

# CombiNet Tagung 2021

## Port of Antwerp, a sustainable location

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# Port of Antwerp Group



# A truly global port

A unique synergy



**Cargo handling**



**Logistics**



**Industry**

# Port of Antwerp Facts & figures



Port of  
Antwerp



# Port of Antwerp

In a nutshell



**231**

Mill. Tonnen  
Seefracht



**12.068**

Hektar



**19,0**

Mrd. € Wert-  
schöpfung



**144.000**

Jobs



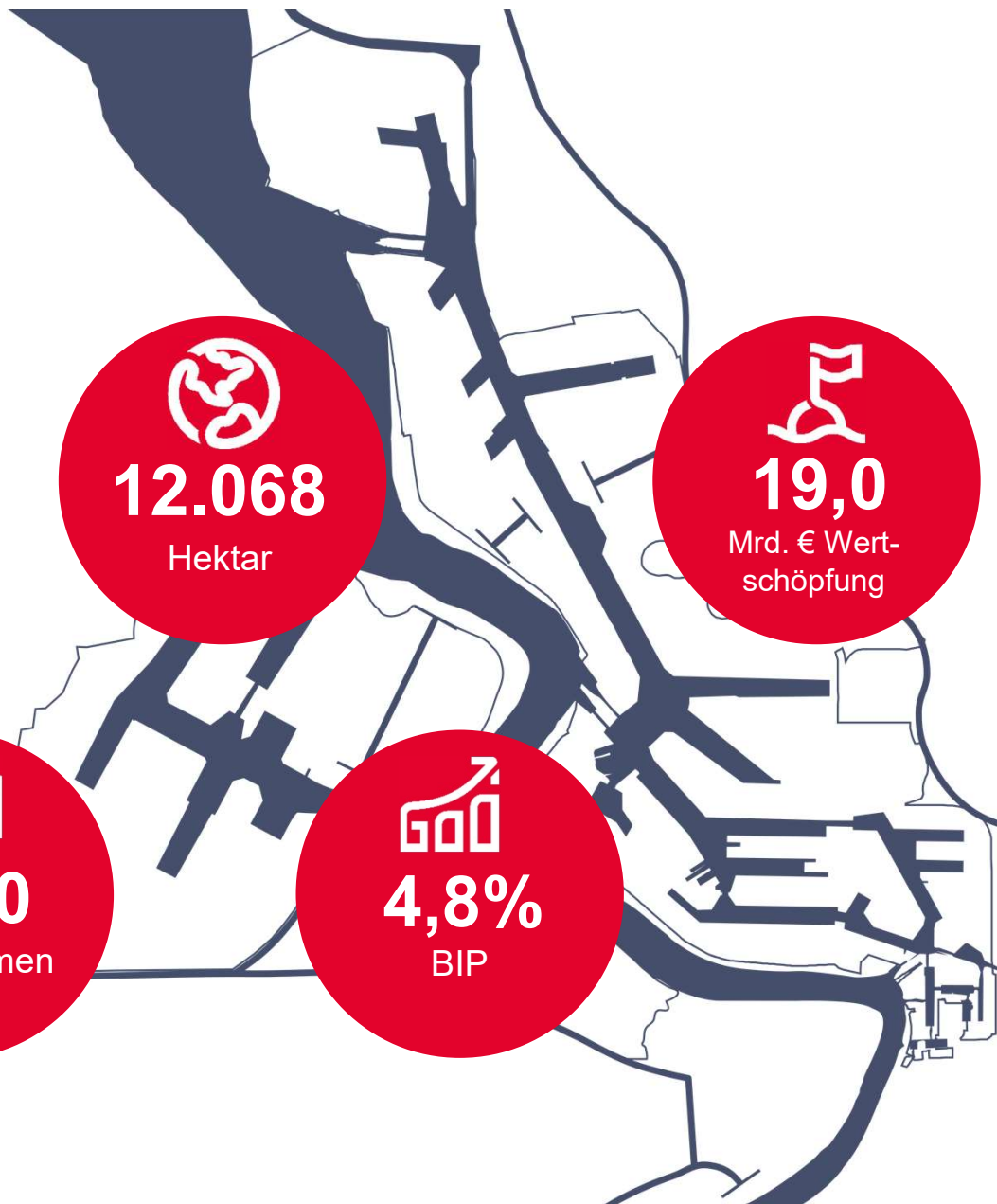
**1.000**

Unternehmen



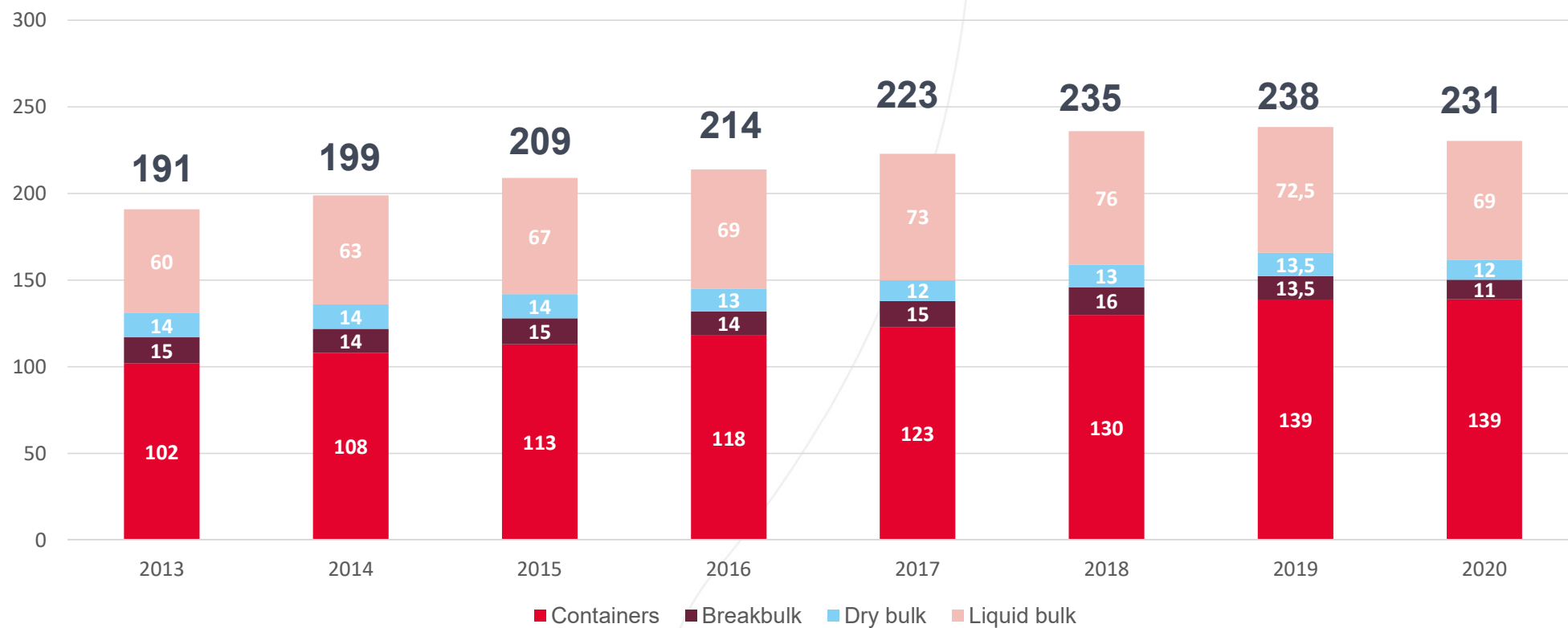
**4,8%**

BIP



# Sustainable growth

231 million tonnes of cargo in 2020





# Results Port of Antwerp

January - September 2021



**9.10**  
million TEU  
**105**  
million tonnes







TEU growth  
expectations  
**+1,8 - 3,1%**

**Container traffic worldwide  
will keep on growing. More  
global trade means more  
container traffic means  
more container capacity is  
a necessity.**





*Build a digital nervous  
system across the port*

**Landlord**

**Regulator**

**Operator**

**Community  
builder**

*Enable innovation in and  
around the port*



**Port of  
Antwerp**

# Call to Action for Decarbonization – Global Maritime Forum (London/COP26 Glasgow)

*Konkrete Forderungen sind:*

- *Verpflichtung zur Dekarbonisierung der internationalen Schifffahrt bis 2050*
- *Unterstützung von emissionsfreien Schifffahrtsprojekten im industriellen Maßstab durch nationale Maßnahmen*
- *Ergreifung von Richtlinien, die den emissionsfreien Schiffsverkehr bis 2030 zur Standardlösung machen*



# Call to Action for Decarbonization – Global Maritime Forum (London/COP26 Glasgow)

## *Was spricht aktuell dagegen:*

- *Großteil aktueller Bestellungen für Neubauten ist immer noch auf Basis alter Technologie (nur der Schwefelgehalt wurde Anfang 2020 von 3,5 auf 0,5 Prozent reduziert)*
- *Scrubberttechnologie – selbst wenn sie angewendet wird, wird in den Häfen die Entsorgung kaum kontrolliert*
- *noch weitgehend fehlende Infrastruktur zur Betankung mit LNG*
- *Lange Nutzungsdauer von Hochseeschiffen*





# Our goals





**Sustainable  
growth**



**Focused  
transition**

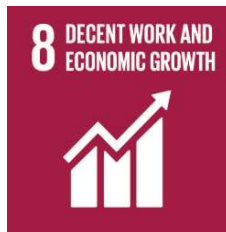


**Resilient  
port**

# Policy | SDG Driven

## Our mission

“Home port as a lever for a sustainable future”





# Lighthouse projects

## 3 focus domains



### Sustainable energy



#### Onshore wind production

Expanding capacity in the port



#### Hydrogen Coalition

Strong partnership assessing feasible H2 import cases



#### Steam & Waste heat

Backbones to provide the port industry and the city with steam and waste heat

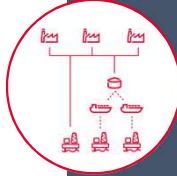


### Sustainable industry



#### NextGen District

Reconversion of a strategic area towards sustainable and circular industry



#### Antwerp@C

CO2 capture, transport and storage of CO2



#### Zero pellet loss & plastic trap

Partnership between industry, logistics and transport to prevent plastics polluting the environment; innovative solution to remove plastics



### Sustainable shipping



#### Multi Fuel Port

Action Plan to integrate alternative fuels (LNG, methanol, H2, electricity) in our bunker market



#### On shore power

for barges and sea-going vessels



#### Tugboats on H2 & methanol

Integration of alternative fuels in our own fleet

# Climate-neutral port

**The energy transition**  
(electricity-heat-transport)  
becomes a reality on the port  
platform through a wide range of  
partner projects.

## Import green hydrogen

Hydrogen plays an important  
role in the mix of applications  
to significantly reduce CO<sub>2</sub>  
emissions.

## Wind power

69 wind turbines in the  
port area supply green  
electricity.

## Heating circuit for Antwerp-North

The city and companies in  
the port reuse residual heat  
from industry.

## Ecluse Steam circuit

Several chemical  
companies in the port  
exchange heat by means  
of a steam circuit.

! This means 100,000 tonnes  
less CO<sub>2</sub> on annual basis.

## Methanol Resource for new and sustainable chemistry

The **power-to-methanol** pilot project  
will convert hydrogen from renewable  
electricity into methanol by a flexible  
chemical process.  
An innovative concept that bridges the  
gap between renewable energy and  
chemistry.

CO<sub>2</sub>

H

CH<sub>3</sub>OH

Methanol is produced  
from captured CO<sub>2</sub> and  
sustainably produced  
hydrogen.

## Making the fleet sustainable

Port of Antwerp invests in  
tugboats running on hydrogen  
or methanol.

Powered by Methanol

# Climate-neutral port

## Sustainable energy: hydrogen import coalition



Production of hydrogen with green energy in countries where insufficient solar and wind energy can be generated

Import via ship or pipeline

Port of Antwerp as an energy hub

# Climate-neutral port

## Renewable energy

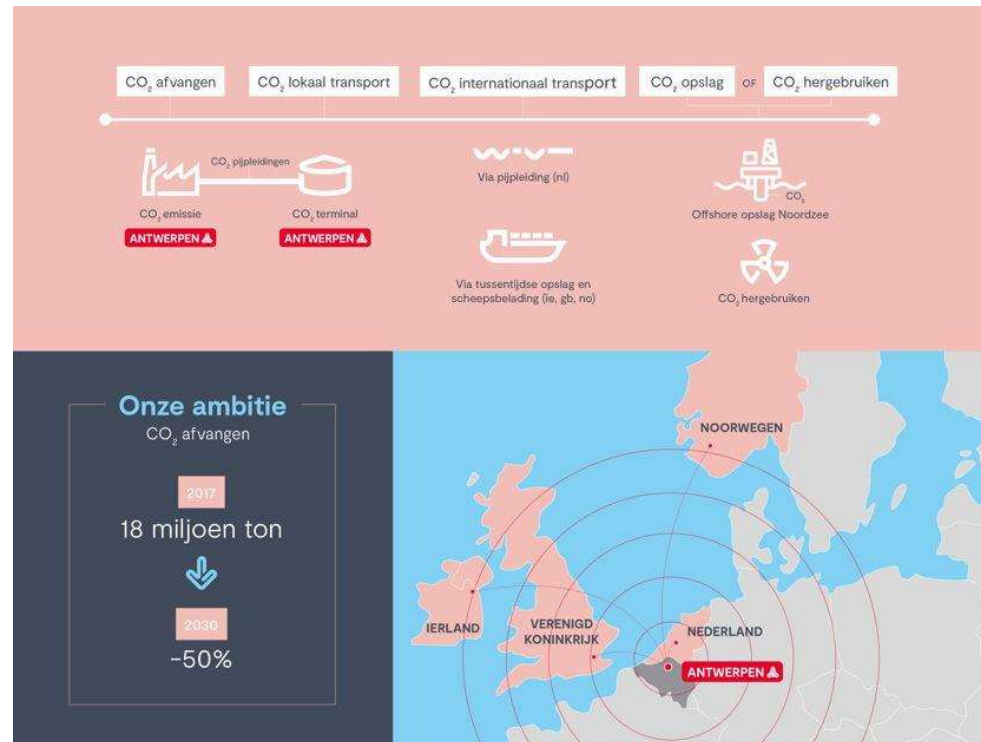
- **North Heat Grid:** residual heat is captured and reused by the port and **city**
- **Largest on-shore wind farm** in Belgium
- **Solar energy** with potential for further expansion
- **Power-to-methanol** test project
- **Ecluse:** reuse of residual heat by industry



# Climate-neutral port

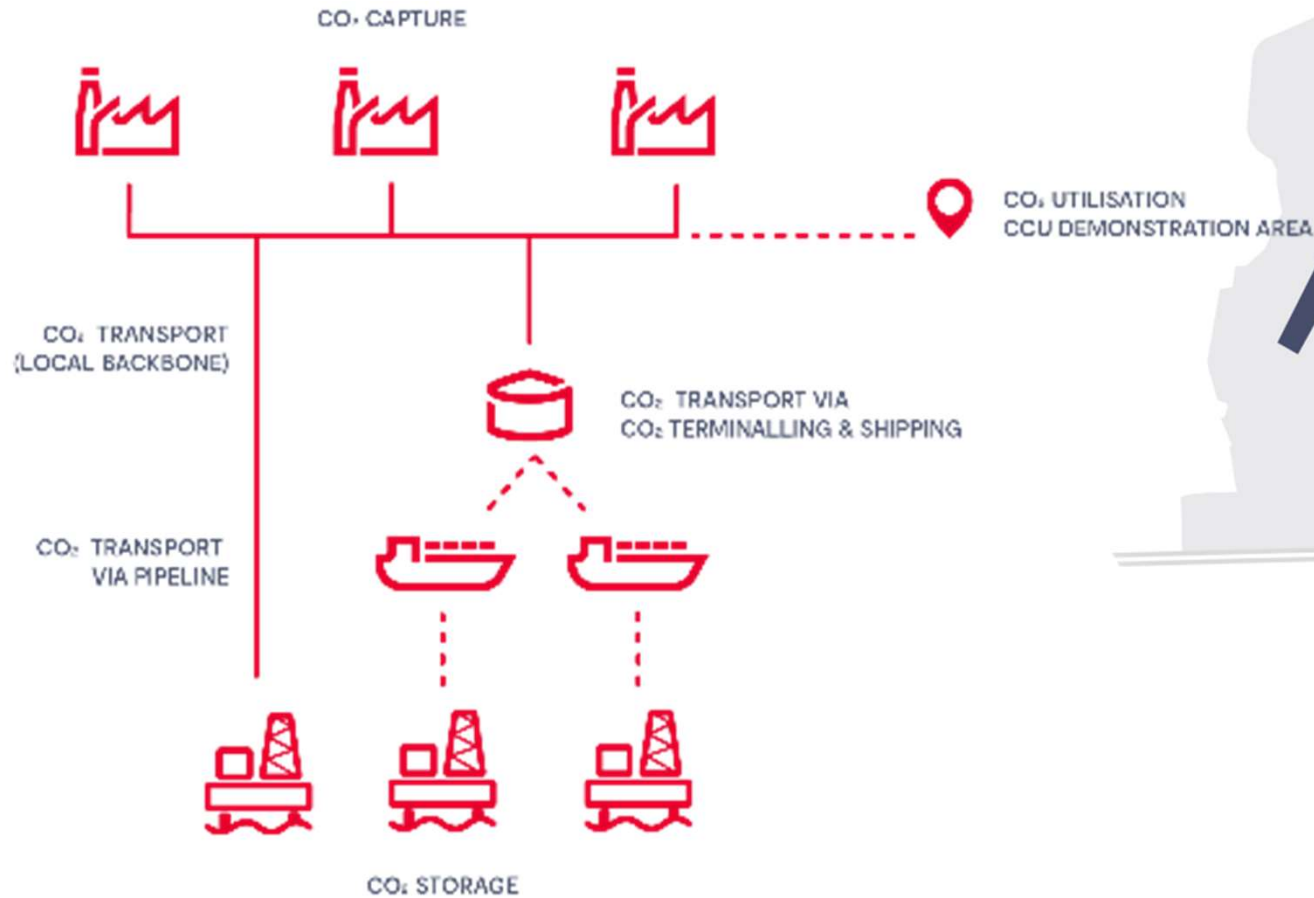
## Sustainable industry: storage and reuse of CO<sub>2</sub> with Antwerp@C

with 8 partners



# Energy transition

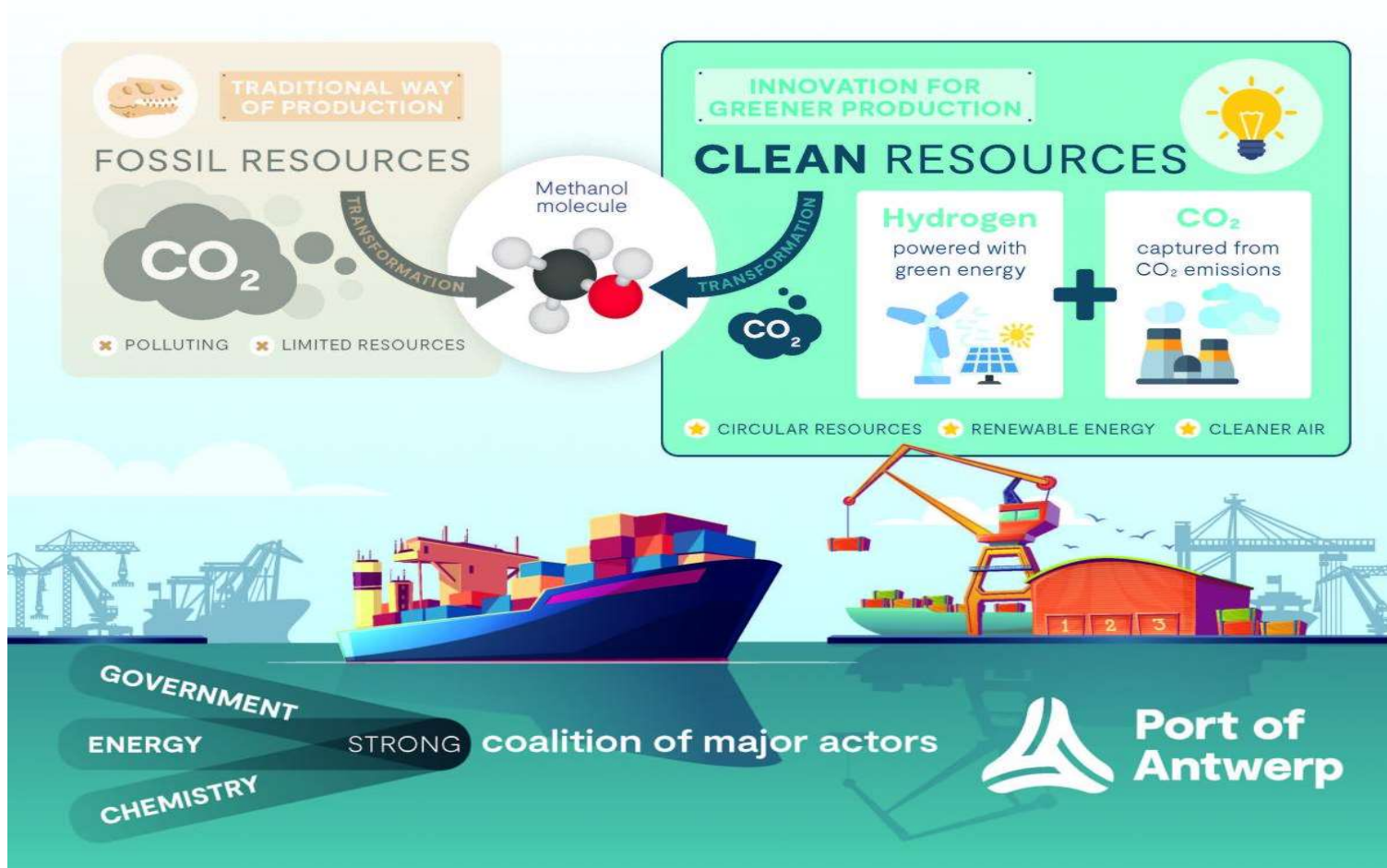
CCUS-Carbon Capture,  
Utilisation and Storage)





# Climate-neutral port

Sustainable industry: storage and reuse of CO<sub>2</sub> with Antwerp@C



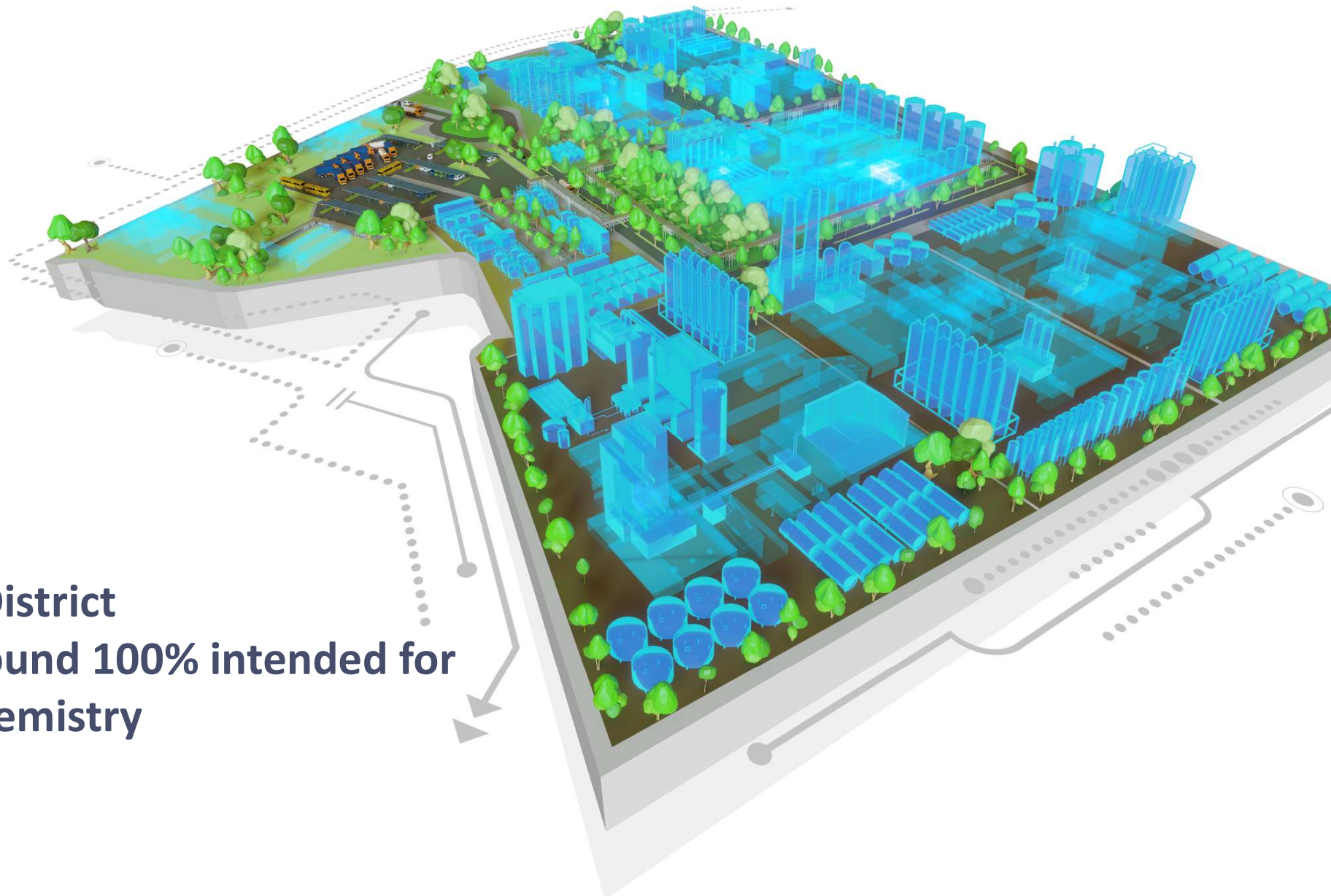


# Climate-neutral port

## Port of Antwerp as an indispensable link in circular economy and energy transition

## **NextGen** District

Testing ground 100% intended for  
circular chemistry



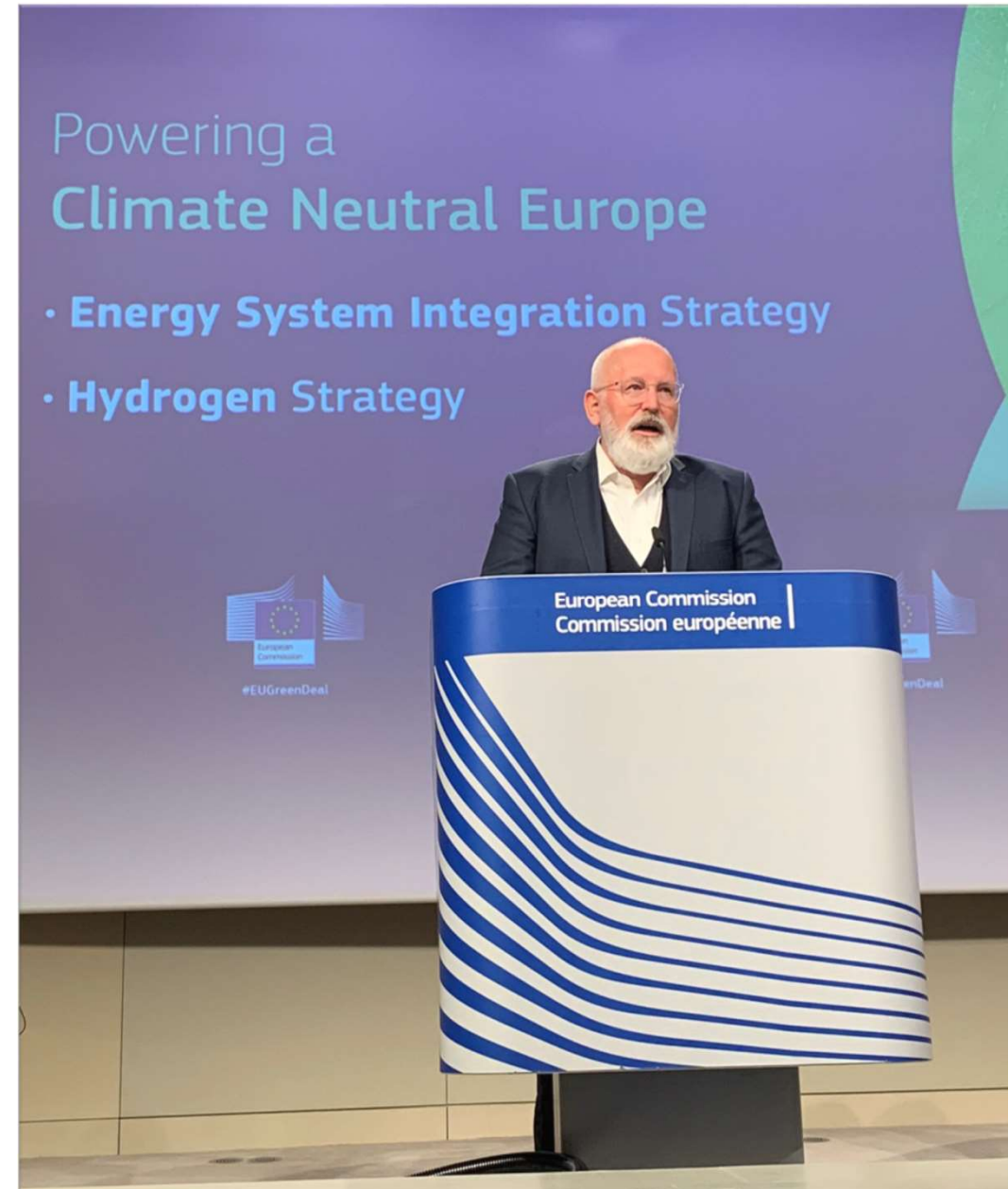


## Sustainable shipping

Own fleet with energy-efficient tugs, testing projects with tugs on hydrogen and methanol, hybrid patrol vehicles

# Green Hydrogen

- Forms the basis of a robust & carbon-neutral **energysystem**
- As **molecular energycarrier** it can transport energy along large distances, ensuring to bring the energy when and where we need it
- it's complementary to direct/local RE.
- Together with carbon, it forms the **basis for organic chemistry** that has to evolve from fossil to circular





# Hydrogen Import Coalition



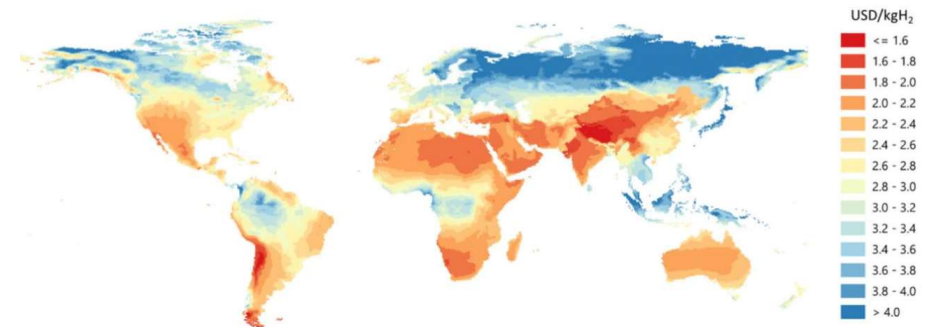
# Hydrogen Import Coalition

## Scope

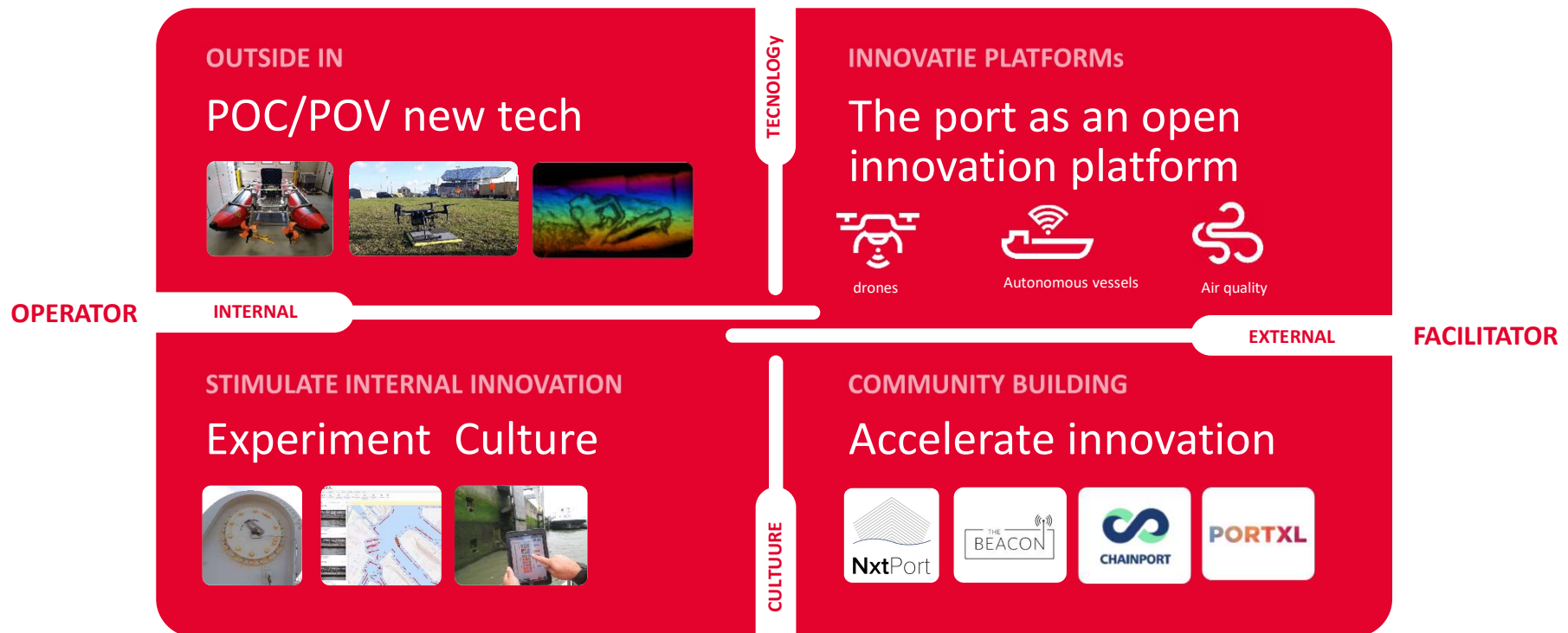
**Integrated research** of the value chain of importing over long distances renewable energy & feedstock in the form of H<sub>2</sub>carriers (molecules)

- Different **carriers**: hydrogen, ammonia, methanol, syn-methane & dibenzyltoluene
- Gain Insight on the **Value chain & thresholds** from foreign production to final consumption through a partnership that bundles technological, market-economic & policy expertise across the entire chain

Hydrogen costs from hybrid solar PV and onshore wind systems in the long term



# Our innovation strategy





# Innovation platform concept

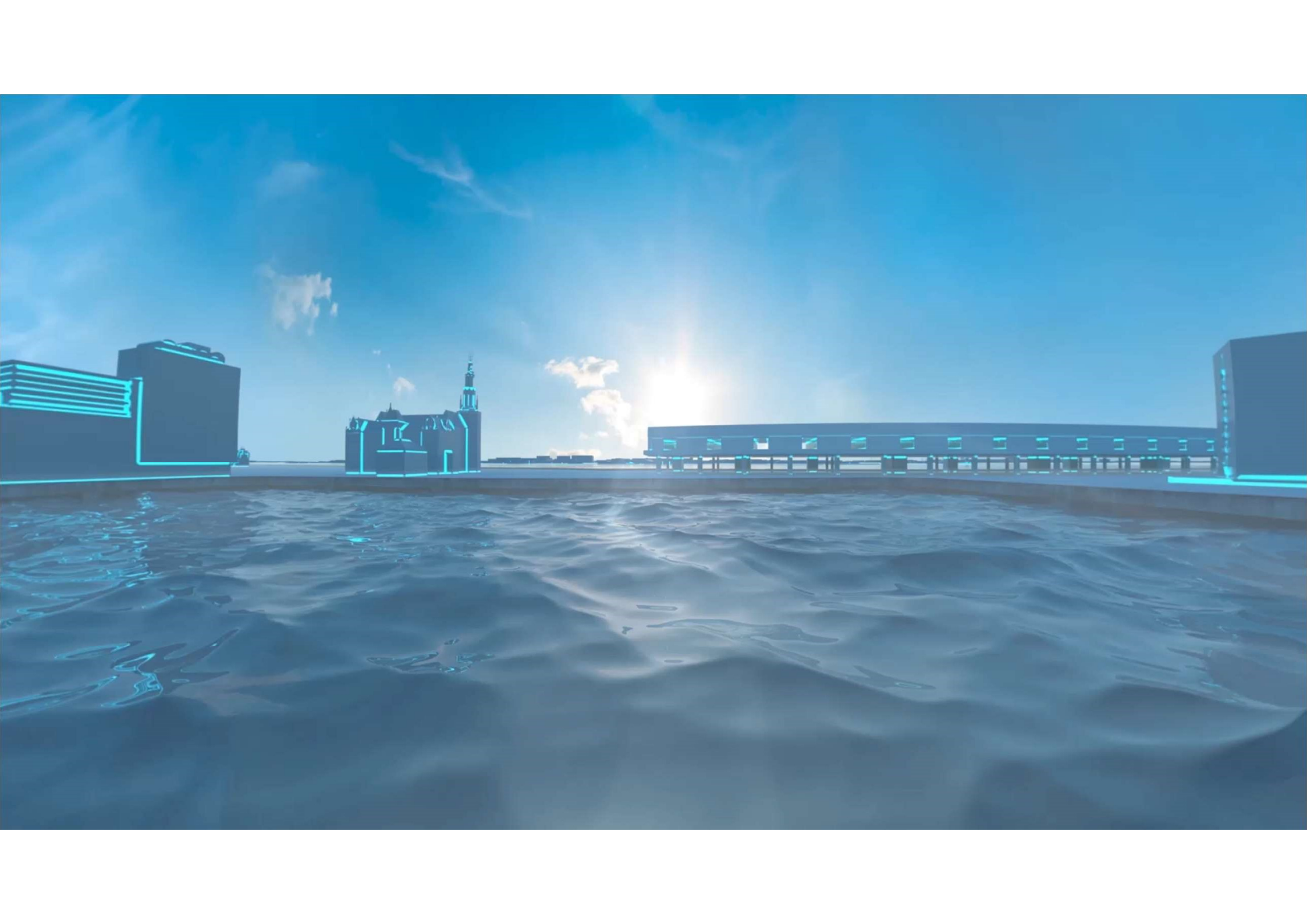
Provide **test zones** in operational port

Leverage **assets** as an innovation enabler

Infrastructure – Data - Processes

Accelerate technological development and create **added value**





# Thank you.