagoing dredging equipment

Coastline and saltwater fairway maintenance (seagoing dredging equipment) - Basic level Rijkswaterstaat - Port Authority					
Vessel type		Period 1 2022 through to 2024	Period 2 2025 through to 2027	Period 3 2028 through to 2029	Period 4 From 2030
"Trailing suction hopper dredgers crane vessel cutter suction dredger hopper dredger water injection dredger"	 Engines	Minimum emissions in compliance with Tier class I ^{*/**}	Minimum emissions in compliance with Tier class I ^{*/**}	Minimum emissions in compliance with Tier class II ^{*/**}	Minimum emissions in compliance with Tier class III ^{*/**}
	 Energy carriers	At least 10% renewable energy carriers	At least 20% renewable energy carriers	At least 40% renewable energy carriers	At least 60% renewable energy carriers

* Certified tier I to III or retrofit compliant with emission standards in compliance with Tier I to III

** With the exception of vessels with a hopper capacity >15,000 m³ that can be demonstrated necessary for performance of the work




Explanatory note 1: Non-installed mobile equipment on vessels falls under the transition path road, dike and rail equipment (WDSM)

Explanatory note 2: xy% renewable energy carriers: at least xy% renewable energy carriers in accordance with RED in the contract portfolio of the client

Explanatory note 3: Emission class standards relate to the weighted average of the installed capacity on the vessel as a whole, including all main, auxiliary and work engines.

Explanatory note 4: For classification of renewable energy carriers, see section 4.1.2. of the roadmap

B2: Ambition level seagoing dredging equipment

Coastline and saltwater fairway maintenance (seagoing dredging equipment) - Ambition Rijkswaterstaat - Port Authority					
Vessel type		Period 1 2022 through to 2024	Period 2 2025 through to 2027	Period 3 2028 through to 2029	Period 4 From 2030
"Trailing suction hopper dredgers crane vessel cutter suction dredger hopper dredger water injection dredger"		Ambition 20% Tier class III*	Ambition 50% Tier class III*	Emissions in accordance with Tier class III*	Emissions in accordance with Tier class III*
		Ambition 20% biofuels	Ambition 40% biofuels	Ambition 60% biofuels	Ambition 90% biofuels
		Ambition 1% RFNBOs or RE	Ambition 2% RFNBOs or RE	Ambition 5% RFNBOs or RE	Ambition 15% RFNBOs or RE

* Certified Tier I to III or retrofit compliant with the emission standards in accordance with Tier I to III

Explanatory note 1: Non-installed mobile equipment on vessels falls under the transition path road, dike and rail equipment (WDSM)

Explanatory note 2: xy% renewable energy carriers: at least xy% renewable energy carriers in accordance with RED in the contract portfolio of the client

Explanatory note 3: Emission class standards relate to the weighted average of the installed capacity on the vessel as a whole, including all main, auxiliary and work engines.

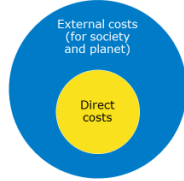
Explanatory note 4: For classification of renewable energy carriers, see section 4.1.2. of the roadmap

Explanatory note 5: RE stands for renewable electricity & RFNBOs stands for renewable fuels of non-biological origin

Appendix C: Using the award criteria environmental cost index (ECI, in Dutch known as MKI)

In procurement: MKI/ECI

- MKI= Environmental Cost Indicator
- Quantitative comparison
- 11 environmental effects
- With standard weighting
- Shadow pricing



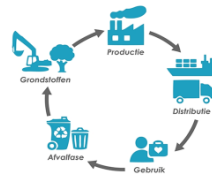
What is ECI?



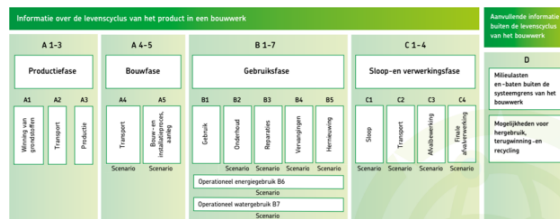
Quantity	Unit	Method	Instrument	bookkeeping
Length	meter	Measure	Ruler	notepad
ECI	Euro	LCA (Life Cycle Analysis)	LCA-software	DuboCalc

Basic MKI/ECI: Life Cycle Analysis

- Emissions entire life cycle
- Across borders (international)
- Effect on People, Nature, Environment



Entire life cycle: 4 modules

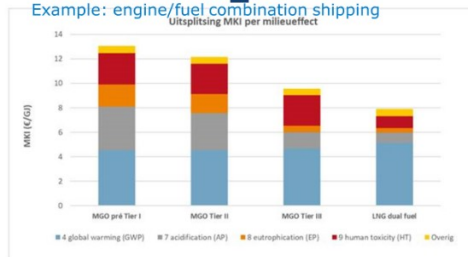


Environmental performance: 'MKI' Environmental Cost Indicator

Under construction (periodically)

Environmental Impact categories	Equivalent unit	Weighting factor [€ / kg equivalent]
Depletion of abiotic resources (excluding fossil energy)-ADP	Sb eq	€ 0,16
Depletion of Fossil resources -ADP	Sb eq ²	€ 0,16
Climate change -GWP	CO ₂ eq	€ 0,05
Ozone layer depletion -ODP	CFK-11 eq	€ 30
Photochemical ex.form. POCP	C ₂ H ₄ eq	€ 2
Acidification AP	SO ₂ eq	€ 4
Eutrophication EP	PO ₄ eq	€ 9
Human toxicity HTP	1,4-DCB eq	€ 0,09
Fresh water toxicity FAETP	1,4-DCB eq	€ 0,03
Marine eco toxicity - MAETP	1,4-DCB eq	€ 0,0001
Terrestrial eco toxicity TETP	1,4-DCB eq	€ 0,06

Example: engine/fuel combination shipping



Use of MKI/ECI: quality award criterium

- Rijkswaterstaat uses 3 methods for awarding based on ECI/MKI:

1. Fixed maximum and minimum value (ranking based on price minus MKI/ECI-discount)
2. Fixed maximum and flexible minimum value (ranking based on prices minus MKI/ECI discount)
3. **ECI -value (with a multiplier) as "price" ; ranking based on sum of price and MKI/ECI-value.**

Appendix D Glossary

TIER I - III: Different levels of NO_x-control given by the IMO: [Nitrogen Oxides \(NO_x\) – Regulation 13 \(imo.org\)](#)

STAGE I - V: emission regulation level of the EU for non-road engines:
Regulation (EU) 2016/1628 of the European Parliament and of the Council of 14 September 2016 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC (Text with EEA relevance): [Regulation - 2016/1628 - EN - EUR-Lex \(europa.eu\)](#)

RED: Renewable Energy Directive of the European Union [Renewable energy directive \(europa.eu\)](#)

Renewable energy carriers: energy carriers according to the Renewable Energy Directive (RED), European directive renewable energy:

- Biofuels from residual and waste streams without processing by advanced technology (RED Annex IXb);
- Biofuels from residual and waste streams processed by advanced technology (RED Annex IXa);
- Conventional biofuels from food and feed crops;
- Renewable Fuels of Non Biological Origin (RFNBO);
- Renewable electricity (RE).

ECI: Environmental Cost Indicator