



## Taking the next step to optimize for the future

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KIVI at TU-Delft, 11 January 2018

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- Netherlands re-use & decommissioning landscape
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# EBN: Dutch State participant in oil & gas

- Industry partner & co-investor in E&P of natural gas and oil
- Non-operating partner (40-50%) for oil & gas companies
- Shares held by the Dutch State
- 2016 results:



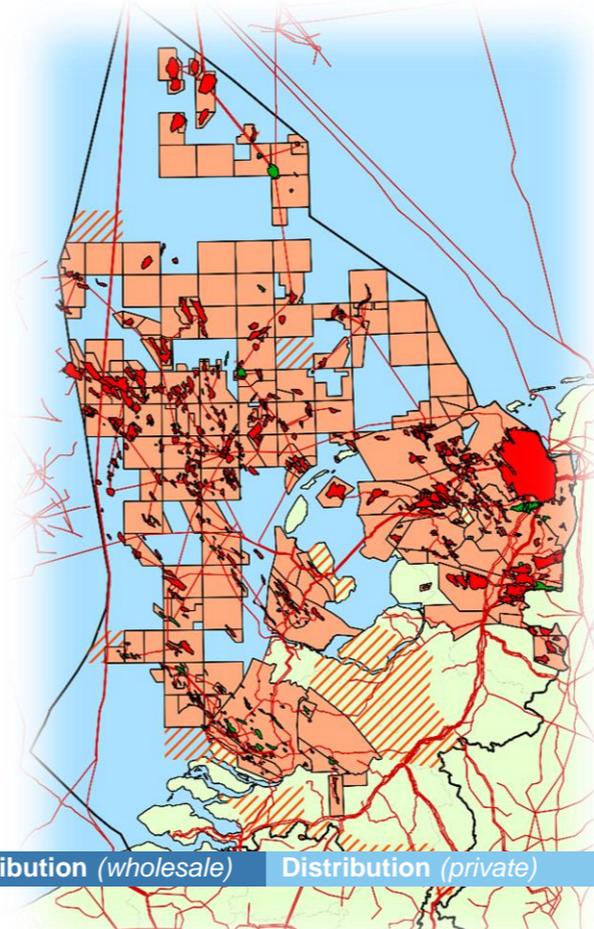
20 bln Nm3  
(incl. Groningen)



1,6 mln bbl



€ 1,3 Bn  
State revenues



Exploration >> Production >> Gas storage >> Distribution (wholesale) Distribution (private)

EBN's influence and responsibilities

# NOGEPA

- Netherlands Oil and Gas Exploration and Production Association
- Represents the interests of the companies licensed to explore for and produce oil and gas in the Netherlands
- Vision: Contribute to an open and transparent energy transition towards a fully sustainable energy supply in 2050
- Current projects: Code of Conduct, Decommissioning, NOx, NOGEPA Standards, Onsaardgas.nl, North Sea Integration



# EBN interest in re-use & decommissioning

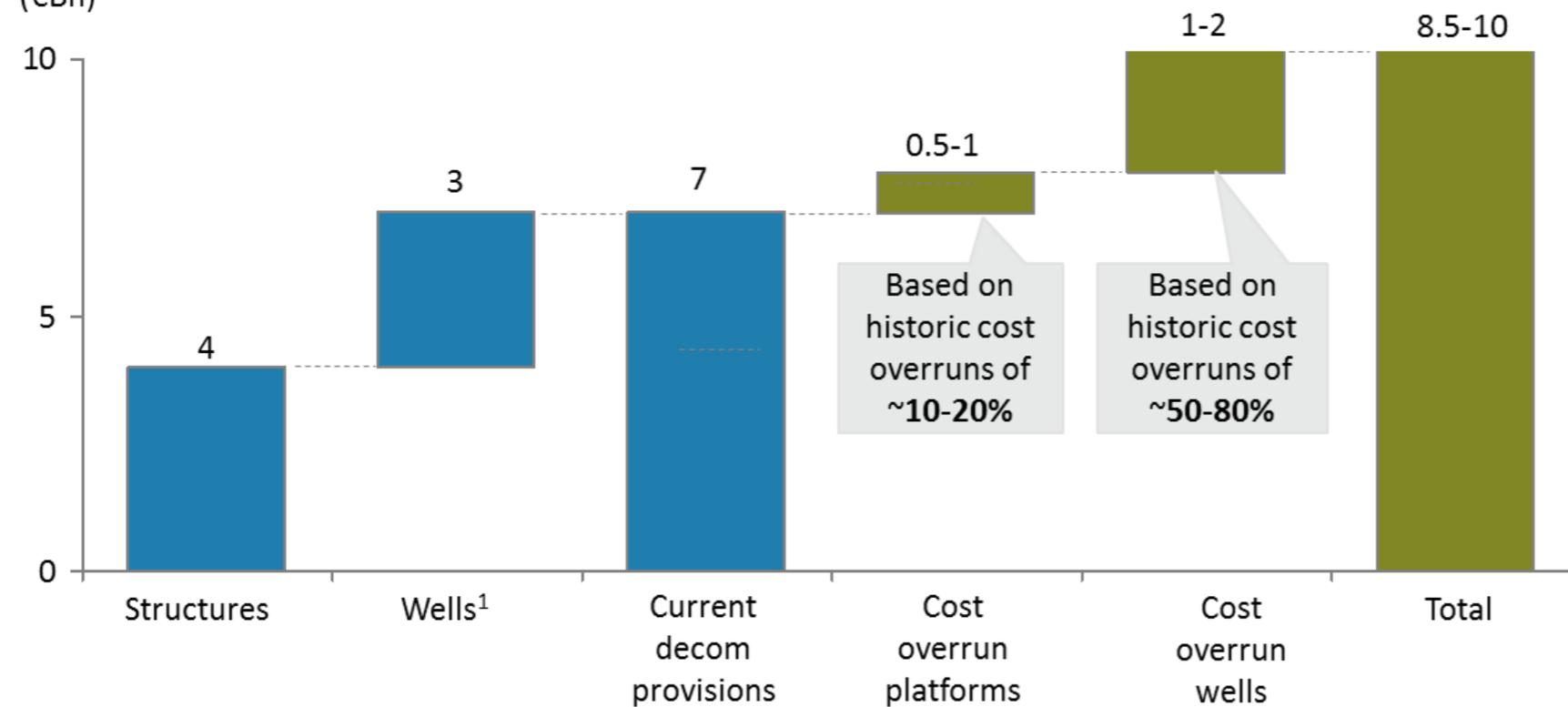
- The Netherlands Ministry of Economic Affairs have requested EBN to take the lead in organising the Dutch decommissioning challenge:
- EBN is 40% owner of the Dutch oil & gas production infrastructure
  - Wells
  - Facilities
  - Pipelines
- Tax payers carry 73% of the total cost of decommissioning (through EBN and reduced national gas income)

€ 7 Bn = cost estimate of decommissioning in the Netherlands  
offshore: € 5 Bn, onshore: € 2 Bn



# Staying in control of our costs

Total estimated Decom cost NL  
(€Bn)

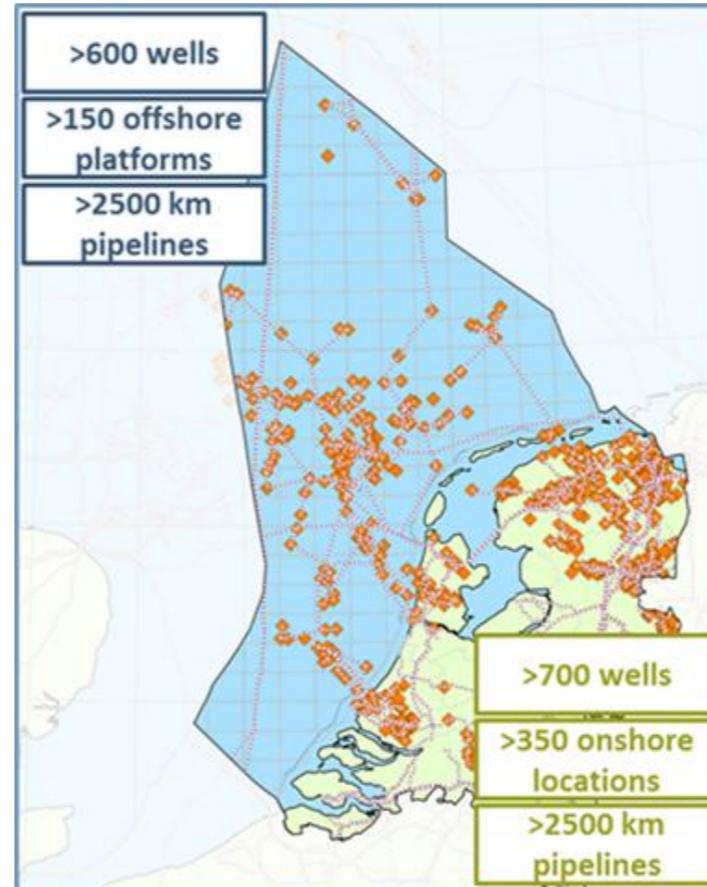


1. Based on reservation of ~€3 mln per well based on 27 wells decommissioned to date – as at January 2017  
Source: Operator and EBN estimates total Netherlands (onshore + offshore)



# The Netherlands O&G infrastructure

- Shallow water depths:
  - < 50 meters
- Similar platform types:
  - 151 steel jackets and monopiles
  - 2 steel gravity bases
  - 2 concrete gravity bases
- Well depth:
  - 2000–4000 meters
- Pipelines:
  - buried



# Our energy transition will change the North Sea



## Netherlands:

- Currently 6% renewable energy
- Planning 8-10 GigaWatt offshore wind in 2030
- Planning 20 MegaTonnes annual CO<sub>2</sub> storage in 2030

# Netherlands Decommissioning & Re-use facts

1. How many offshore platforms have been decommissioned in the Netherlands?

- none
- 6
- 24
- 52

2. How many of the decommissioned offshore platforms (topsides) have been re-used?

- none
- 12%
- 26%
- 54%



# Netherlands Decommissioning & Re-use facts

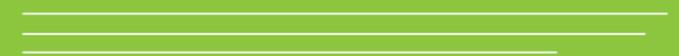
3. For what purpose have the offshore platforms been re-used?

- hydrocarbon production
- sustainable energy
- natural reef (rigs to reef)
- combination of the above

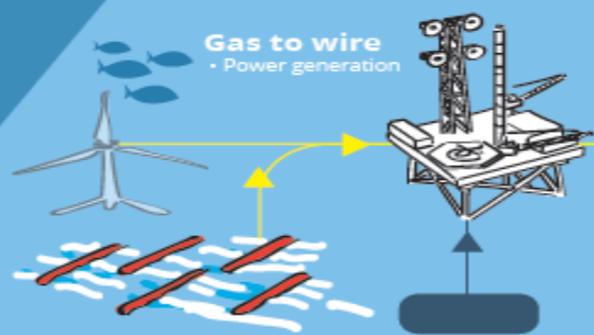
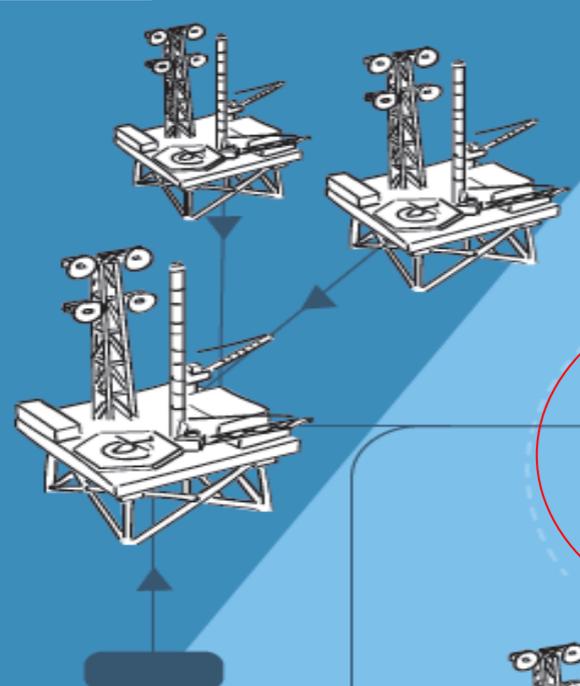
4. How many onshore wells have been re-used for geothermal energy?

- none
- 1%
- 5%
- 10%





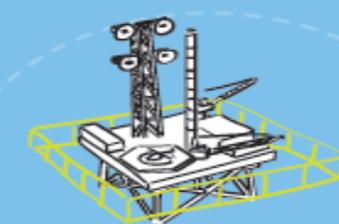
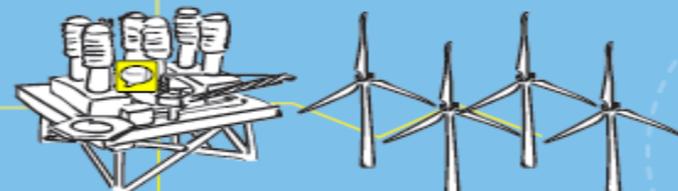
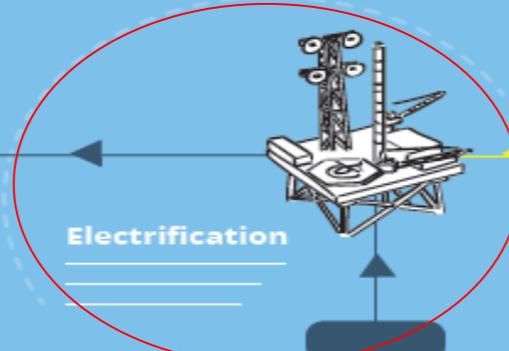
### Conventional use



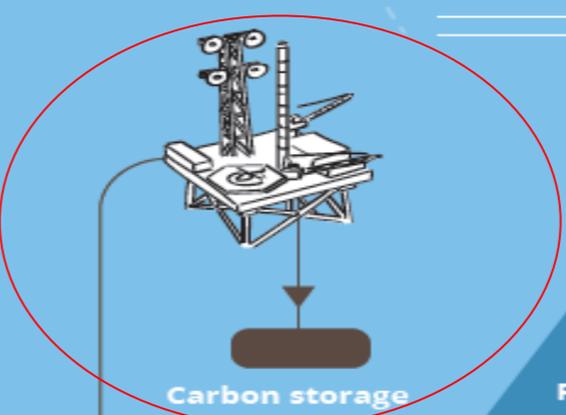
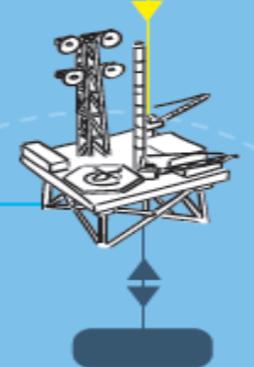
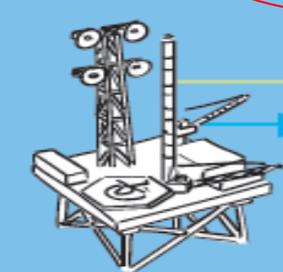
### Re-use



### Accommodation



### Giving back to nature



### Recycling



Natural gas

Hydrogen (H<sub>2</sub>)

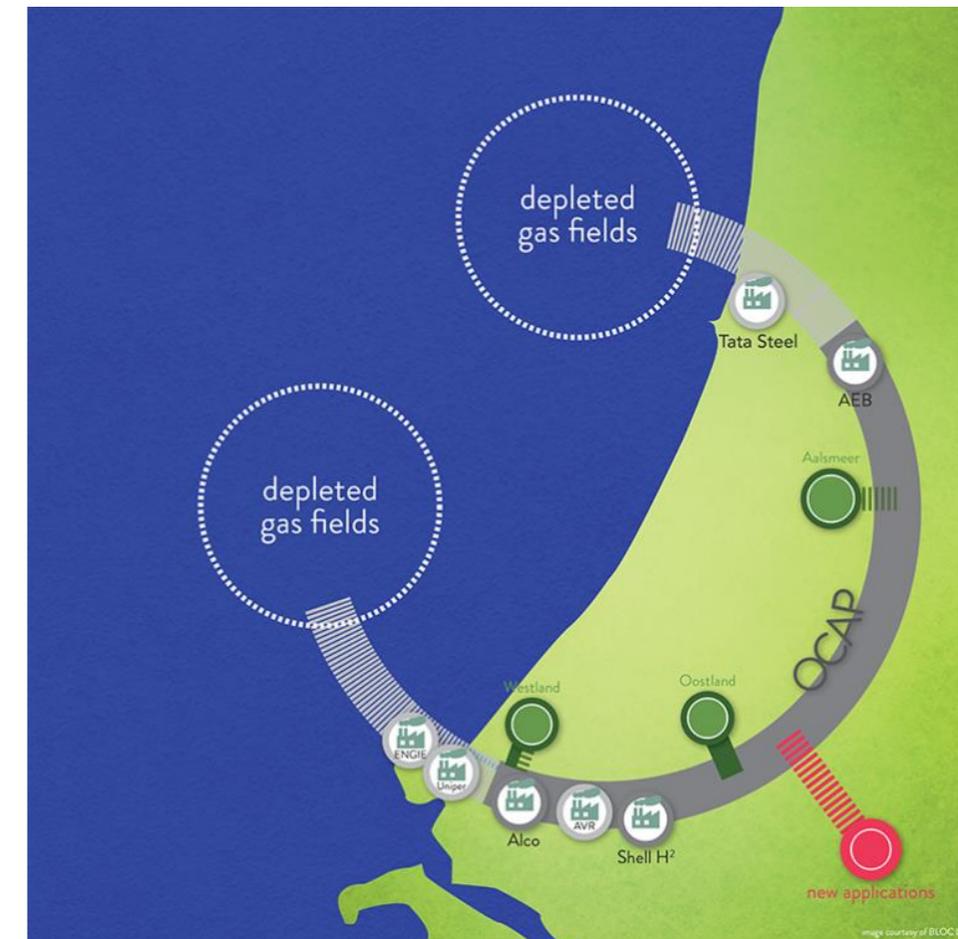
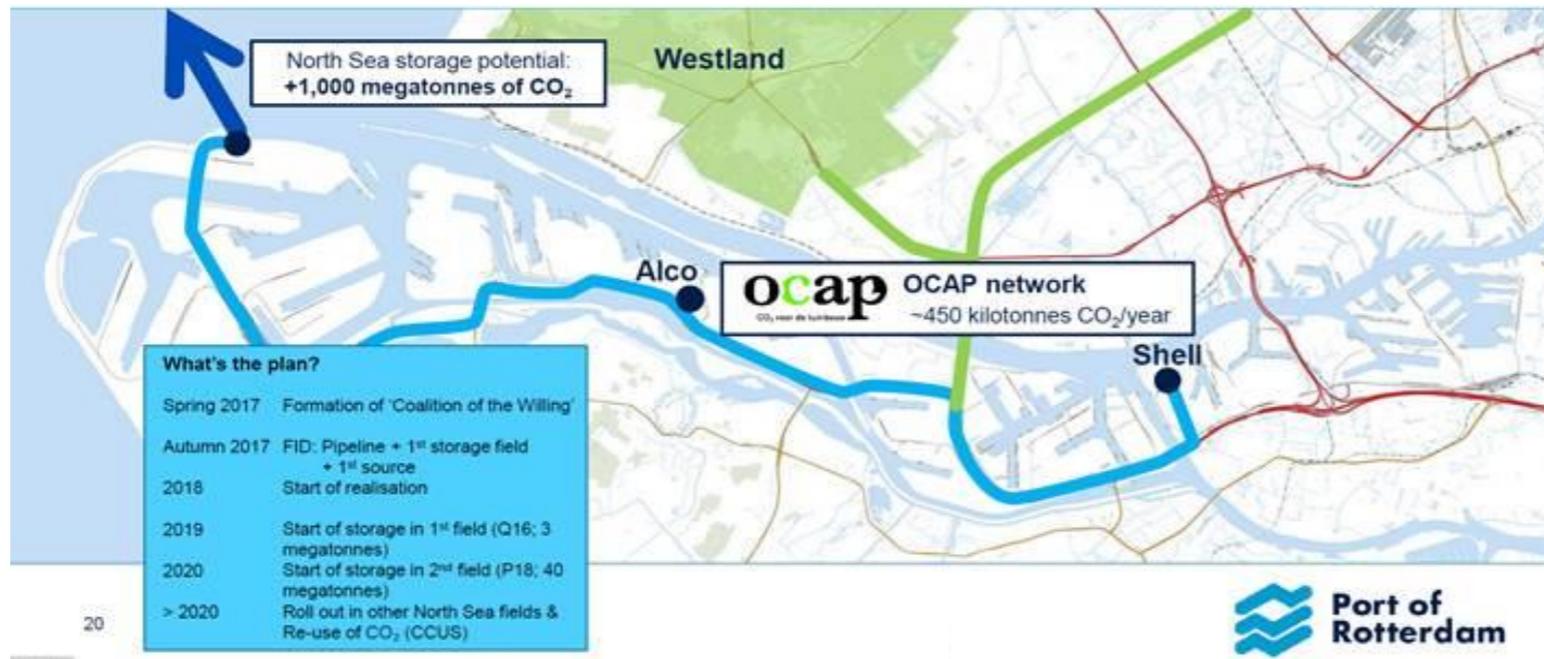
Electricity

Carbon Dioxide (CO<sub>2</sub>)

# CCS: Back on the radar

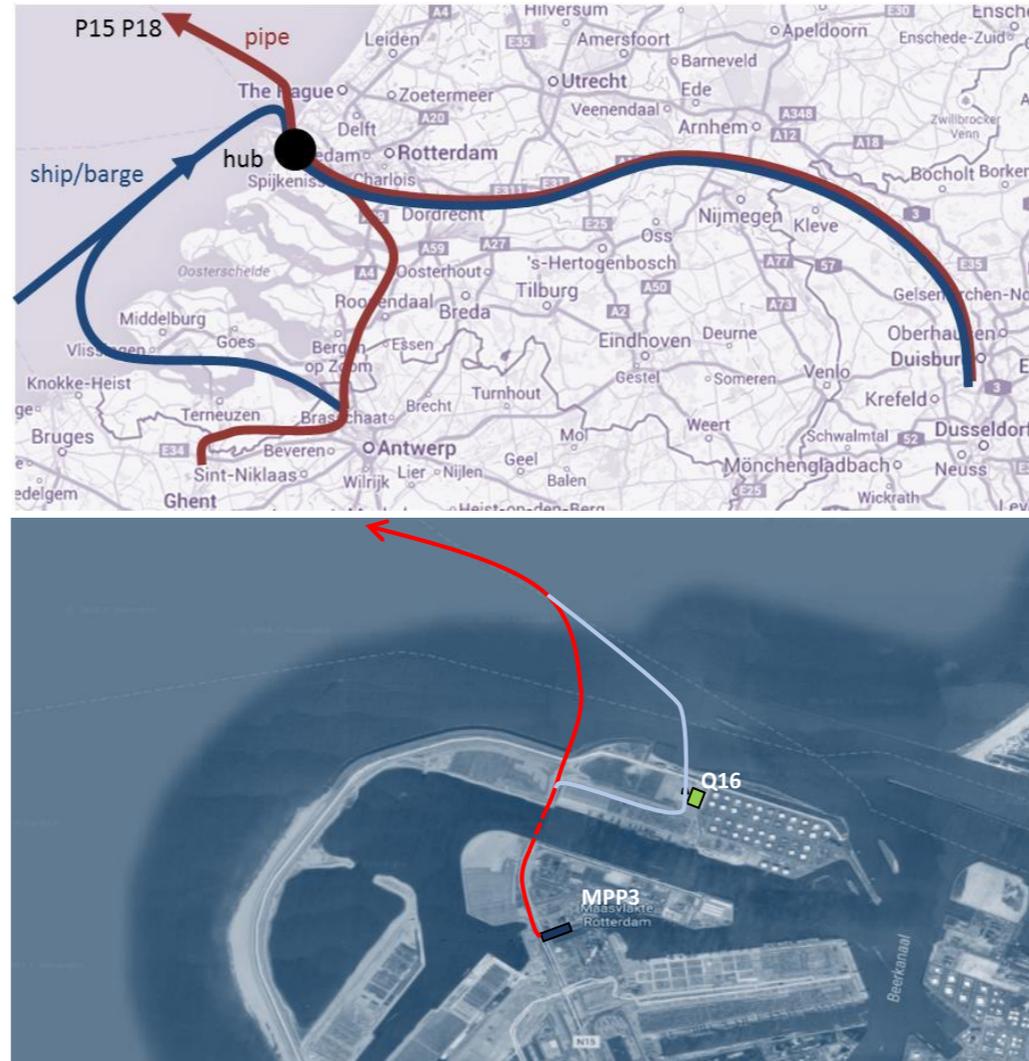
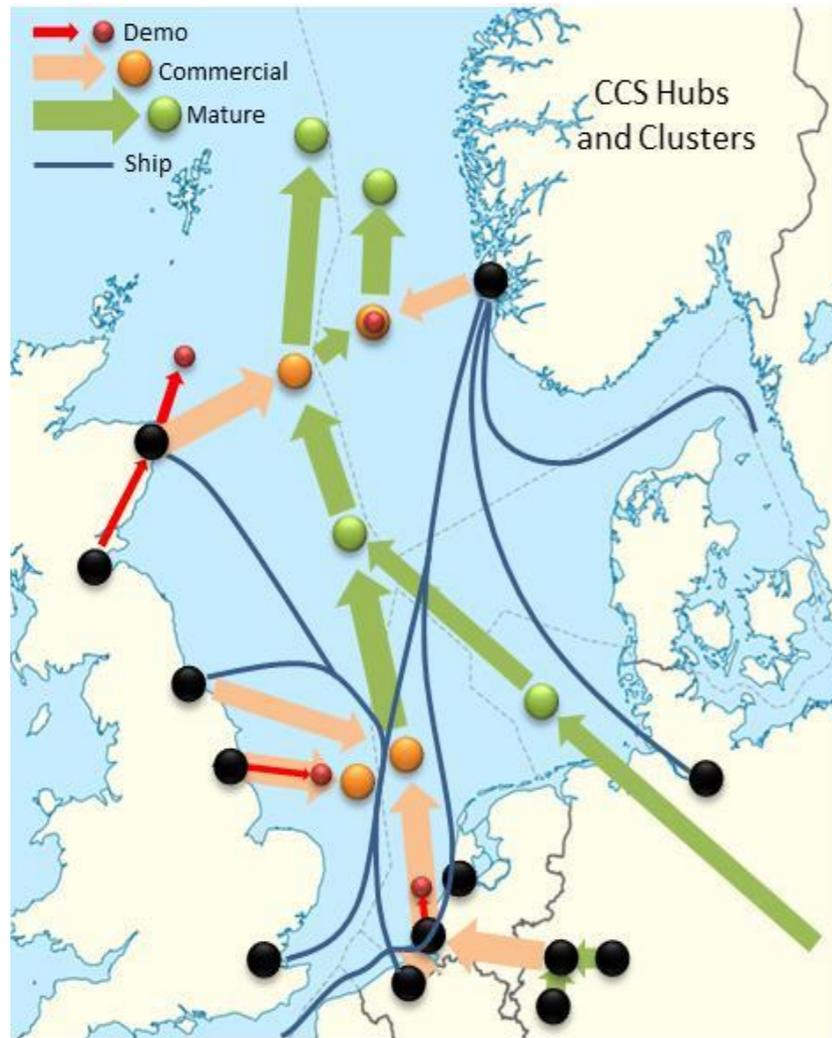
## CCS Ambition of the port of Rotterdam

Storage in the North Sea gas fields | Pernis-Maasvlakte Pipeline | Capture on location at companies



Source: Port of Rotterdam

# Many 2030-2050 visions on CCS



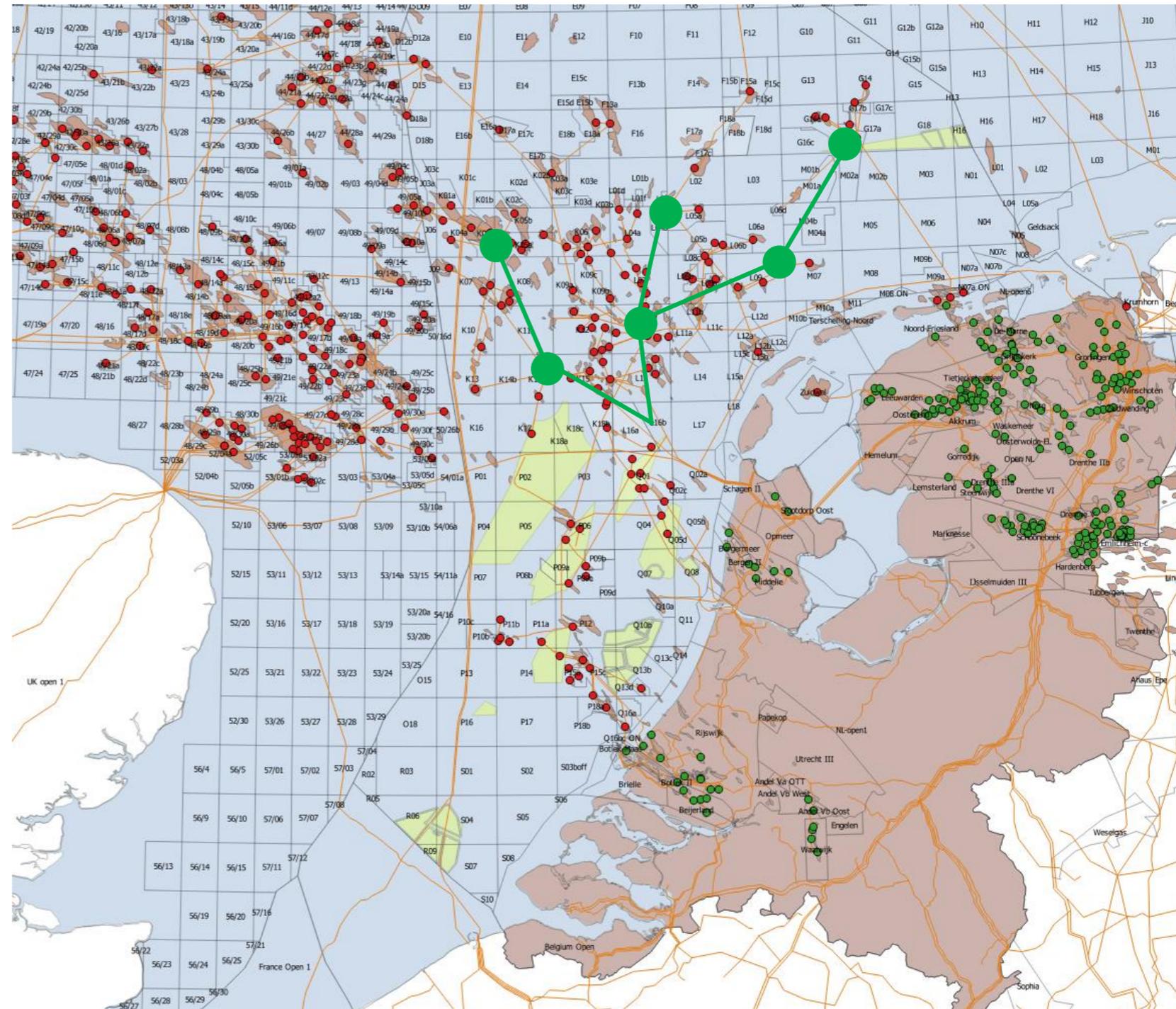
# Electrification

Objective:

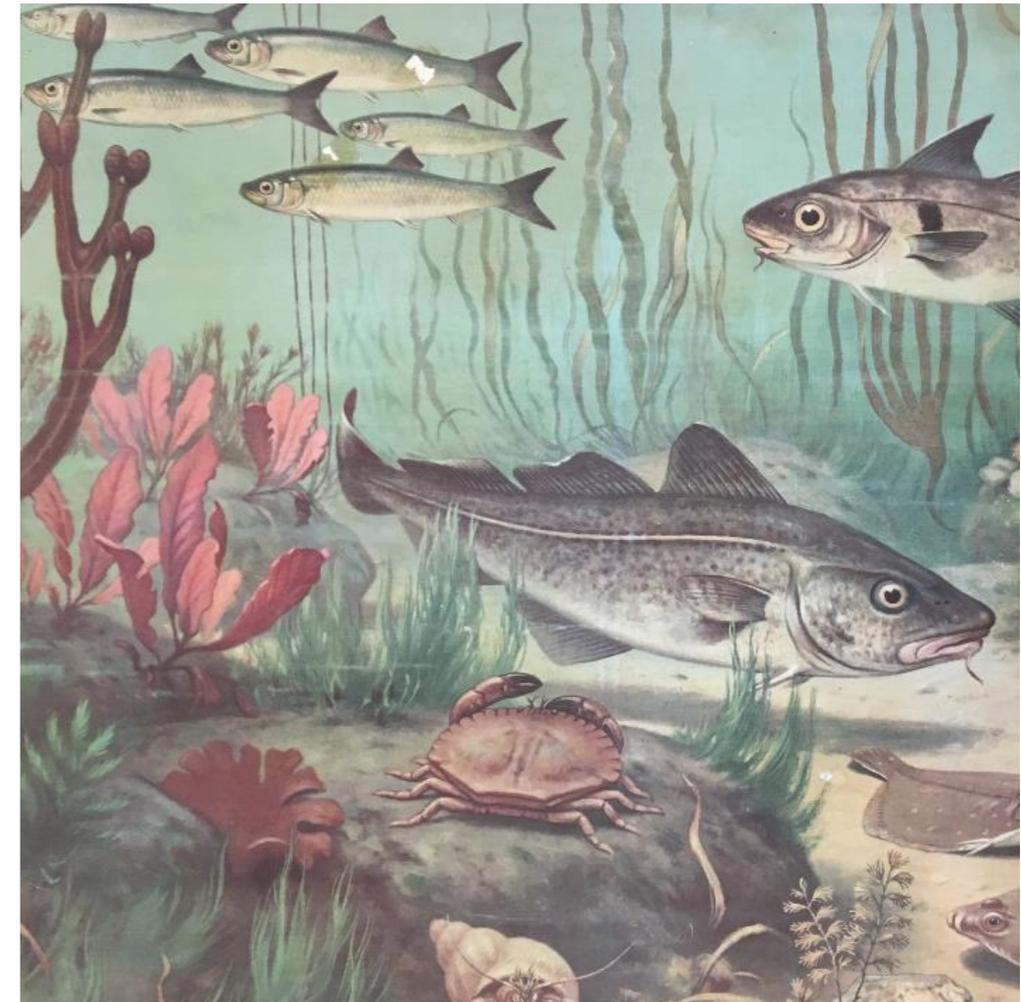
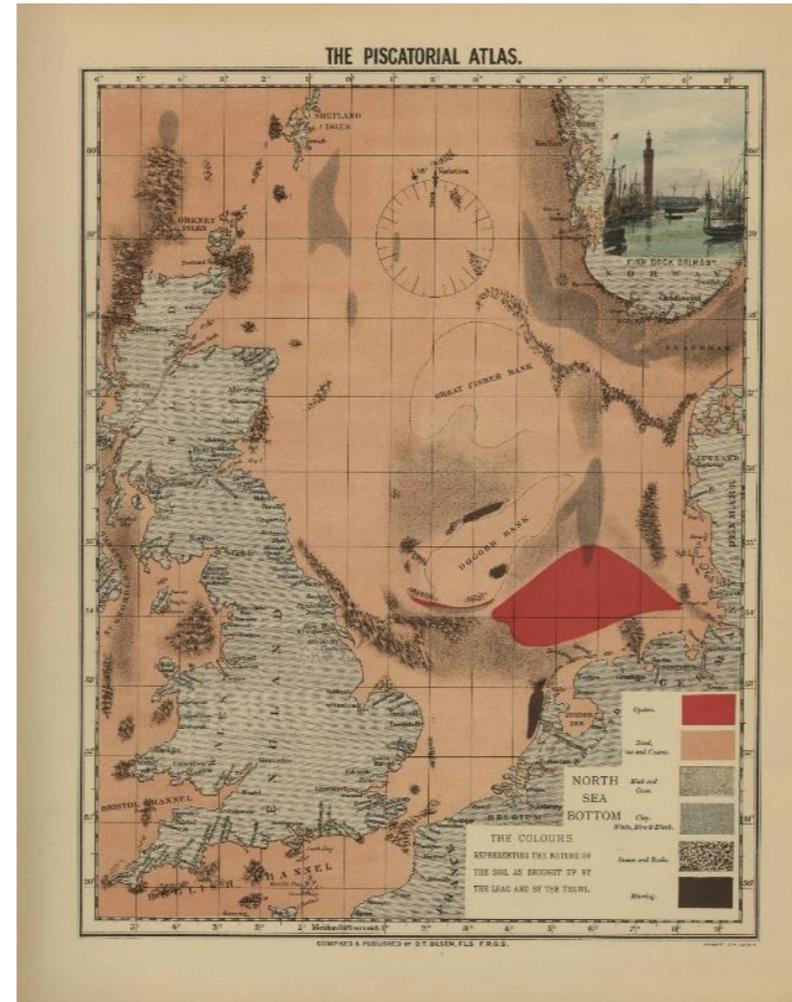
- Reduce future CO2 and other emissions on offshore platforms

What is needed:

- Connectors between windparks and platforms
- Brown field modifications on platforms
- Working ETS
- Regulatory framework



# Nature as it once was

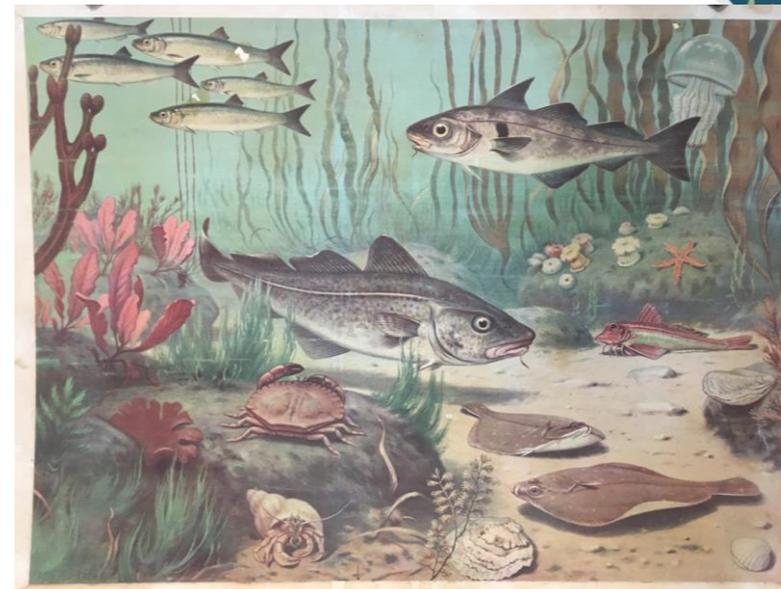


# Return to nature

- Should we dismantle the platforms or investigate ways of continue using the lower part i.e. the steel jackets to preserve and restore the North Sea's marine habitat?

## Platforms naturally!

- Platforms Naturally is a temporary (15 years) research and demonstration pilot project with which we aim to discover if, and how, jackets can contribute to improving nature.

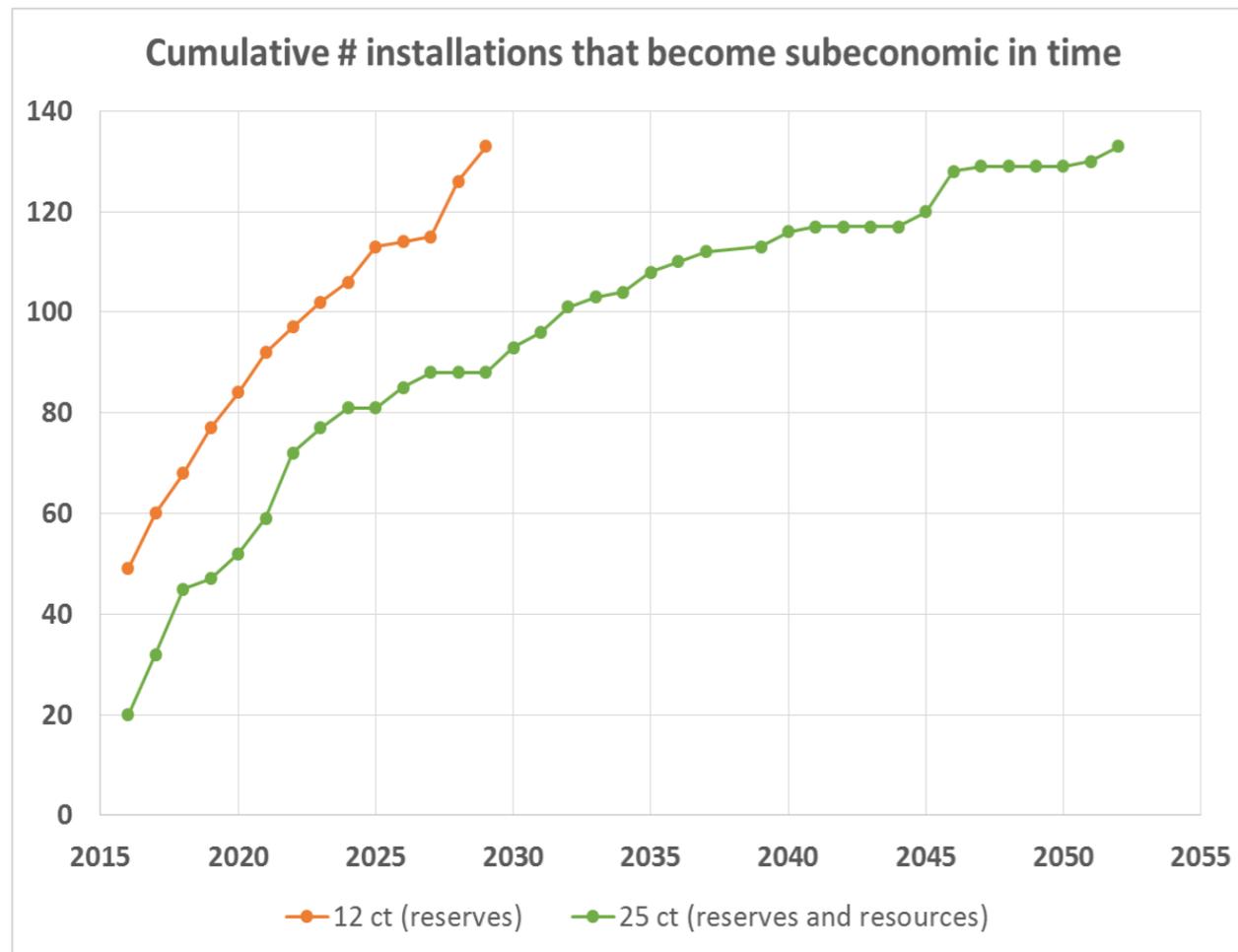


# Optimize for the future

- The Energy transition will transform the Dutch part of the North Sea
- The compact spatial use of our (sub)surface offers future opportunities
- We aim at an effective integral planning of the (re-)use of oil and gas infrastructure:
  - Decline in gas production
  - Rise of renewables, CO<sub>2</sub> storage
  - Timing = priority topic 2018
- This requires a joint industry approach
- All stakeholders to take the next step



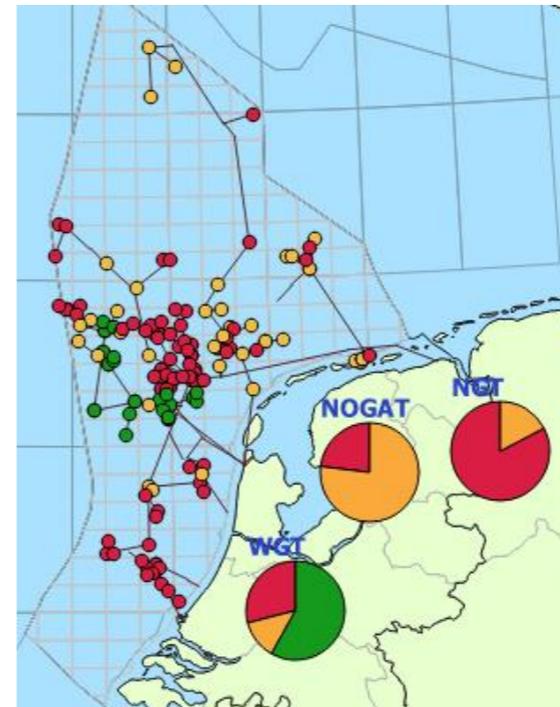
# Urgency: COP approaching rapidly



**COP based on reserves**

- 2016 - 2019
- 2020 - 2025
- $\geq 2026$

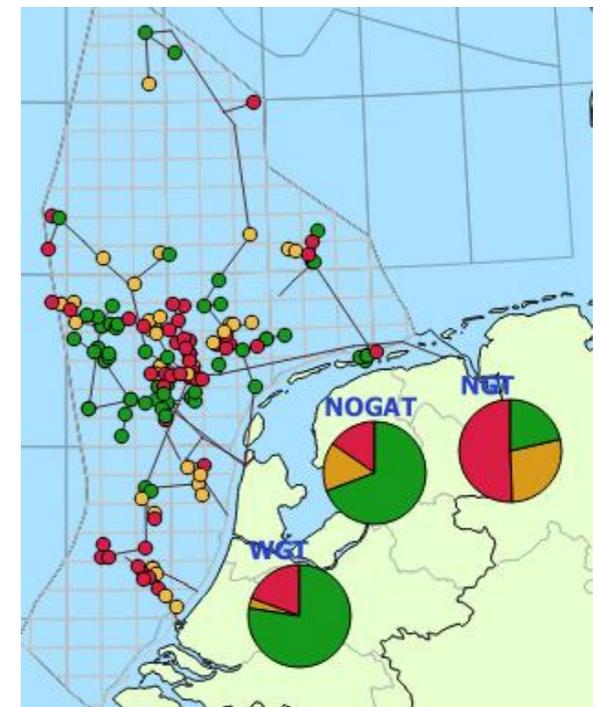
12 ct/m<sup>3</sup>



**COP based on reserves & cont/prosp resources**

- 2016 - 2019
- 2020 - 2025
- $\geq 2026$

25 ct/m<sup>3</sup>

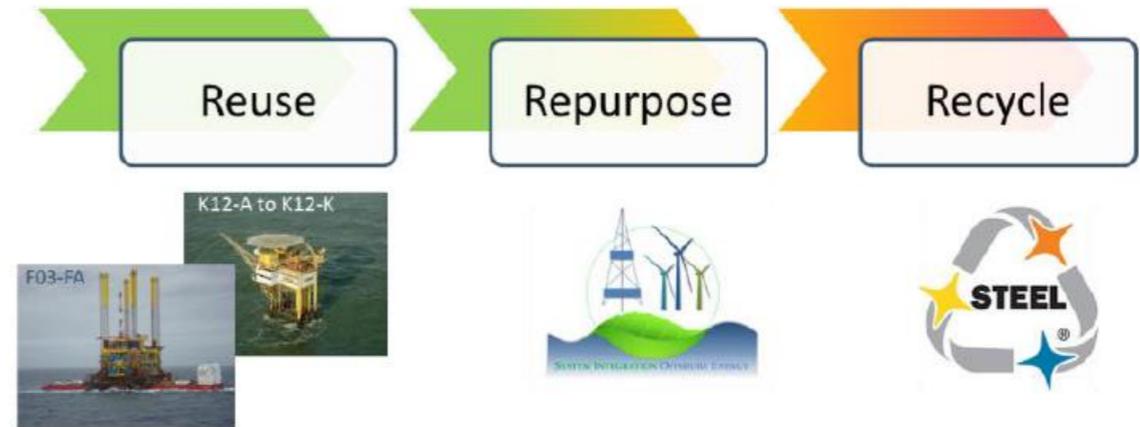


# NL Masterplan Decommissioning & Re-use (2016)

Objective: to provide clarity what needs to be done (by whom) to jointly and successfully re-use and decommission the Dutch E&P infrastructure:



- ! Safe
- 🌍 Sustainable
- 💰 Cost effective
- 📄 Within regulations



Continually striving for zero safety incidents and minimum environmental impact

Developing NL capabilities will have positive impact on the international Decom market

## Nexstep launched on 10 October 2017

- Full house
- Interaction with audience
- Comments by NGO Stichting de Noordzee well received



# Masterplan Decom & Re-use in execution

## Initial priorities (2017, continue in 2018)



*Establish a National Platform*



*Establish a National Decommissioning Database*



*Promote effective and efficient regulation*



*Establish mechanisms to share learnings*

## Mid-term objectives (2018)



*Foster effective collaboration*



*Support Quality, Cost-effective Standardisation*



*Stimulate innovative decommissioning*



*Build on International experiences*

## Execution levers (2017, continue in 2018)

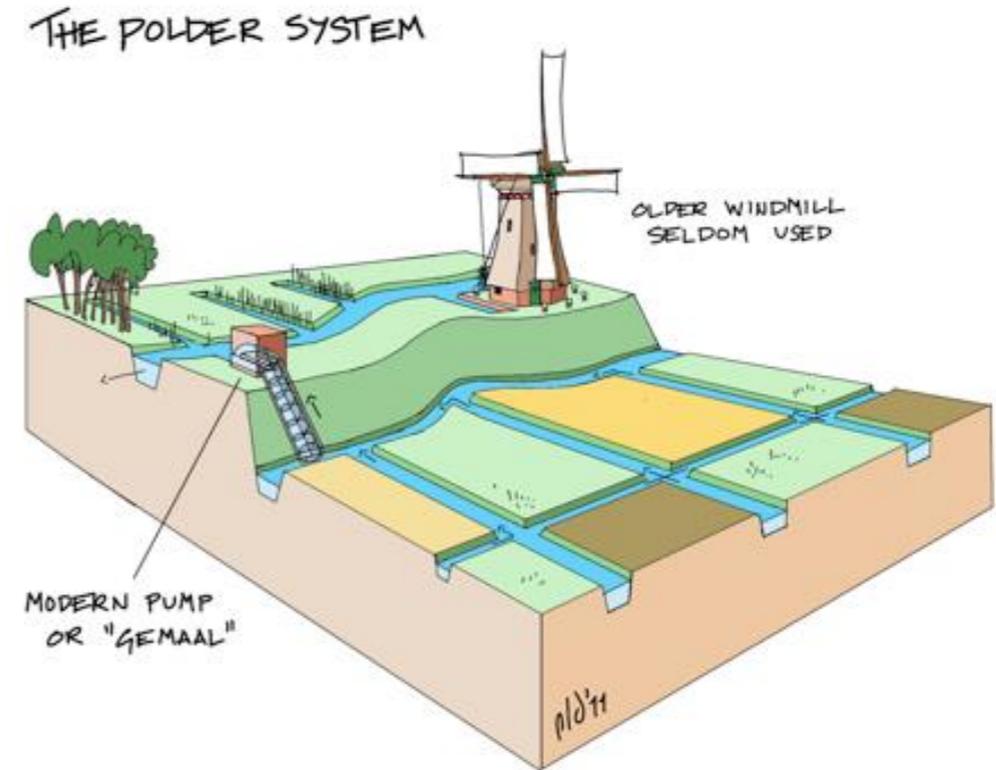
*Identify key stakeholders*



*Launch a Tailored Communications Plan*

# Nexstep designed & founded in 7 months

- Involvement of the Ministry of Economic Affairs
- Small group of primary stakeholders: 12 operators
- Dutch regulatory system: the intent rather than the letter
- The Dutch way of cooperation: “poldermodel”



# Summary

- Oct 2016:
  - NL Masterplan for Decommissioning & Re-use developed
- H1 2017:
  - Operators and EBN executed the Masterplan (in JIP format)
    - priority topics + execution levers
    - Design National Platform (and website) as main deliverable
- H2 2017:
  - Set-up fully operational National Platform
  - Lay-out & launch of the National Platform
- 2018:
  - Execution of Masterplan through National Platform Nexstep
  - International alignment on re-use & decommissioning



Thank you!



[www.nexstep.nl](http://www.nexstep.nl)



# Discussion

