JAN DE NUL

SUSTAINABILITY IN PORT CONSTRUCTION

Intermodal Africa 2026 - Djibouti

WORLD BUILDERS

WATER

From developing the world’s most vital waterways to protecting our delicate shores.

LAND

From carrying out ingenious construction projects to breathing new life into contaminated sites.

ENERGY

From connecting national energy grids to building large-scale offshore wind farms.

OUR EXPERTISE

Offshore Energy

We contribute to the energy transition with offshore infrastructure for renewable energy.

Dredging Solutions

We focus on nature-inclusive solutions to build future-proof harbours and protect our coastlines in a changing world.

Construction Projects

We design and construct buildings and mobility infrastructure with innovative and sustainable techniques.

Planet Redevelopment

We offer circular solutions to redevelop polluted sites to create new space for the next generations.

DREDGING SOLUTIONS

We focus on nature-inclusive solutions to build future-proof ports and protect our coastlines in a changing world.

Our expertise

Future-proof ports

We modernise and expand existing ports or build new ones from scratch.

Clean and safe waterways

We maintain, deepen or widen waterways.

Land reclamation

We create new beaches and develop new land.

Reinforced and extended coastlines

We maintain coastlines and install protective structures to prevent flooding and erosion.

SUSTAINABILITY GREEN PORTS

WHY?

As a global leader on water, land and energy, our projects tend to have a global impact. The goal of our sustainability program is to make sure this impact is a **positive one.**

TO IMPROVE THE QUALITY OF LIFE

There is a global fear for a decline in our quality of life. We have the ambition to improve this for the next generations, tackling some of the greatest challenges of our time:

- We fight climate change by building the transition to renewable energy.
- We protect our shores against the rising sea.
- We clean up soil polluted by chemicals like PFAS.
- We create smooth mobility and the buildings of tomorrow.

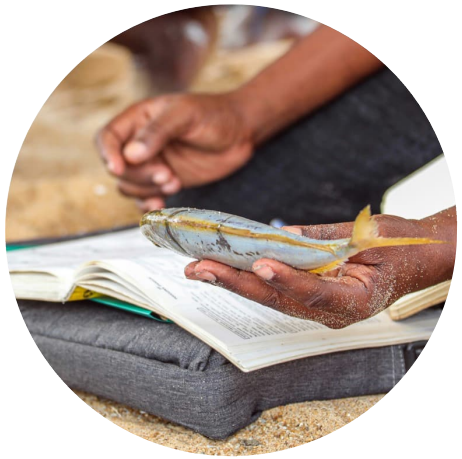
And so much more...

OUR SUSTAINABLE WAY FORWARD

IN PORT CONSTRUCTION

Minimise emissions

We drive the transition to renewable energy and commit to reducing our greenhouse gas emissions by 40% by 2035.



Boost biodiversity

We protect biodiversity in our activities and look for opportunities to create or enrich ecosystems.

Think circular

We remediate contaminated soil, give new purpose to polluted sites and increase the use of recycled materials in our projects.

MINIMISE EMISSIONS

BOOST BIODIVERSITY

THINK CIRCULAR

MINIMISE EMISSIONS

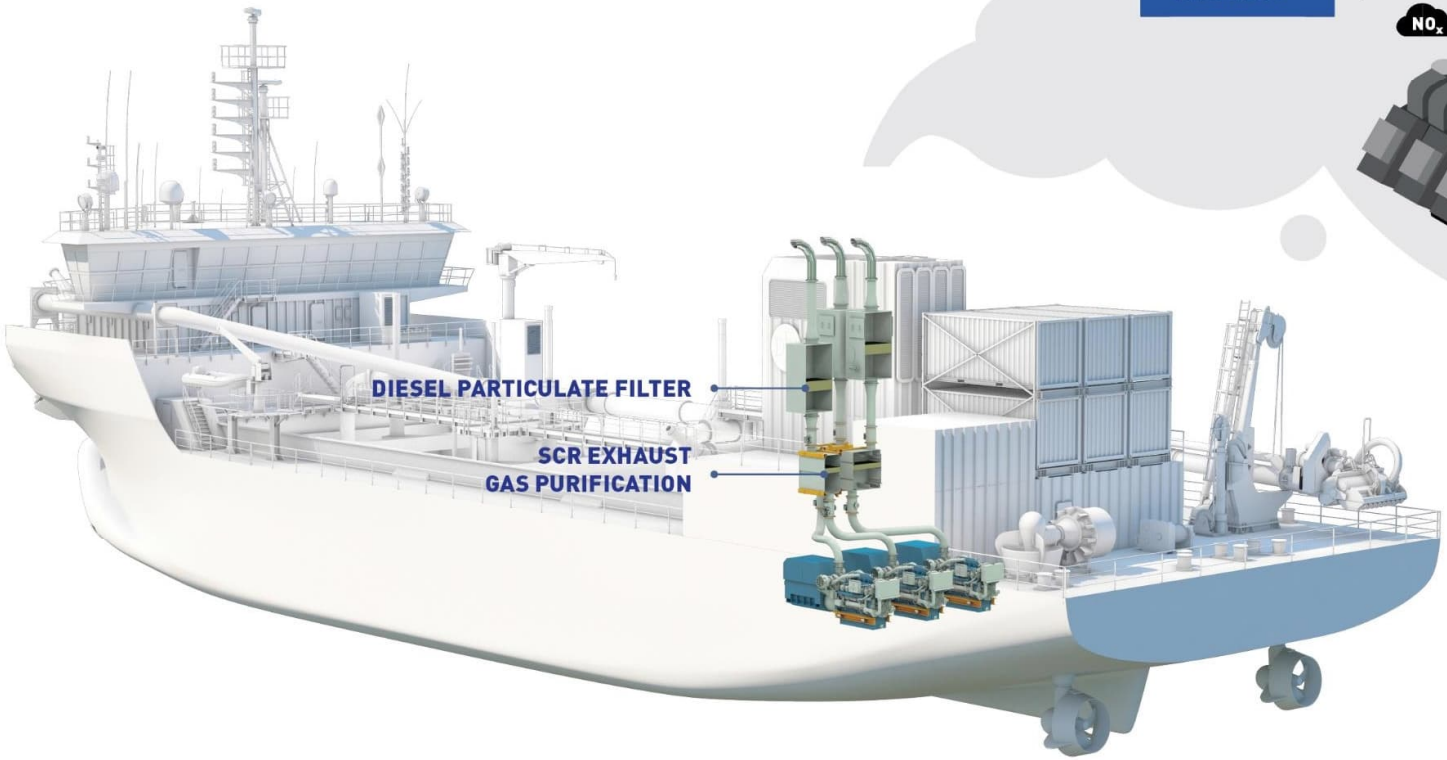
HOW TO REDUCE?

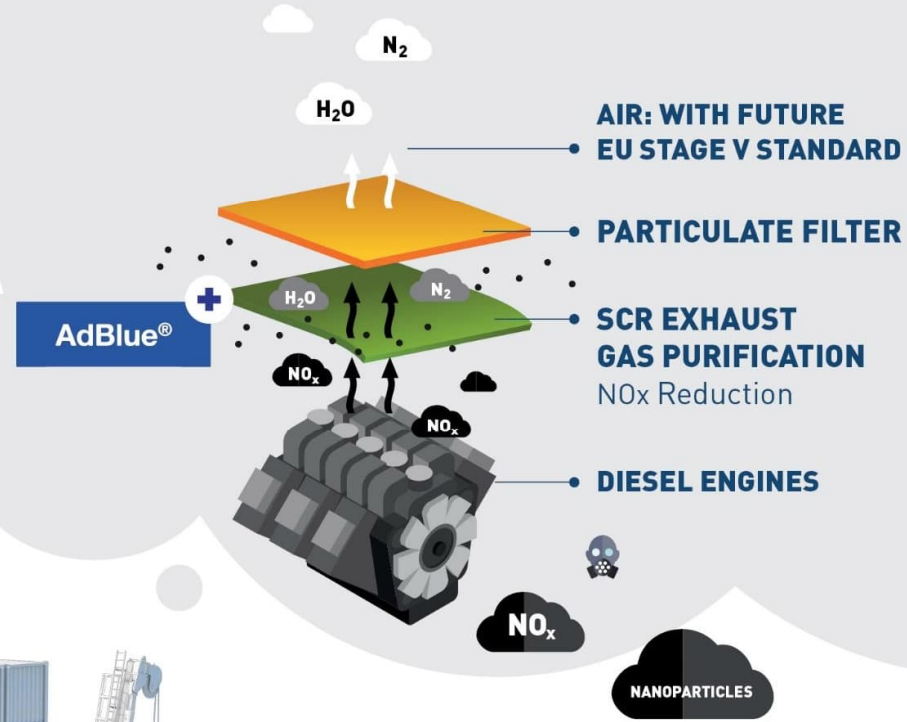
1. Energy efficiency
2. Exhaust Filter Systems (e.g. ULEV)
3. Renewable low carbon fuels
   - Biofuel
   - (Green) Methanol
   - (Green) Ammonia
4. Green electricity – Locally produced solar/wind
5. Electrification of vessels and equipment

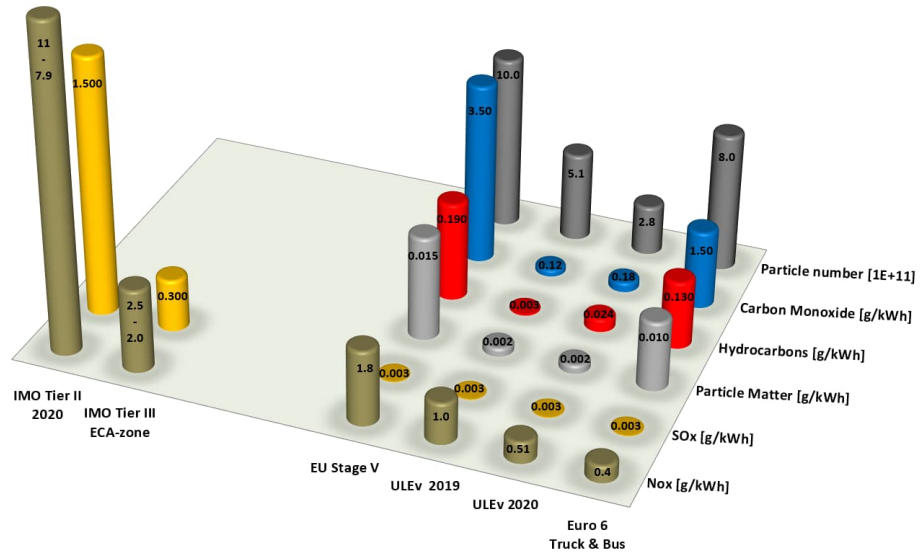
CLIENTS/PORT AUTHORITIES TO PROVIDE INCENTIVES FOR OPERATORS AND CONTRATORS

ULEv

ULTRA-LOW EMISSION







Plug-in hybrid dredger
2,000 m^3 TSHD
Ordered in June 2024

This DC hybrid plug-in vessel has a very low ecological footprint.

It is equipped with ULEv-technology (Ultra Low Emission vessel) and a EURO 6 engine that can run on biofuel.

It is tailor-made to perform in small ports in densely populated areas, agile and flexible, silent and low in emissions.

Design of the deck battery (+/- 10 MWh) and supporting systems is ongoing.

Will be able to operate a full working day on batteries alone.

Electrically powered bulldozer

2022/2023

Caterpillar D6 XE

It complies with the strictest and most recent emission standards in Europe, the Stage V standards.

25% CO_2 reduction

Hybrid sieving machine

Titan 1800 hybride

Used for screening contaminated soil (up to 700 tones per hour), semi-mobile design

20-40% CO_2 reduction

Telescopic crane with electric battery

2023/2024

Sennebogen are balance cranes (they consume less fuel). The block at the back provides counterweight, making the crane's engine a lot lighter

No on-site CO_2 emissions

All-electric excavator

Volvo JEC230 Electric

First time that an all-electric excavator of this type is used on Belgian construction sites

Total lifetime emissions 80% lower than diesel machines

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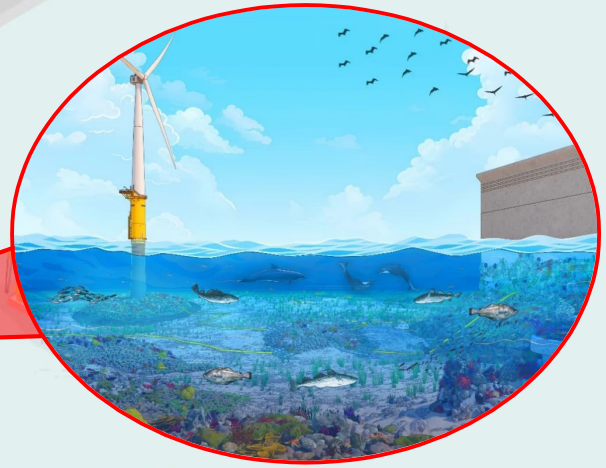
Nature-Based Solutions (NbS)

Nature = construction asset

e.g. Mangrove restoration



Nature-Inclusive Design (NID)

e.g. offshore wind farms = artificial reefs

Active restoration

e.g. coral transplantation, oyster reefs

AQUA FOREST

BLUEPRINT FOR
MANGROVE RESTORATION

NATURE BASED SOLUTIONS

FROM DREDGED SEDIMENTS TO MANGROVE: A CIRCULAR REUSE APPROACH

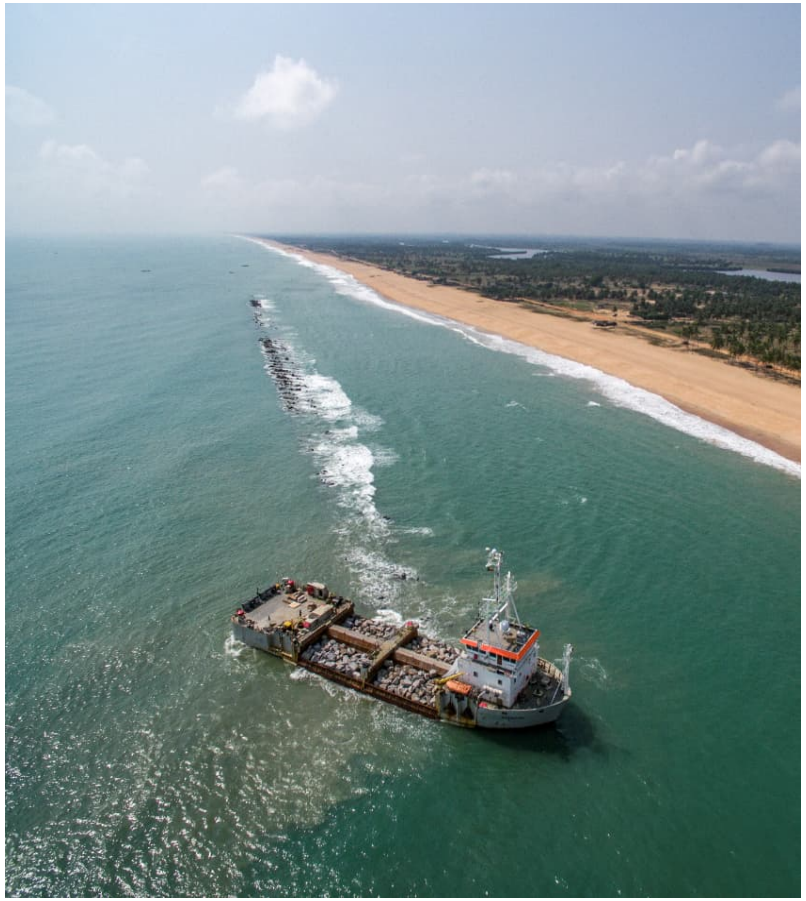
Pilot for new **Nature-based-Solutions**, targeting climate actions for mitigation and adaptation in the **Guayas River delta in Ecuador**.

Benin Nature-inspired Breakwater
Innovative Coastal Protection

- Artisanal fishing community & Local research institute

- Interviews with fishermen
  - ➢ Their perception?
  - ➢ Their observations?

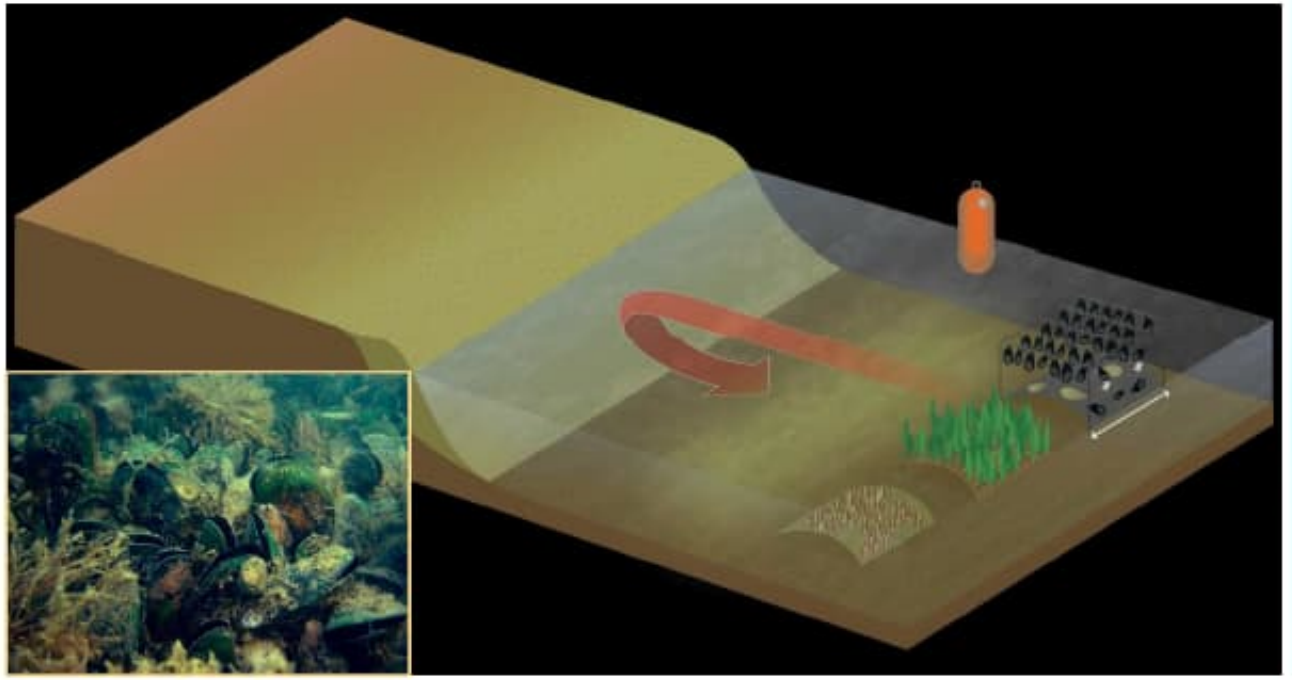
- Nature-inspired breakwater
  → positive contributor



Coastbusters

Coastal protection systems that work with nature

Marine Flora Reef (seaweed / seagrass)
Lanice Reef (sand building tube worms)
Bivalve Reef (oyster/mussel reefs) .



MINIMISE EMISSIONS

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THINK CIRCULAR

THINK CIRCULAR

Worldwide **cement and concrete** production generate as much as **9%** of all human CO_2 emissions.

KEY RESOURCES OF PORT CONSTRUCTION

- FUEL
- STEEL
- CEMENT
- ROCK

We aim to increase the **non-virgin** inflow of our key resources:

REDUCE	REUSE	RECYCLE
- Steel	- Steel	- Steel
- Cement	- Soil	- Cement
- Cement-like mixtures	- Rocks	- Cement-like mixtures
- Bricks	- Glass	- Glass
	- Wood	- Wood
	- Granulates	- Copper

2GW: We use recycled copper

Together with our partners and client, we decided to use HVDC cables that contain no less than 68% recycled copper, instead of the required 25%. A first in this industry. For a total route length of 1198 kilometres, this has an enormous impact on reducing our emissions and the extraction of new materials.

We use recycled aggregates in concrete.

In February 2024, we launched a pilot in Antwerp using up to 55% recycled aggregates in concrete — more than double the typical 25%. The goal is to test how this mix can be processed.

We started a project to recycle glass.

In Kortrijk, Belgium, we launched a pilot project to process different types of glass with an equivalent product as end result.

This saved us 3.52 tonnes in CO_2 emissions and 6.03 tonnes in raw materials.


AS A TEAM OF WORLD BUILDERS,
WE REALISE THE THINGS
WE DREAM OF AS INDIVIDUALS.

JAN DE NUL