BELLONA EUROPA

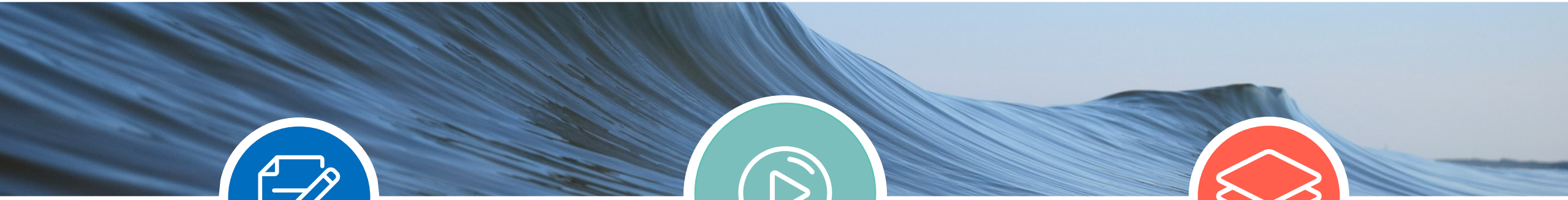
Ports2Decarb

Getting to net zero faster with ports as decarbonisation hubs

ABOUT BELLONA EUROPA

Our mission & vision

Achieving a restorative carbon negative society through a just and democratic transformation.



Integrate scientific systems thinking and foresight in policymaking

Accelerate credible climate solutions and availability of decarbonisation infrastructure

Ensure transparency & accountability through awareness-raising and public participation

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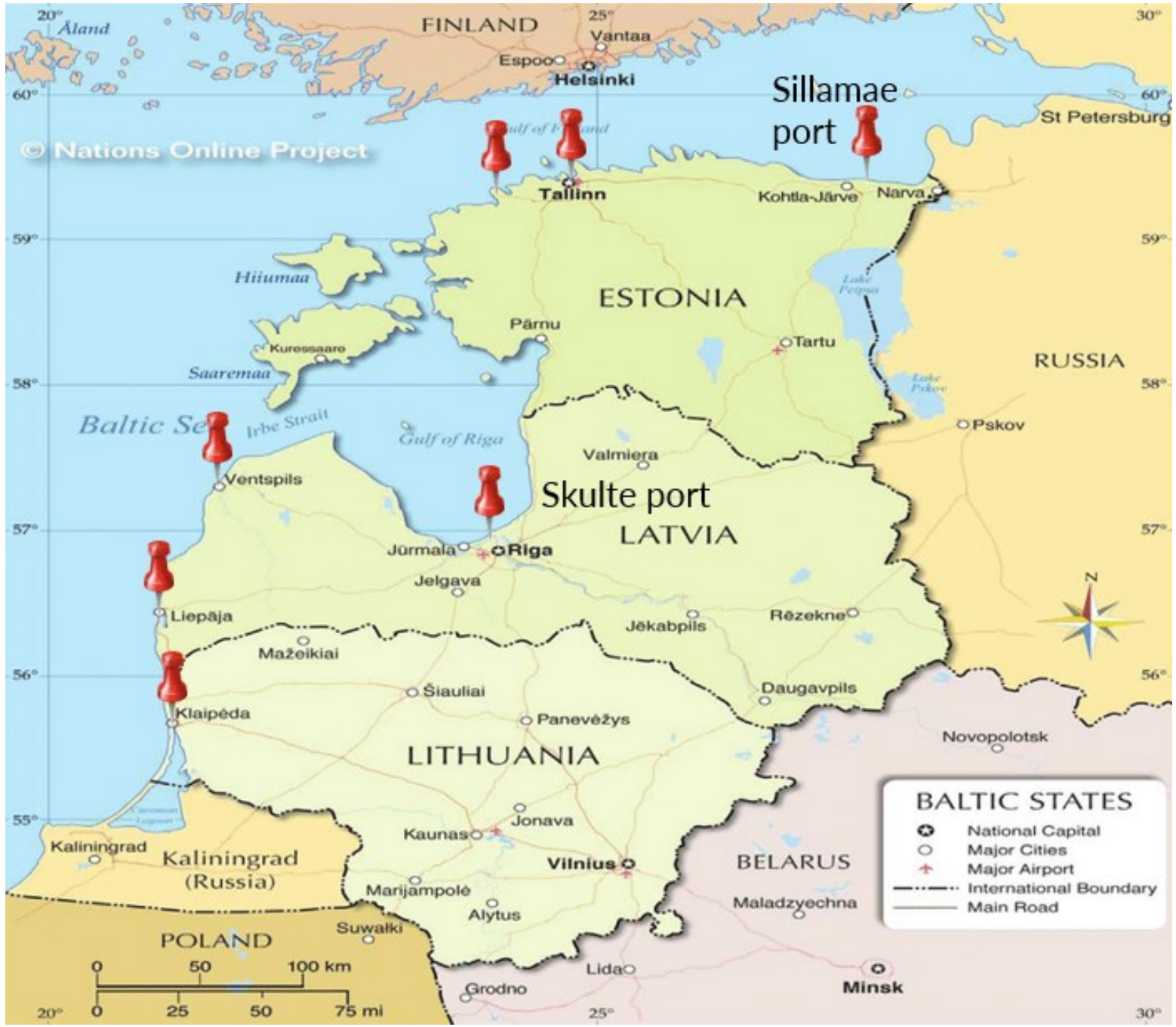
The geographical scope of this project on **North Sea and Baltic ports**, potentially encompassing EU and non-EU countries, creating critical mass for EU level action.


Sillamae port
Skulte port
© Nations Online Project
FINLAND
Vantaa
Espoo
Helsinki
Tallinn
Kohtla-Järve
Narva
St Petersburg
Åland
Hiiumaa
Saaremaa
Kuressaare
ESTONIA
Pärnu
Tartu
Lake Peipus
Lake Pskov
RUSSIA
Pskov
Baltic Sea
Irbe Strait
Gulf of Riga
Ventspils
Valmiera
LATVIA
Jūrmala
Riga
Jelgava
Liepāja
Jēkabpils
Rēzekne
Mažeikiai
Šiauliai
Daugavpils
Klaipėda
Panevėžys
Novopolotsk
LITHUANIA
Kaunas
Jonava
Vilnius
Kaliningrad
Kaliningrad (Russia)
Marijampolė
Alytus
Suwałki
POLAND
BELARUS
Maladzyechna
Lida
Grodno
Minsk
N
BALTIC STATES
National Capital
Major Cities
Major Airport
International Boundary
Main Road
0 50 100 km
0 25 50 75 mi
20°
25°
30°
60°
59°
58°
57°
56°
55°

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THE BIGGEST EMITTERS IN ESTONIA

EU ETS covered emissions of greenhouse gases in 2021

INSTALLATIONS WITH EMISSIONS (Mt CO_2eq)

- **above 250 000** tonnes of CO_2eq

  Sectors:

  - **Heat and power**
  - **Oil refining**

- 40 000–250 000 tonnes of CO_2eq

  Sectors:

  Heat and power, Oil refining

HOW TO READ MINI CHARTS

250 000 t CO_2eq = ■

1 000 000 t CO_2eq = ■■■■

6.9

Mt CO_2eq

of total emissions covered by EU ETS

Data source: EU ETS (2021), infographics by Fakta o klimatu

THE BIGGEST EMITTERS IN LATVIA

EU ETS covered emissions of greenhouse gases in 2021

INSTALLATIONS WITH EMISSIONS (Mt CO_2eq)

- **above 250 000** tonnes of CO_2eq

  Sectors:
  - **Heat and power**
  - **Cement and lime**

- **40 000–250 000** tonnes of CO_2eq

  Sectors:
  Heat and power

HOW TO READ MINI CHARTS

250 000 t CO_2eq = ■
1 000 000 t CO_2eq = ■■■■

2.1
Mt CO_2eq
of total emissions
covered by EU ETS

Data source: EU ETS (2021), infographics by Fakta o klimatu

THE BIGGEST EMITTERS IN LITHUANIA

EU ETS covered emissions of greenhouse gases in 2021

INSTALLATIONS WITH EMISSIONS (Mt CO_2eq)

- **above 250 000** tonnes of CO_2eq

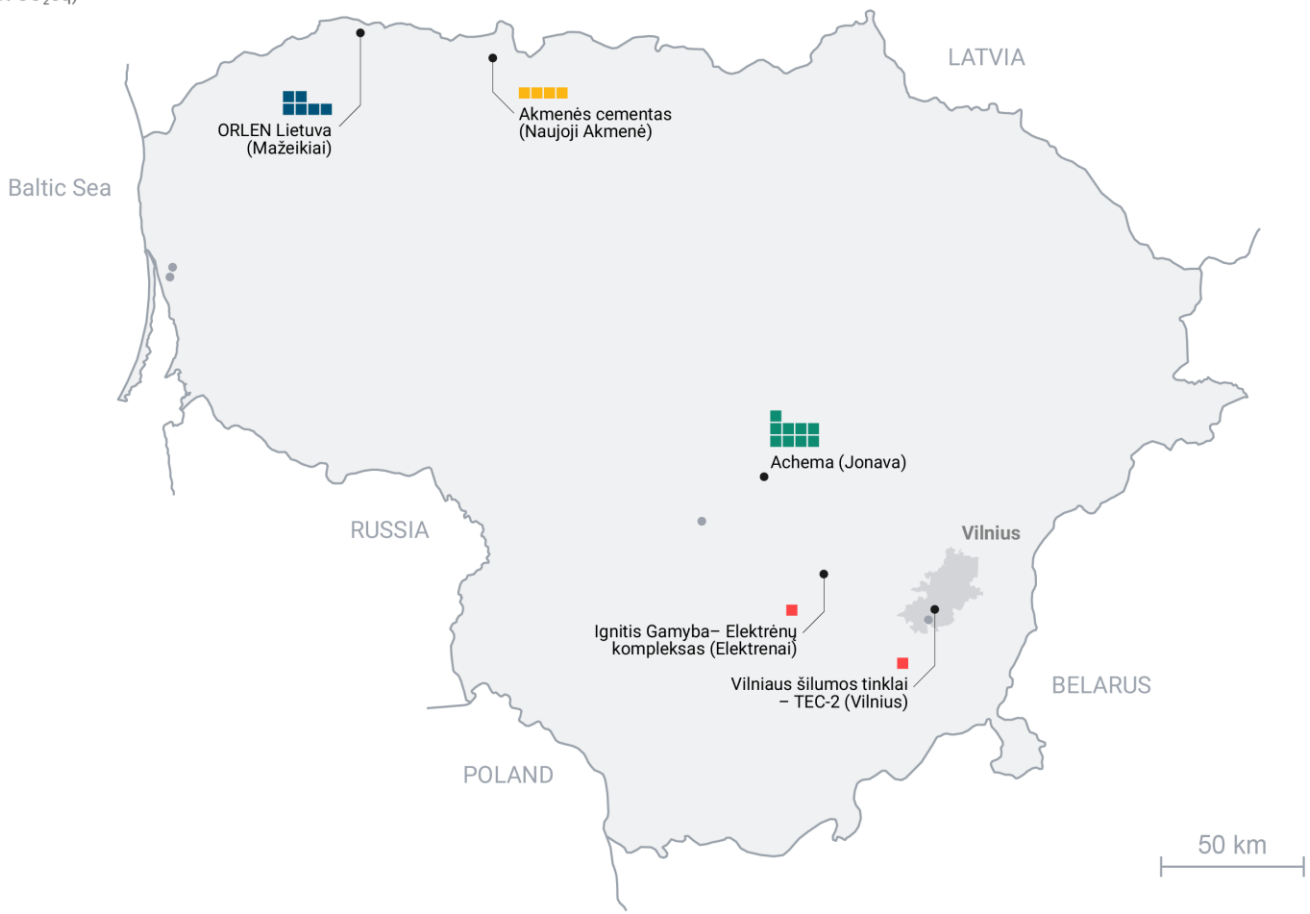
  Sectors:
  - **Heat and power**
  - **Cement and lime**
  - **Chemicals**
  - **Oil refining**

- **40 000–250 000** tonnes of CO_2eq

  Sectors:
  Heat and power, Others

HOW TO READ MINI CHARTS

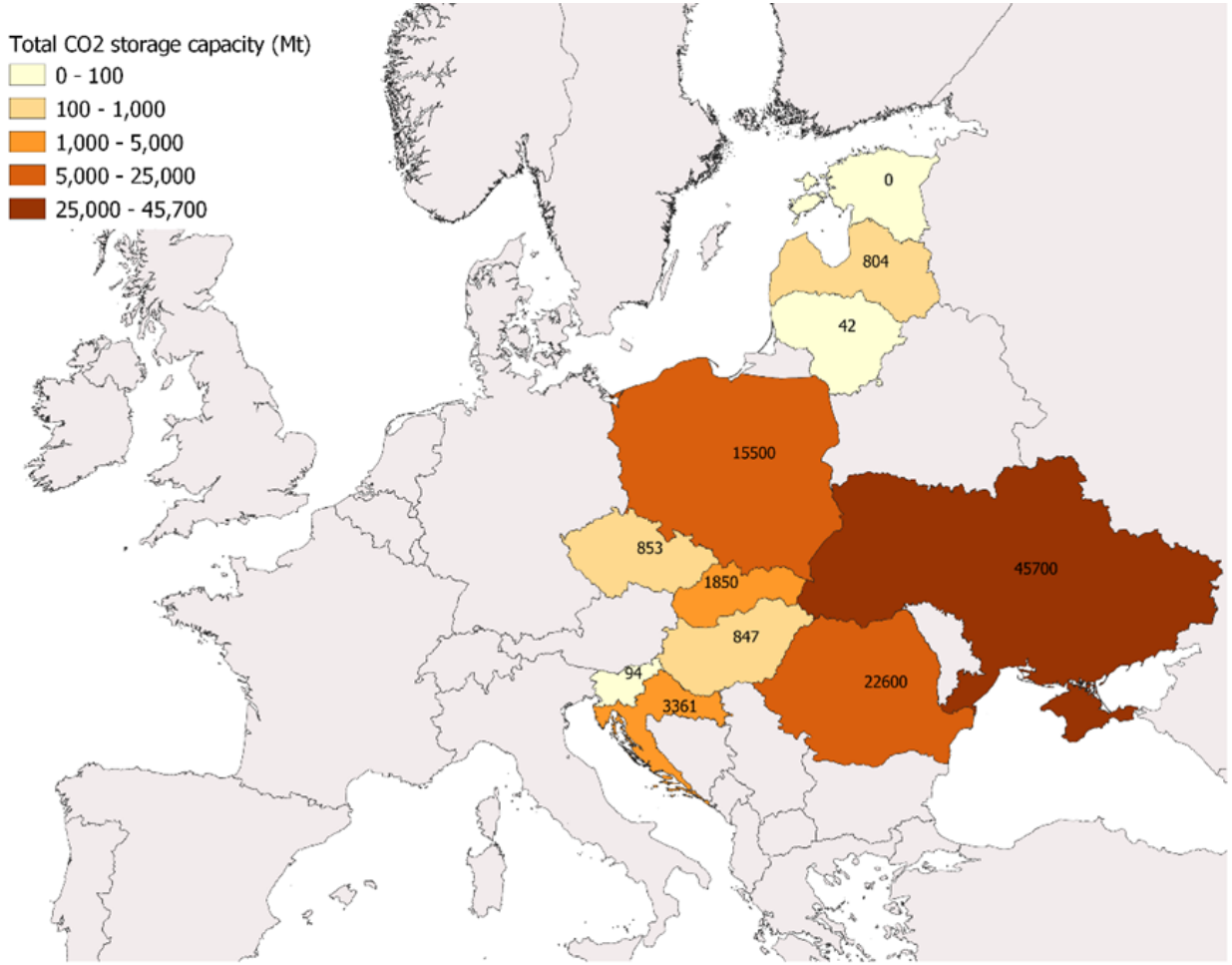
250 000 t CO_2eq = ■
1 000 000 t CO_2eq = ■■■■



6.0
Mt CO_2eq
of total emissions
covered by EU ETS

Data source: EU ETS (2021), infographics by Fakta o klimatu

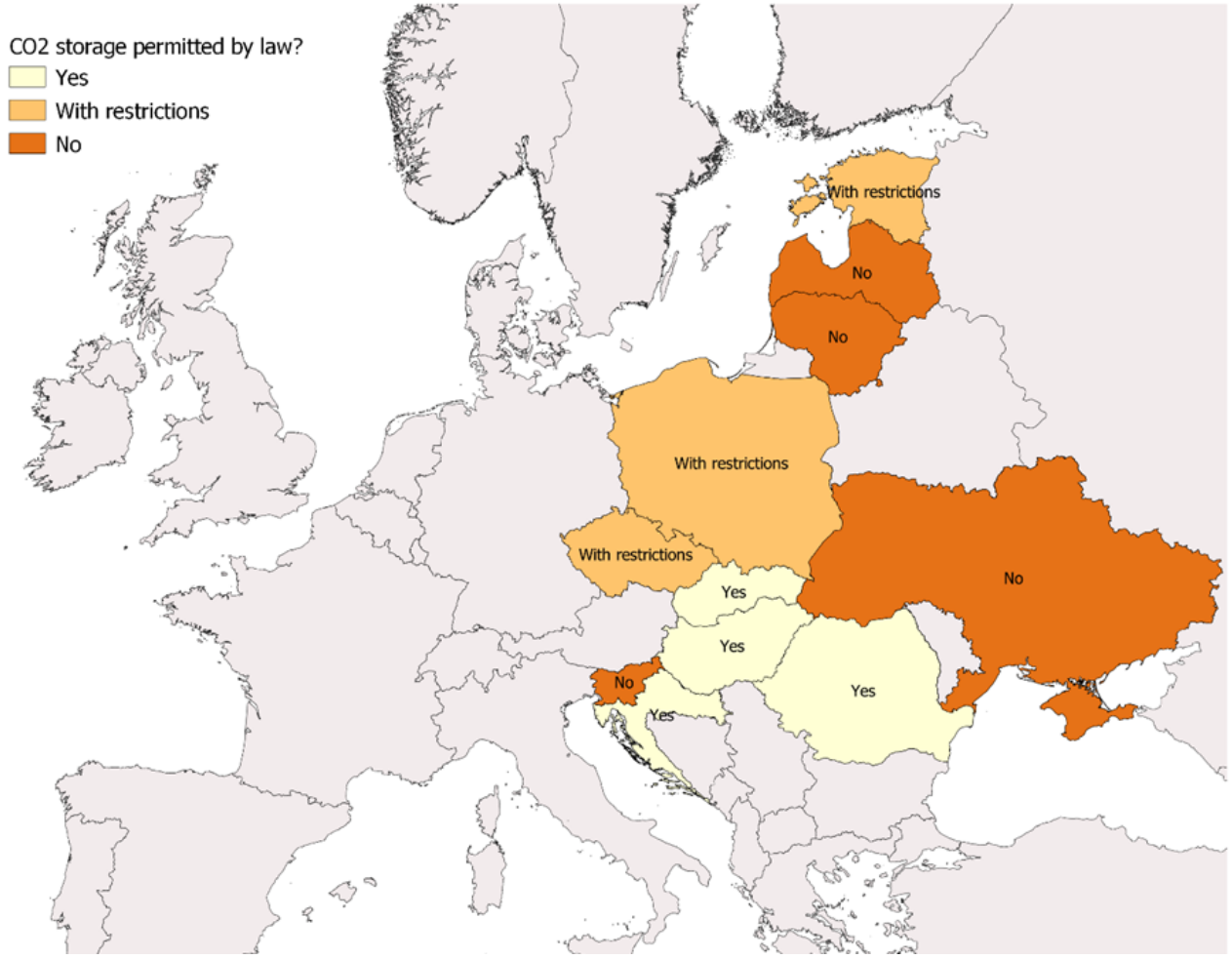
CO2 STORAGE POTENTIAL IN CEE (INDICATIVE)



Total storage (indicative): ca. 92 Gt CO2

Source: Compiled by EPG based on CCS4CEE partners' analysis of CO2 storage research

CCS-RELEVANT REGULATIONS AND POLICIES



Source: EPG (for the CCS4CEE WP3 summary report)

- Regulatory environments of partner countries vary, particularly on CO2 storage and transportation
- Ban on storage in some countries (despite including CCS in their long-term strategies)
- Long-term national strategies and plans rarely mention CCS
- High costs and low maturity associated with CCS in government plans
- Perceived as a transition solution only

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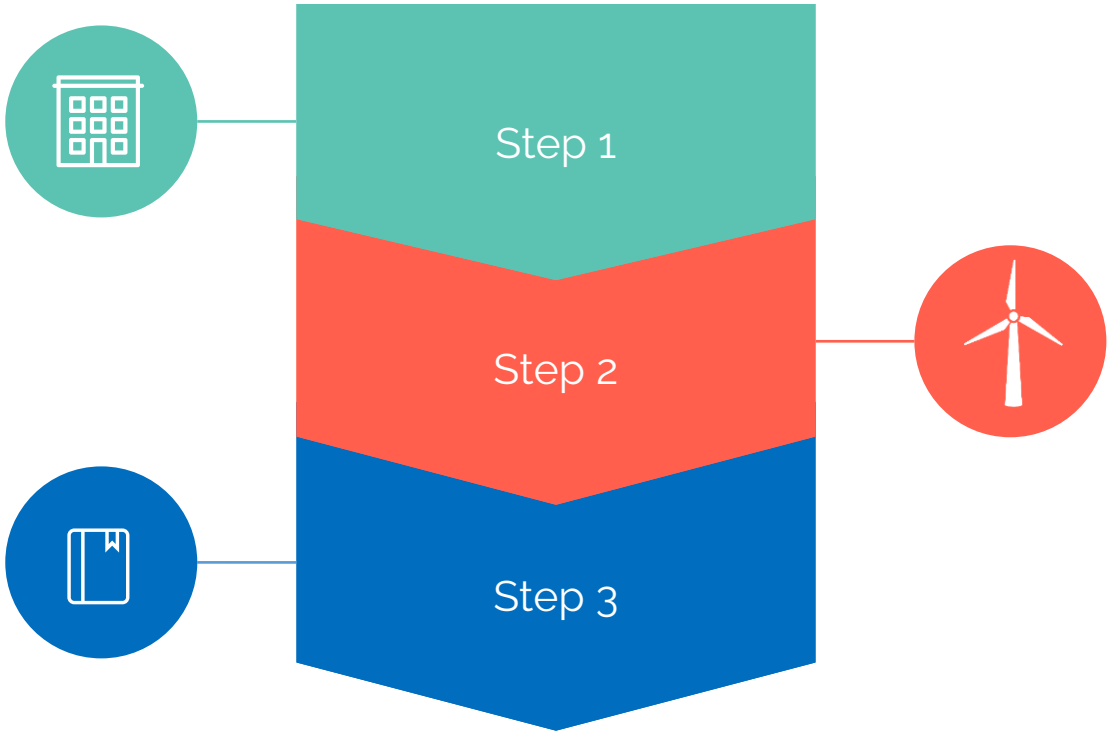
Events

Held in selected ports, accompanied by public and media engagement.

Implementation of recommendations

Together with the alliances built as part of the project.

OUTPUTS



Report

Specific legislative recommendations will be produced – **summarising the challenges** facing each port, the **barriers and opportunities for ports** to become key infrastructural hubs for decarbonisation and **identifying solutions on how to address them** both at the local, regional, national and international level.

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Year 1

- Identify and **engage with relevant stakeholders** to build a critical mass of ports taking up their role as key decarbonisation hubs

- Establish **the narrative and political-economic case for enabling the role of ports** as hubs for decarbonisation

Year 2

- Joint **actions with ports and relevant authorities at regional and national level** calling for EU-level policy and funding support

- Issue **policy recommendations for changes in EU legislation and funding schemes** to recognise the role of ports and facilitate their transition

Year 3

- Facilitate the **access to funding mechanisms established by the EU** (e.g. Innovation Fund, Connecting Europe Facility/Projects of Common Interest) and national governments

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CCS BALTIC

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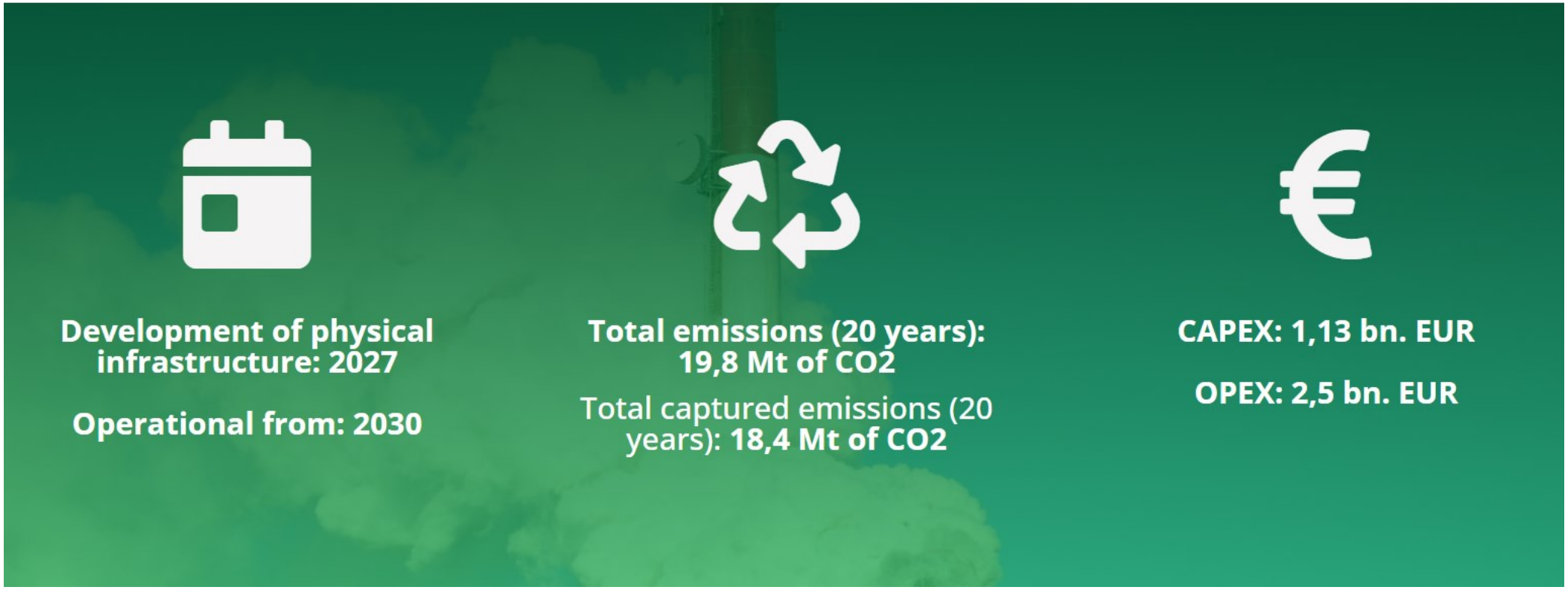


MORE OFTEN PORTS ARE HOMES FOR INDUSTRIAL CLUSTERS

ENERGY – INCREASINGLY PART OF PORT BUSINESS

THE MAIN ENTRY POINT FOR ENERGY COMMODITIES

LOCATION FOR ENERGY PRODUCTION

ENABLERS FOR ENERGY TRANSACTIONS

[ESPO Trends in EU ports governance 2022.pdf]

Onshore facilites

Northern Lights

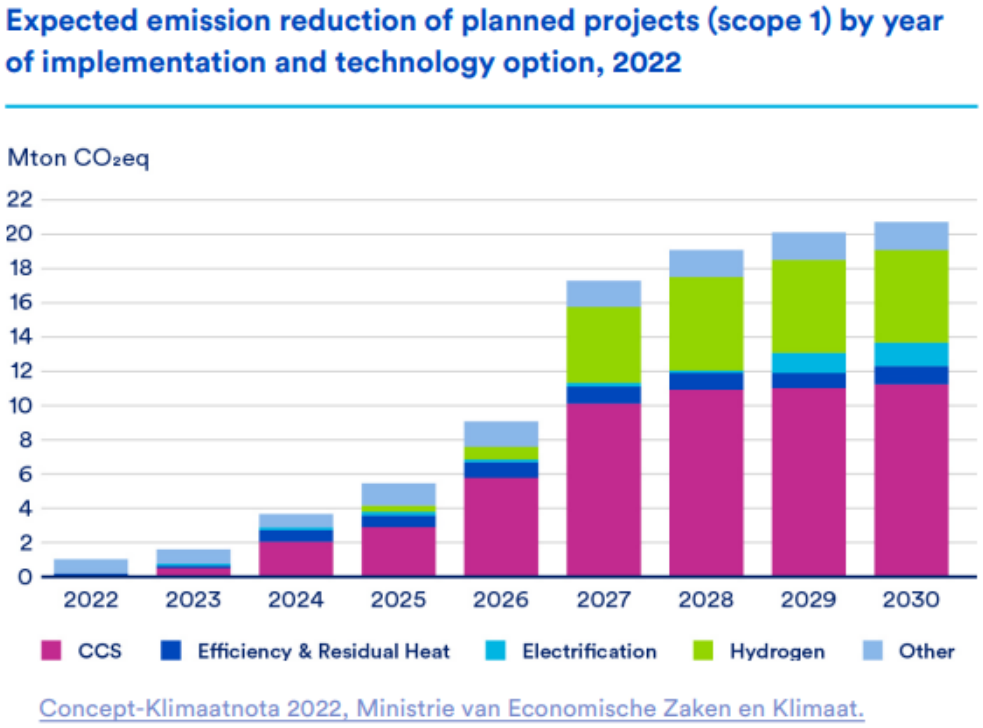
→ Construction progressing according to plan, **more than 80% complete**

→ **Ready for operation in 2024**

Source: Northern Lights (norlights.com)

PORTHOS PROJECT AT THE PORT OF ROTTERDAM

- To tackle emissions from industrial clusters and create a value chain for CCS at scale
- Potentially contributing some 17% of the CO2 reductions targeted for industry in 2030
- Number of other CCS projects, including Aramis and CO2Next



IMPORTANCE OF THE PORTHOS PROJECT IN DECARBONISING THE PORT OF ROTTERDAM

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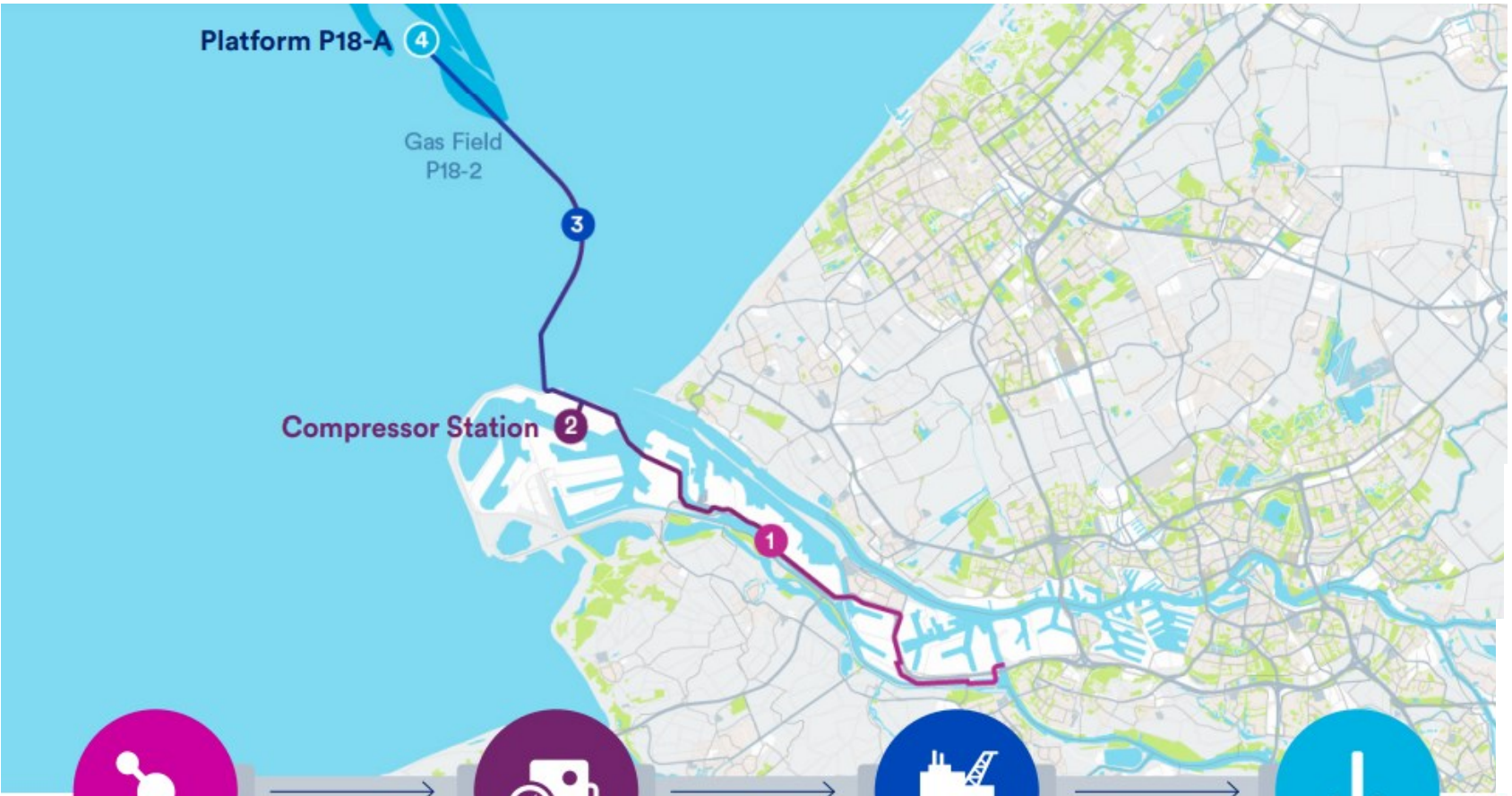
1. The Port of Rotterdam is the largest seaport in Europe and in 2020 had CO_2 emissions of 22.4 Mt which accounted for 16% of the Netherlands' total CO_2 emissions.

2. The Port has set ambitious carbon emission reduction targets of 55% by 2030 and achieving carbon neutrality by 2050.

3. Carbon capture and storage represents a vital step in the Port's plans to become a state-of-the art decarbonisation hub, with the Porthos project expected to tackle 11% of the port's CO_2 emissions.

4. The Porthos project was developed to create a flexible and open-access carbon capture transport and storage infrastructure for a cluster of emitters in the port area who will share a common CO_2 trunk pipeline. The SDE++ policy formed the business case for the project's customers, by bridging the gap between the costs of capture, transport and storage of CO_2 and the price of the Emissions Trading Scheme (ETS).

Source: bellona.org/news/climate-change/2023-03-porthos-and-beyond-the-critical-importance-of-carbon-capture-and-storage-projects-for-dutch-climate-goals



The CO_2 captured from multiple sources in the area will be **transported through a collective underground pipeline** in the already existing pipeline strip of the Maasvlakte, Europoort and Botlek

The CO_2 will then be **pressurised in a compressor station** to the required pressure and temperature for injection.

The pressurized CO_2 is **transported through an offshore pipeline to the former gas platform P18-A,** approximately 20km off the coast in the Dutch North Sea.

At the platform, the CO_2 will be **pumped more than 3km under the seabed into empty gas fields in the North Sea** located in a sealed reservoir of porous sandstone, ideal for the permanent geological storage of CO_2.[4]

2.5 Mt CO_2

Reductions of 2.5 Mt CO_2 per year through the CO_2 transport and storage network.

37 Mt CO_2

37 Mt CO_2 stored over a 15-year period.

GET IN TOUCH!

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