



Working at the PORT OF OOSTENDE
September 2019

1 WHAT IS THE ADDED VALUE OF THE PORT OF OOSTENDE FOR ITS CITIZENS AND THE REGION ?

Activities at the port of Oostende

- 1. Outer port: RoRo and Cruises**
- 2. Outer port: Offshore and blue industry**
- 3. Outer and inner port: bulk transport**
- 4. Inner port: circular economy**



Building of offshore wind farms

Phase 1 = 2,2 GigaW = 450 windmills = 900 permanent jobs



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Offshore training

Falck Safety Services - HEWITT



INNER PORT

Channel Oostende - Brugge – AIM Recycling



chemical site Proviron and GFS



Wave and towing tank



research infrastructure : seaside

2019: construction of test infrastructure at sea (monopile -Blue accelerator) – first test : NEMOS wave energy converter



European cooperation : projects

ISHY : implementation of hydrogen fueling - Hydroville



2. DUAL Ports – interreg VB North Sea

1. Facts – what is DUAL PORTS
2. Objectives
3. Actions

Interreg



EUROPEAN UNION

North Sea Region

DUAL Ports

European Regional Development Fund



1. Facts about Dual Ports

Facts about Dual Ports

What is Dual Ports

DUAL PORTS is a transnational cooperation project within the North SEA region, focusing on the decarbonisation of SME Ports, by introducing :

- New products
 - New services and processes
 - New concepts of port management
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- Budget: 8.6m euro
 - The participating ports and local authorities are expected to implement initiatives that will reduce carbon emissions and reduce costs
 - The Port of Oostende is Project Leader of DUAL Ports
 - Business Vordingborg is responsible for the communication
- * Duration : December 2015 - December 2021

Facts about Dual Ports

Project Partners

Original phase

- Port of Oostende - LEAD PARTNER
- Business Vordingborg - COMMUNICATION
- Port of Vordingborg
- Port of Skagen
- Orkney Islands Council Marine Services
- ITM Power
- Fair Winds Trust
- Niedersachsen Ports GmbH & Co. KG Branch Emden
- Port of Zwolle
- Hamburgisches Welt-Wirtschaftsinstitut (HWWI)

Facts about Dual Ports

Project Partners

Extension

- Port of Hvide Sande
- Hvide Sande Fjernvarme A.m.b.A.
- Laminaria BVBA
- Uppsala University
- Celtic Cruises Ltd
- Seabased

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2. Objectives of DUAL Ports

Objectives of Dual Ports

Overall aim and objectives

What is the overall aim of DUAL Ports?

DUAL Ports aims to decarbonise SME Entrepreneurial Ports through a shared eco-innovation port programme that minimises their environmental footprint and to reduce the operational costs

The objective of DUAL Ports is to

- reduce the environmental footprint of regional entrepreneurial ports,
- improve the sustainability of the operational and administration resources in the ports
- promote responsible growth and supporting eco-innovation oriented development.

Low carbon port management is the core of the cooperation project

In concrete terms, all partners together will:

- **Reduce carbon emissions with 12%**
- **Reduce costs with 20%**

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3. Actions of Dual Ports

Actions within Dual Ports

1 . HYDROGEN - use in ports and connected areas



The hydrogen pilot

Objective : investigate the opportunity to use hydrogen as an alternative energy carrier for shipping

Aim: To utilize the expertise in the refueling of hydrogen cars and buses to the refueling of vessels in Orkney and beyond (only steam as exhaust, no CO2)

Link : Testing of hydrogen vessel Hydroville at port of Oostende and organization of the Hydrogen days

Extension : organisation of training module for fueling hydrogen ships



2 . HYDROGEN – training in fueling of hydrogen



Actions within Dual Ports

3. HEAT - optimizing renewable energy



Ports provide energy to city

Objective:

Optimising the rest-energy, produced by wind, sun and sea-based power by integrating it into the local heating system.

Aim: ports, playing an active role as provider of energy for the communities and cities



Actions within Dual Ports

4. WAVE - clean power and surplus energy



Objective:

Investigation of the opportunities of the installation of wave power for the production of energy for the energy needs for the port and the community

Aim:

Testing of different operations and installation of an exchanger in order to transmit energy to the consumers of green energy



Actions within Dual Ports

5. Sea Power and hydrogen



Wave and H2

Objective:

Presenting the potential of sea-based energy/wave energy to support the production of green hydrogen

Aim: testing of the Laminaria wave device at the Orkneys and feed the produced energy into the electrical grid.



6. SOIL – optimizing port extension by recycling



The Soil Pilot

Objective : expand the port of Vordingborg by using recycled products, such as fly ashes, concrete and excessive soil from major building projects in the municipality (building of new bridge

Aim: reduce the CO₂ footprint in the building process of the port of Vordingborg



7. SEDIMENTS - removing pollutants



Sediments : removing pollutants

Objective:

Investigate the opportunities for developing innovative, cost-effective and sustainable methods to remove pollutants in the sedimentation and cleaning them locally (including issues of sediment disposal, licensing, etc)

Aim:

Search for methods of local cost-effective and sustainable treatment of pollutants in maritime and environmentally sensitive areas (more than recycling for port construction – cfr soil)



8. SURFACE - absorbing and reducing greenhouse gases



terminal surface in ports

Objective:

Investigating the methods for producing cleaner air in ports and ports environment in a cost effective way

Aim:

Testing of prototype of asphalt in maritime conditions. The concerned asphalt takes NoX and SoX out of the air by the use of titaniumdioxide. The methodology has been tested in cities (in cooperation with Strabag), but never in ports. Skagen will use it as surface in their port expansion, fase 3



Actions within Dual Ports

9. SAILING CARGO



The sail pilot

Objective:

- create sail cargo hubs in small ports, giving local businesses and communities direct access to ethically transported goods and
- Investigating the opportunities for implementing new sailing technologies (new materials, etc) – link to hydrogen, etc

Aim: transport sustainably produced goods with a zero-emissions low-impact cargo sailing ship that can access goods where they are produced



10. SAIL CARGO TESTING - combining wind and hydrogen



The wind and H2 pilot

Objective:

- create sail cargo hubs in small ports, giving local businesses and communities direct access to ethically transported goods and
- Investigating the opportunities for implementing new sailing technologies (new materials, etc) – link to hydrogen, etc

Aim: transport sustainably produced goods with a zero-emissions low-impact cargo sailing ship that can access goods where they are produced



11 . Smart and security LED - Lighting in port areas

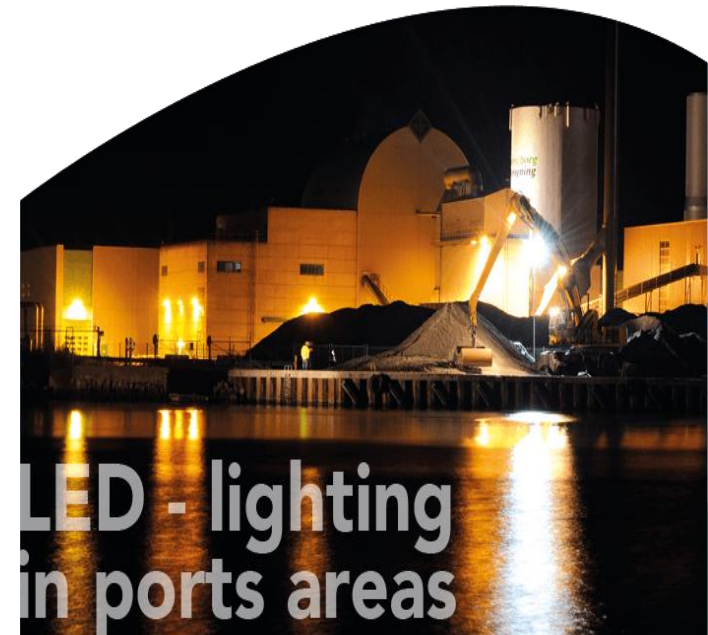


The LED pilot

Objective: Optimization of port area lighting to enhance safety and environmental footprint

Aim: To reduce carbon emissions, by installing, managing and monitoring a new intelligent and innovative lighting-system

Extension : implementing light programs and linking them to the developments of maritime IOT in order to guarantee more safety and security



12. DOCKLAND - green port strategy and industrial co-siting



The dockland pilot

Vision: To implement the concept of industrial co-siting, as recognized by the Flemish government within the green and cost effective port strategy : sharing resources, processes, services, construction works, energy provision and land is a key issue

Aim: To identify the legal, construction and pragmatic conditions required to establish co-siting in ports in relation to sector of the fine chemicals, renewable energy and circular economy or in relation to events like the BREXIT (bringing a major and extra flux of CO2 related traffic in the ports, due to long waiting times)



13. Low carbon harbour plan -Zwolle



The low carbon pilot

Objective : the 3 ports of Zwolle, Meppel and Kampen have merged in order to become more cost effective and carbon neutral from a management point of view

Aim: On basis of an indicative policy paper, an evaluation is made what actions in the areas of water, air and energy can be realised in the port to realise cost-effective sustainability

Future: LNG is out because of failing business case; choice for the construction of a battery pack station for supporting electrified inland barges



14. Battery storage Pack – multifuelling systems in ports -Zwolle



15. LNG - as a multifunctional part of REPs



The LNG Pilot

Vision: To provide an alternative to CFO heavy fuel sailing vessels by investigating the market and the business case for setting up LNG bunkering facilities within the framework of a port expansion. local production factories and potentially road transportation

Aim: To reduce the emission of CO₂ by investing an LNG Terminal at the ports and to organize an efficient LNG supply system for ships, in cooperation with the local industry and local energy providers



16. Green officer



The green officer

Objective : Green officer analyses different energy processes in the and around the port and make suggestions in order to reduce the carbon footprint and the cost of the concerned operations. This becomes the basis for sustainable management development ports

Aim: investigate the energy processes and operations in ports and initiate sustainability projects throughout the ports



The CBACA-Tool a result from DUAL Ports

* The Cost-Benefit Analysis (CBA) is an analytical tool for judging the economic advantages or disadvantages of an investment decision by assessing its costs and benefits in order to assess the welfare change attributable to it.

* The CBACA-Tool developed for DUAL Port is based on the idea of combining/comparing the green investment projects to conventional alternatives in order to:

- Verify whether its benefits outweigh the costs.
- Check whether certain goals are achieved.
- Provide a basis for comparing projects.



Tool within Dual Ports

CBACA TOOL



Indicators within Dual Ports

Role of European SME Ports in EU energy policy





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