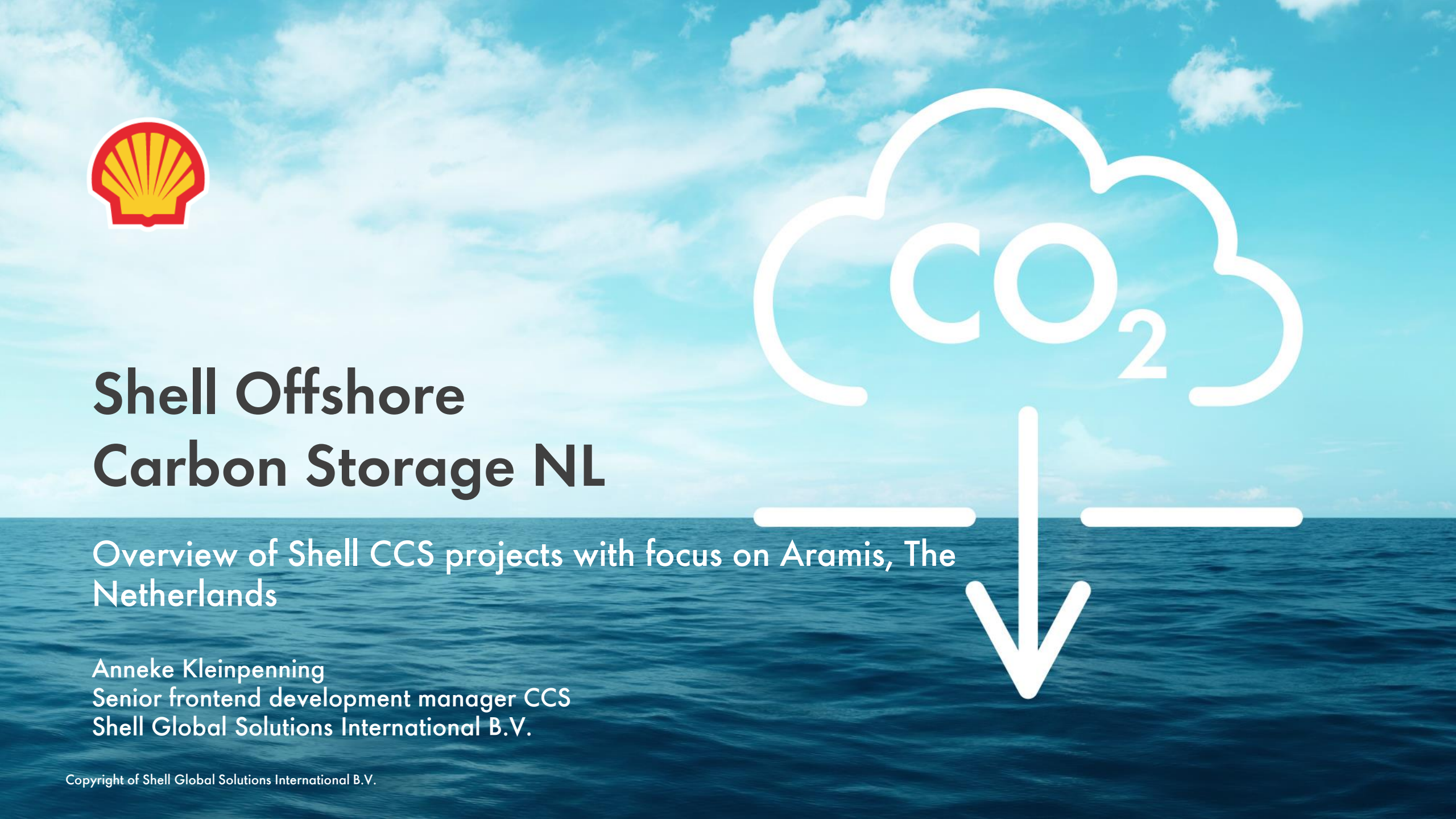


# Shell Offshore Carbon Storage NL

## Overview of Shell CCS projects with focus on Aramis, The Netherlands

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Shell Global Solutions International B.V.

# Definitions & cautionary note

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**Shell's Net Carbon Intensity**

Also, in this presentation we may refer to Shell's "Net Carbon Intensity" (NCI), which includes Shell's carbon emissions from the production of our energy products, our suppliers' carbon emissions in supplying energy for that production and our customers' carbon emissions associated with their use of the energy products we sell. Shell's NCI also includes the emissions associated with the production and use of energy products produced by others which Shell purchases for resale. Shell only controls its own emissions. The use of the terms Shell's "Net Carbon Intensity" or NCI are for convenience only and not intended to suggest these emissions are those of Shell plc or its subsidiaries.

**Shell's net-zero emissions target**

Shell's operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, they reflect our Scope 1, Scope 2 and NCI targets over the next ten years. However, Shell's operating plans cannot reflect our 2050 net-zero emissions target, as this target is currently outside our planning period. In the future, as society moves towards net-zero emissions, we expect Shell's operating plans to reflect this movement. However, if society is not net zero in 2050, as of today, there would be significant risk that Shell may not meet this target.

**Forward-Looking non-GAAP measures**

This presentation may contain certain forward-looking non-GAAP measures such as **cash capital expenditure** and **divestments**. We are unable to provide a reconciliation of these forward-looking non-GAAP measures to the most comparable GAAP financial measures because certain information needed to reconcile those non-GAAP measures to the most comparable GAAP financial measures is dependent on future events some of which are outside the control of Shell, such as oil and gas prices, interest rates and exchange rates. Moreover, estimating such GAAP measures with the required precision necessary to provide a meaningful reconciliation is extremely difficult and could not be accomplished without unreasonable effort. Non-GAAP measures in respect of future periods which cannot be reconciled to the most comparable GAAP financial measure are calculated in a manner which is consistent with the accounting policies applied in Shell plc's consolidated financial statements.

The contents of websites referred to in this presentation do not form part of this presentation.

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# CCS IN SHELL PROJECTS
# SHELL'S 2024 CCS PROJECT PORTFOLIO

**1. Quest *(Canada)***

CCS facility operated by Shell that captures, transports and stores more than a million tonnes of $CO_2$ every year from the Scotford Upgrader.

**2. Polaris /Atlas *(Canada)***

CCS project to capture $CO_2$ from Shell's Scotford refinery and chemicals plant for storage with growth from other emitters.

**3. Louisiana Hub * *(USA)***

Development of a CCS project in Louisiana focused on Shell's $CO_2$ footprint at the Norco, Convent, and Geismar facilities. It will also act as a CCS hub for other emitters in the region.

**4. Acorn * *(Scotland)***

Shell UK, Storegga and Harbour Energy are equal partners in the Acorn project, to provide critical CCS and hydrogen infrastructure for the UK.

**5. Pernis to Porthos *(NL)***

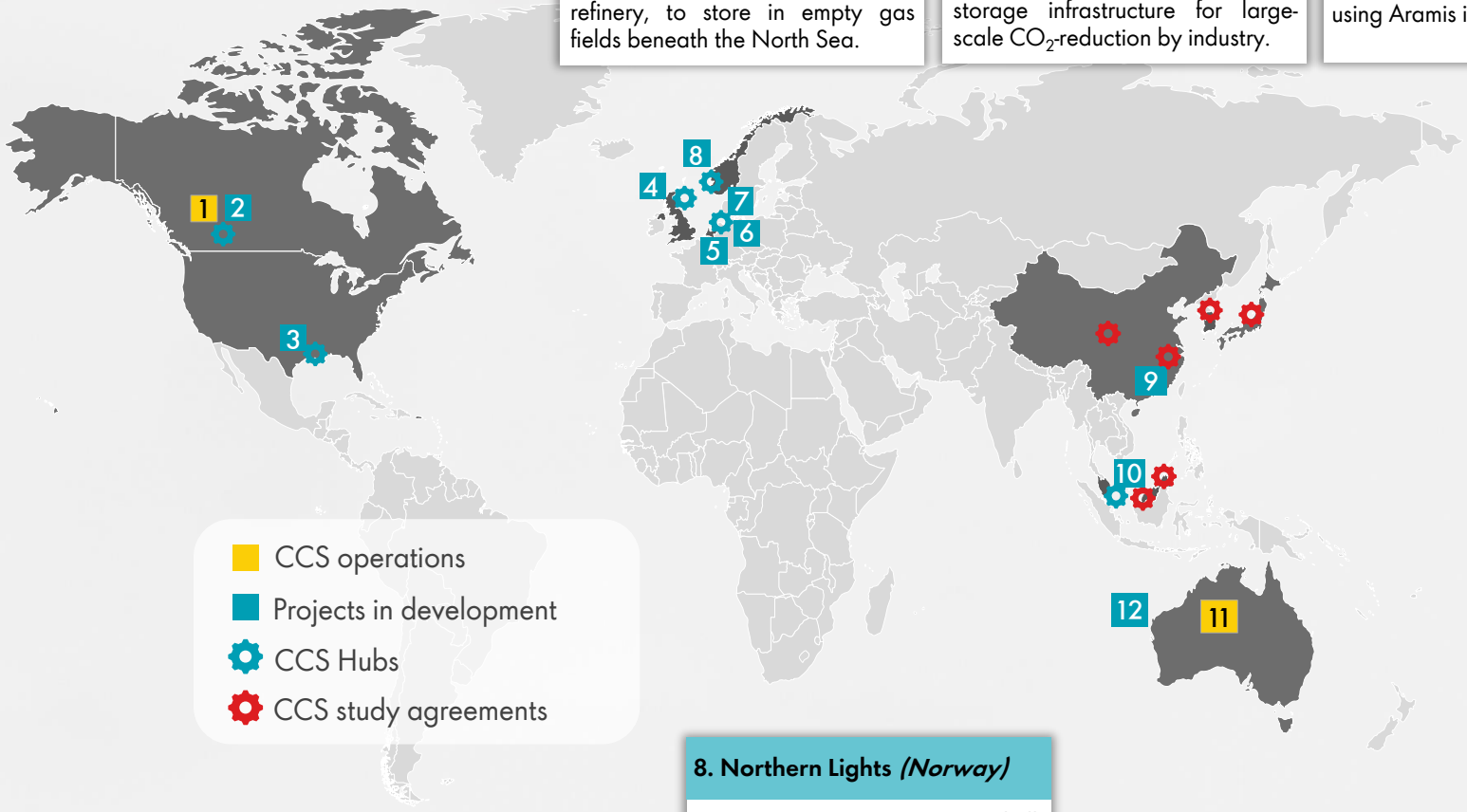
Porthos JV between EBN, Gasunie and the Port of Rotterdam will transport $CO_2$ from industrial plants, including Shell's Pernis refinery, to store in empty gas fields beneath the North Sea.

**6. Aramis * *(NL)***

Shell Netherlands, TotalEnergies, Energie Beheer Nederland and Gasunie partnership to develop $CO_2$ transport and offshore storage infrastructure for large-scale $CO_2$-reduction by industry.

**7. Shell Offshore Carbon Storage NL * *(NL)***

SOCS NL will offer $CO_2$ storage capacity in the Dutch sector of the North Sea and transport solutions using Aramis infrastructure.




**8. Northern Lights *(Norway)***

A joint venture between Shell, TotalEnergies and Equinor to transport $CO_2$ from industrial plants to store in a reservoir in the Norwegian North Sea.

**9. Daya Bay * *(China)***

A partnership with CNOOC and ExxonMobil to explore offshore storage of $CO_2$ to be captured from petrochemical plants and others in the Guangdong region.

**10. Asia-Pacific Hub ***

Shell is exploring the creation of a CCS hub in Asia-Pacific to help reduce $CO_2$ emissions, including emissions from Shell's LNG customers.

**11. Gorgon *(Australia)***

Shell Australia holds a 25% stake in the Gorgon liquified natural gas project that uses CCS to capture $CO_2$ produced.

**12. Angel CCS * *(Australia)***

A joint venture with Woodside, Shell, BP, Chevron, and MIMI to develop a CCS hub offshore North-West Australia.

# Shell $CO_2$ transport & storage projects in Europe

## UK Northern North Sea

- Shell is partner in Acorn in UK
- Developing the GoldenEye field and associated fairway, part of wider Scottish Cluster decarbonisation
- Shipping and pipeline connections to Scotland central belt

## Southern UK

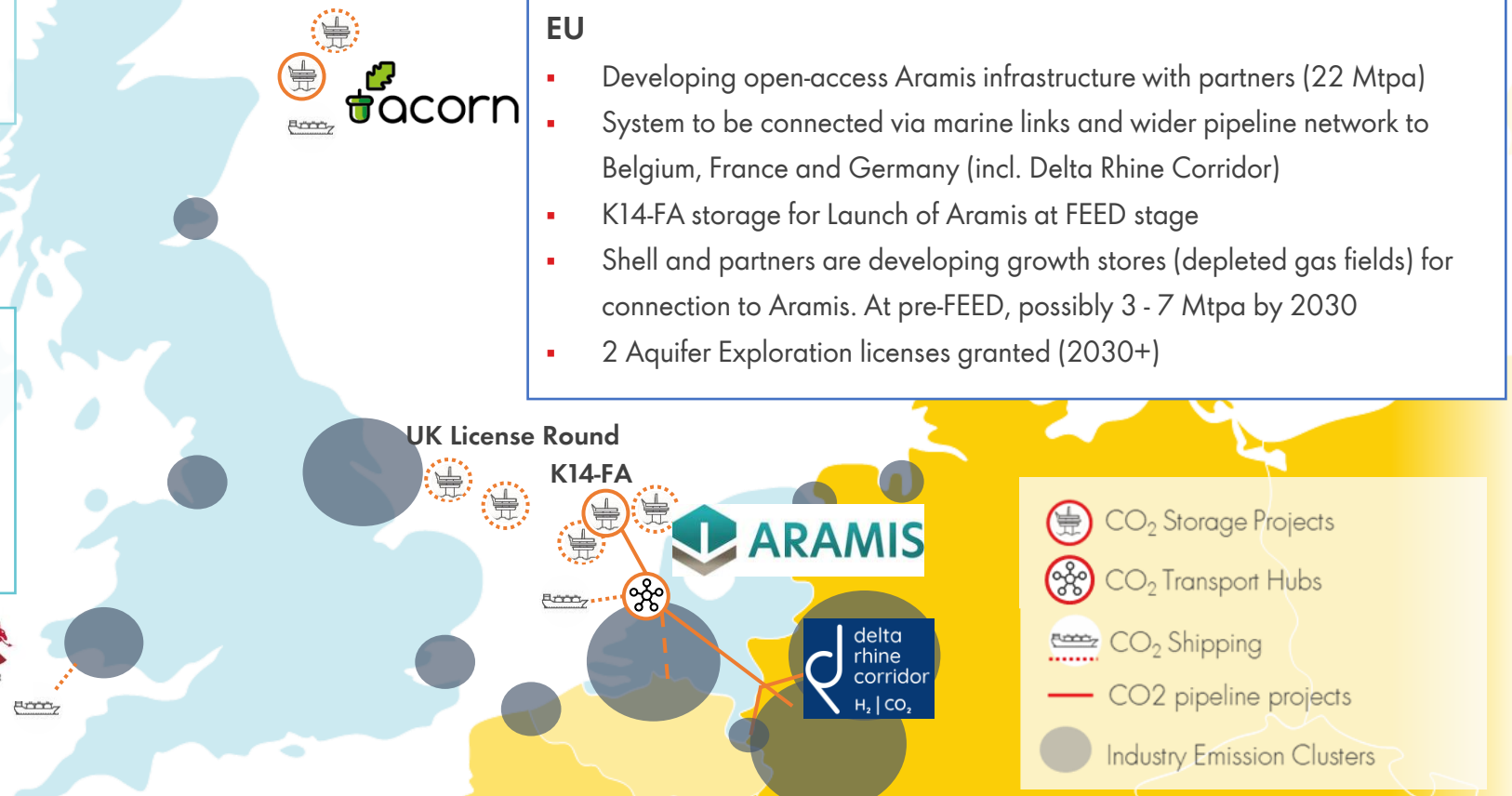
- Successful in the UK carbon storage licensing round, including large-scale storage opportunities
- South Wales Industrial Cluster to export $CO_2$ via shipping

## Norway

- Shell is partner in Northern Lights
- Construction complete end Q3
- First CO2 delivery early 2025
- Customers connected via CO2 transport ships

## EU

- Developing open-access Aramis infrastructure with partners (22 Mtpa)
- System to be connected via marine links and wider pipeline network to Belgium, France and Germany (incl. Delta Rhine Corridor)
- K14-FA storage for Launch of Aramis at FEED stage
- Shell and partners are developing growth stores (depleted gas fields) for connection to Aramis. At pre-FEED, possibly 3 - 7 Mtpa by 2030
- 2 Aquifer Exploration licenses granted (2030+)

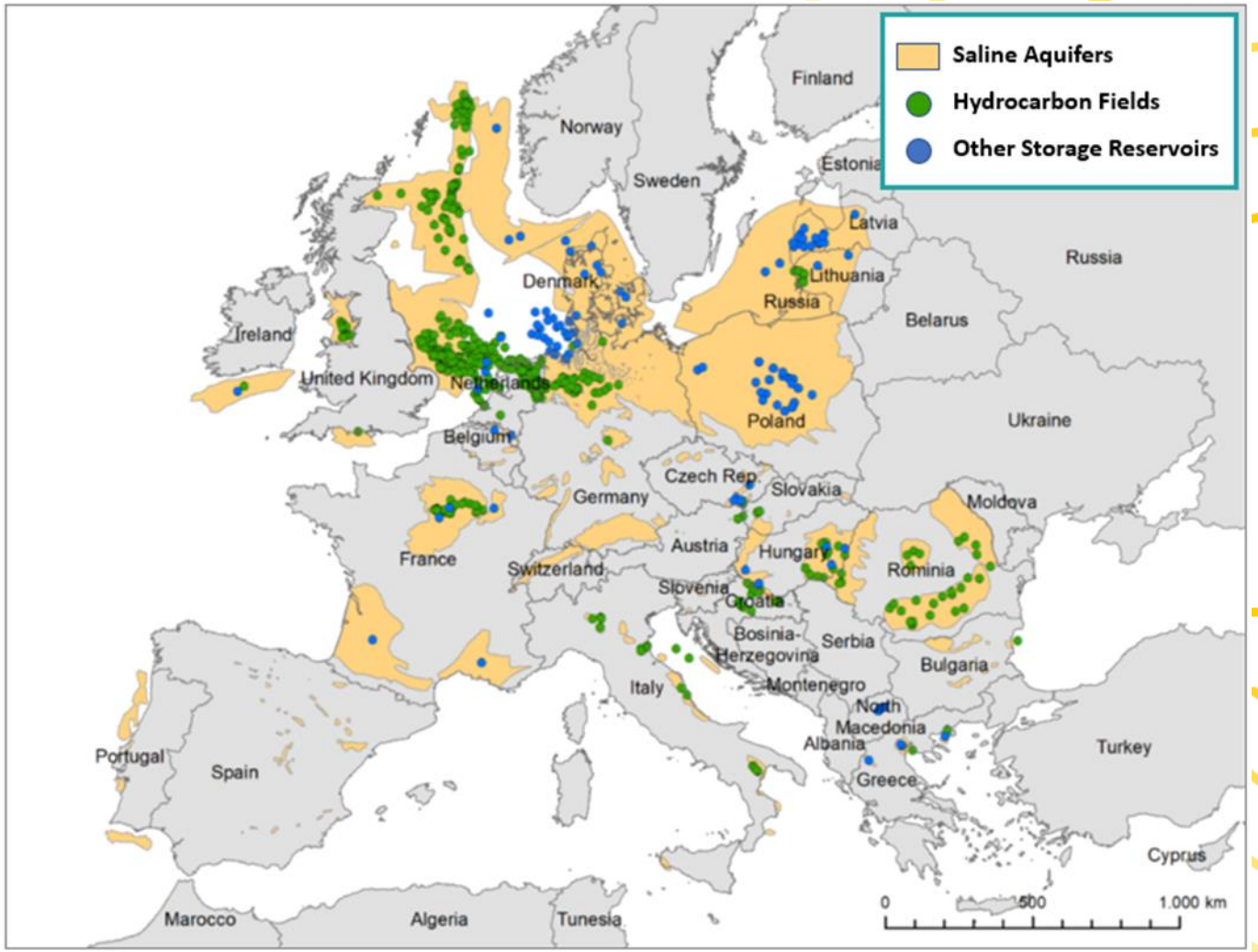


# Storage space in the EU based on IPCC / CATF studies

The IPCC & CATF studies states

- By 2050 ca 100 Gt storage capacity required to meet climate goals
- In the EU, 115 Gt storage capacity, 95 Gt in aquifers and 20 Gt in depleted fields.
- NorthSea has ca 12Gt storage capacity in depleted fields

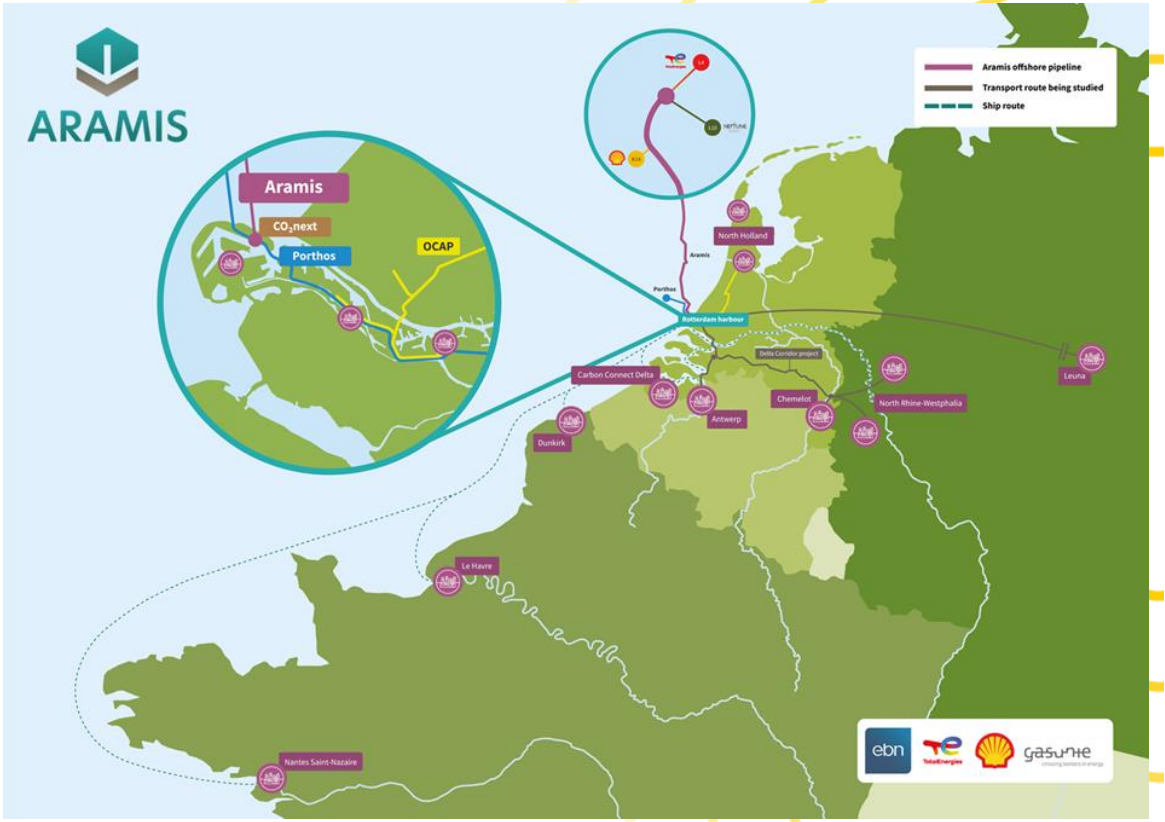
Only 10% of the depleted fields in the EU are within 50km of shore, so they can be developed by gaseous injection or heated $CO_2$




EU-CO2-storage-summary_GEUS-report-2021-34_Oct2021

# Shell operated store* developed as part of Aramis Launch phase

- Aramis is an open access transport hub for NorthWest Europe
  - Aramis trunkline developed by TTE, Shell, GasUnie, EBN
- Aramis offshore pipeline capacity of 22 Mtpa
- Design life 30 years, storage capacity ~ 600 Mt
- Pipeline of 200km will transport dense phase $CO_2$ to the depleted fields (at 180 bar, seawater temperature)
- FEED started Nov23, expected to be on stream in 2028 / 2029
- Aramis will enable connections to several European clusters
- Strong cooperation needed across the CCS value chain
  - Shell/TTE/ENI launch stores (ca 8 Mtpa)
  - Emitters (could be as many as 15-20 for Launch)
  - Porthos (compression & onshore pipeline), $CO_2$next (terminal), OCAP (onshore pipeline), Delta Rhein Corridor (dense phase $CO_2$ pipeline), ships
  - Dutch government (permits, licenses, regulations, subsidies)




*Please also refer to Shell presentations on CO2 injection in depleted fields & CO2 specifications for storage and transport hubs and the Aramis website* Aramis CCS | Homepage (aramis-ccs.com)

*) Partnership with EBN, One-Dyas, Wintershall and RockRose