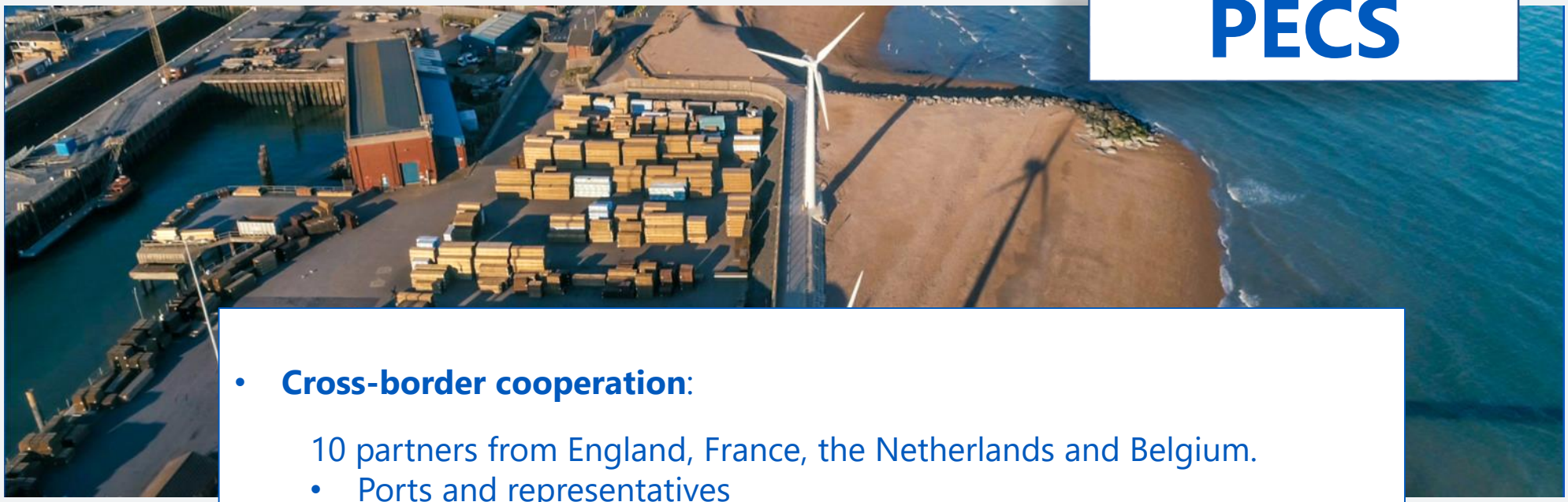
Ports Energy and Carbon Savings

Introduction to the PECS project

< Author > – < organisation >

PECS < type of event > - < location > – < dd/mm/yyyy >

PECS is an Interreg 2 Seas programme



- **Cross-border cooperation**:

  10 partners from England, France, the Netherlands and Belgium.
  - Ports and representatives
  - Knowledge institutions
  - Municipalities and agencies
  - Businesses

  + observer partners

- Total project **budget**: 8,07 M €
  - Including an ERDF budget of: 3,98 M €
  - Additional funding: Provinces South Holland and North Holland

Main stakeholders

Small and medium sized entrepreneurial (SME-)ports and marinas

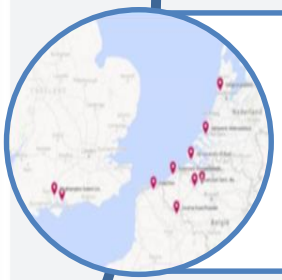
What is the project about?

Goals

Be a showcase for other small and medium sized enterpreneurial (SME-) ports and show feasibility of renewable energy in ports by introducing low carbon technologies in a cost-effective way

Common challenge

to achieve carbon reduction in ports through the introduction of innovative technologies



Cross-border cooperation

Partnership with variety of ports and circumstances, together with experienced knowledge institutes to test and validate models and methods and to implement and demonstrate new technologies

Outputs

Demonstrated methods and tools, innovative low carbon technologies and energy cooperations.

Outputs: in short

8 Demonstrated low-carbon technologies in SME-ports

4 Validated tools and methods to achieve carbon reduction

1 Demonstrated model of an energy cooperation structure

9 Feasibility studies of implemented low carbon technologies

low-carbon technologies in SME-ports

1 Medium sized wind turbine - Port of Oostende

The port of Oostende has installed a **medium-sized wind turbine** on the offshore area in the outer port, in order to **provide electricity** to the activities on the Rebo terminal and related areas and the Ostend Offshore village, which is expanding.

2 Smart LED-lights pontoon - Port of Oostende

A **smart pontoon**, including **lightpoles** with self-charging LED lights, **sensors** (water/air) and **smart cameras** will be developed and tested in different locations in the port of Oostende. It will also be integrated in the existing port community system to exchange data. This will improve **cost efficiency** and **overall safety** at the port.

low-carbon technologies in SME-ports

3 Linkspan - Port of Portsmouth

Portsmouth port installed a **new linkspan** which takes **more weight** and **operates more quickly**. This allows the ship to make her channel crossing slower allowing for **fuel savings** and **reduced carbon production**. This will result in far **fewer emissions.**

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4 Blue Power Synergy

Blue Power Synergy (BPS) will build and test a **24 meters long self-supporting energy pontoon** equipped with **wind and solar production**. A 250KWh **storage** is to be incorporated into this system. This installation will be tested in Oostende and in Hellevoetsluis over the project period.

low-carbon technologies in SME-ports

5 Six small wind turbines - Hellevoetsluis

6 small wind turbines at the ports of Koopvaardijhaven and Veerhaven will ensure that 10% of the energy consumption of the ports is produced in a sustainable way. The energy can be used directly for the **own energy consumption** of the harbour and for **public activities** like the dock and public lighting.

6 Solar panels - Hellevoetsluis

Heliushaven, which consists of three water sports clubs, has a very big outdoor area (dike and other areas) which is suitable for **sustainable energy production** by **outdoor solar panels**. The investment of 100 outdoor solar panels can generate 30.000 kWh per year, which is 10 % of the energy consumption.

low-carbon technologies in SME-ports

7 LEM-platform – Omgevingsdienst IJmond

A **local energy market (LEM) software platform** will be developed to ensure the **flexible distribution** (based on demand and generation) of local renewable energy, both automatically and manually. In this way, renewable energy is generated and managed nearby the point of demand in the port of IJmond.

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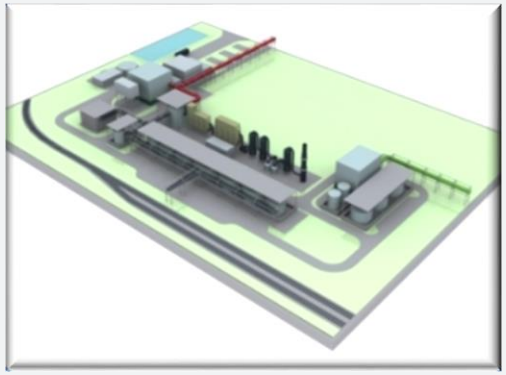
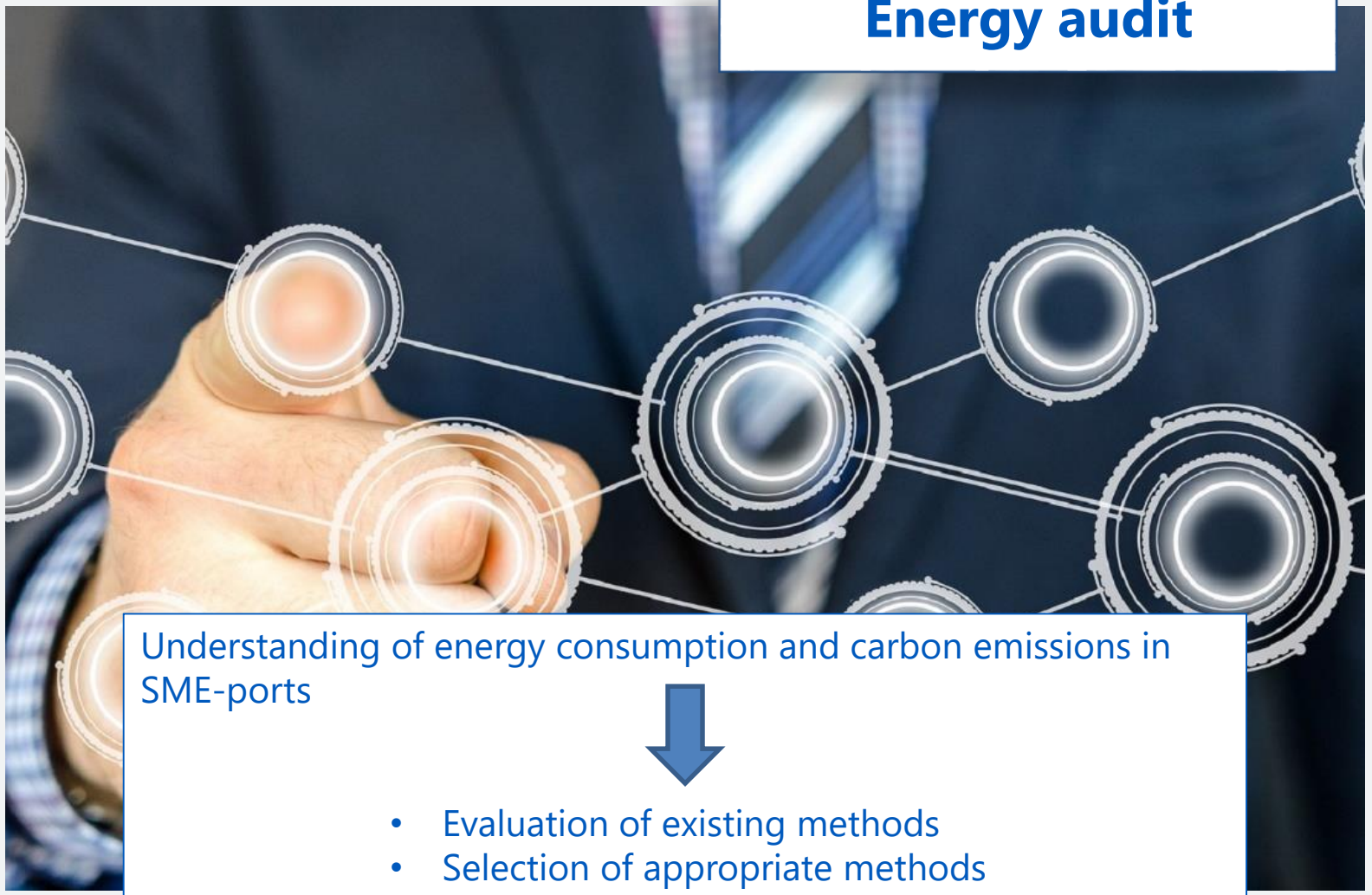
8 Waste recycling unit - IndaChlor



IndaChlor is building a **new treatment plant** at Dunkirk to **recycle chlorinated and production waste** in order to **recover chlorine (**hydrochloric acid), to be used in nearby businesses. The energy produced during IndaChlor's treatment process will be recycled through a **steam turbine** (1/5 into electricity, the remainder sold as heat).

Tools and methods to achieve carbon reduction

Energy audit

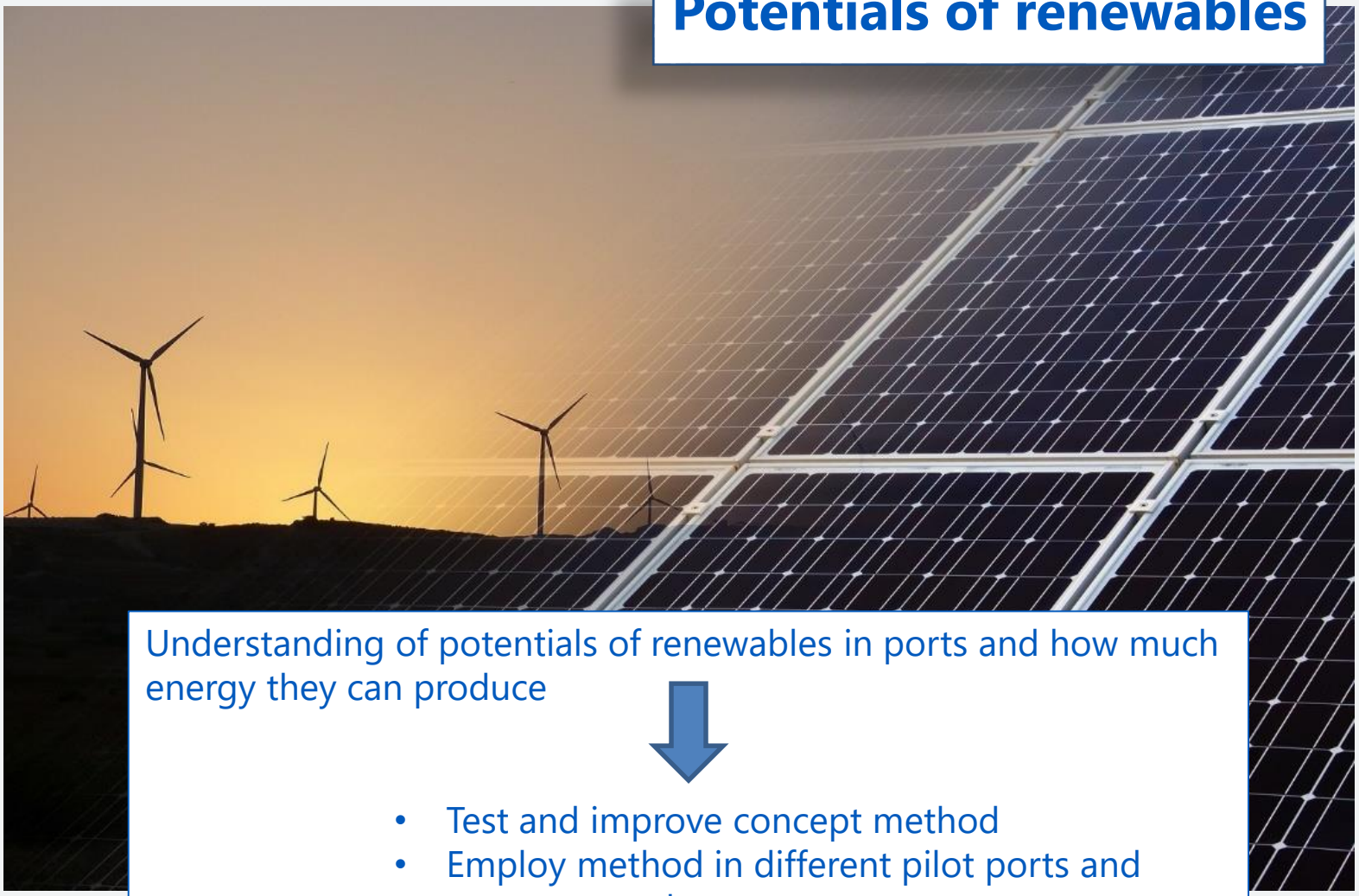


Understanding of energy consumption and carbon emissions in SME-ports

- Evaluation of existing methods
- Selection of appropriate methods
- Protocol and guidelines for carrying out energy audits
- Pilot testing

Tools and methods to achieve carbon reduction

Potentials of renewables

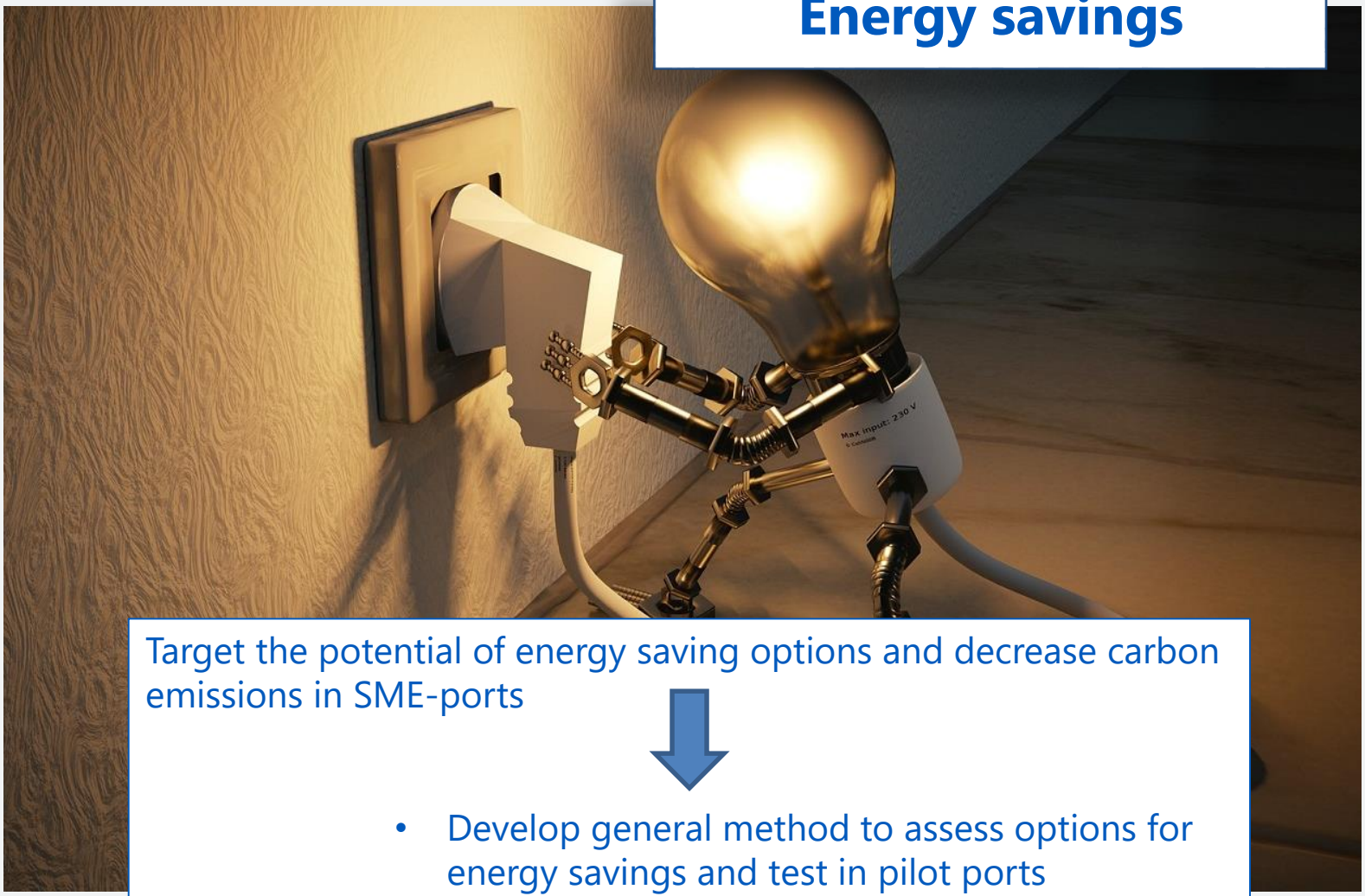


Understanding of potentials of renewables in ports and how much energy they can produce

- Test and improve concept method
- Employ method in different pilot ports and compare results
- Guideline and formats for all ports in 2 Seas area

Tools and methods to achieve carbon reduction

Energy savings



Target the potential of energy saving options and decrease carbon emissions in SME-ports

- Develop general method to assess options for energy savings and test in pilot ports
- Tool (spreadsheet) to determine potential in ports
- Report will be distributed to other ports

Tools and methods to achieve carbon reduction

Decision making tool

Decision making tool to select best mix of low carbon options

- Ranking options for supply and demand of energy – based on merit-order strategy.
- Strategy to determine which energy source will be effective, depending on sources and demand
- Optimize selection of low energy options
- Report for interested ports

Energy cooperation structure

Set-up cooperation of companies/users

Based on production, storage and energy usage

Applicable in all ports

Different legal and governance frameworks taken in account

Now: only a few SME-ports use this method

2020: 10% of SME-ports

2030: 50% of SME-ports

Independent verification studies

9

Independent studies of feasibility

Leading to implementation of 8 low carbon technologies in 5 partner ports

Overall document for other ports

+

Increased insight in low carbon technologies

Transferability to other SME-ports

2020

At least 25 ports and 100 companies informed about results

More research to implement such technologies in other SME-ports

More information and contact details

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Wim Stubbe
Project Coordinator PECS
Port of Oostende
+32 487 54 87 68
wim.stubbe@portofoostende.be

Interreg
2 Seas Mers Zeeën
PECS
European Regional Development Fund

Partners

Port Oostende

gemeente HELLEVOETSLUIS

Portsmouth CITY COUNCIL

odijmond
OMGEVINGSDIENST IJMOND

INDAVER

BLUE POWER SYNERGY

SOLENT UNIVERSITY SOUTHAMPTON

Cerema

HZ UNIVERSITY OF APPLIED SCIENCES

GHENT UNIVERSITY

Observers

DUNKERQUE PORT
Grand Port Maritime de Dunkerque

Provincie Oost-Vlaanderen
Voor ieder van ons

Brittany Ferries

ABP
ASSOCIATED BRITISH PORTS

gemeente beverwijk

Hampshire County Council

EEEGR
EAST OF ENGLAND ENERGY GROUP

THAMES ESTUARY PARTNERSHIP

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PORT OF DEN HELDER

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