

# CO<sub>2</sub> storage projects in Europe

Overview of existing and planned CO<sub>2</sub> storage projects in Europe

## BULGARIA

1. ANRAV (IF)

## CROATIA

1. Petrokemija Kutina\*
2. Bio-Refinery Project\*
3. CCGeo (IF)
4. CO<sub>2</sub> EOR Project Croatia\*

## DENMARK

1. **Greensand\***
2. Bifrost\*
3. Stenlille demo CO<sub>2</sub>-storage
4. Norne
5. Ruby

## FRANCE

1. Pycasso\*

## GREECE

1. Prinos CCS

## ICELAND

1. **Orca**
2. **Silverstone** (IF)
3. Coda Terminal (IF)
4. Mammoth

## ITALY

1. Ravenna CCS\*

## THE NETHERLANDS

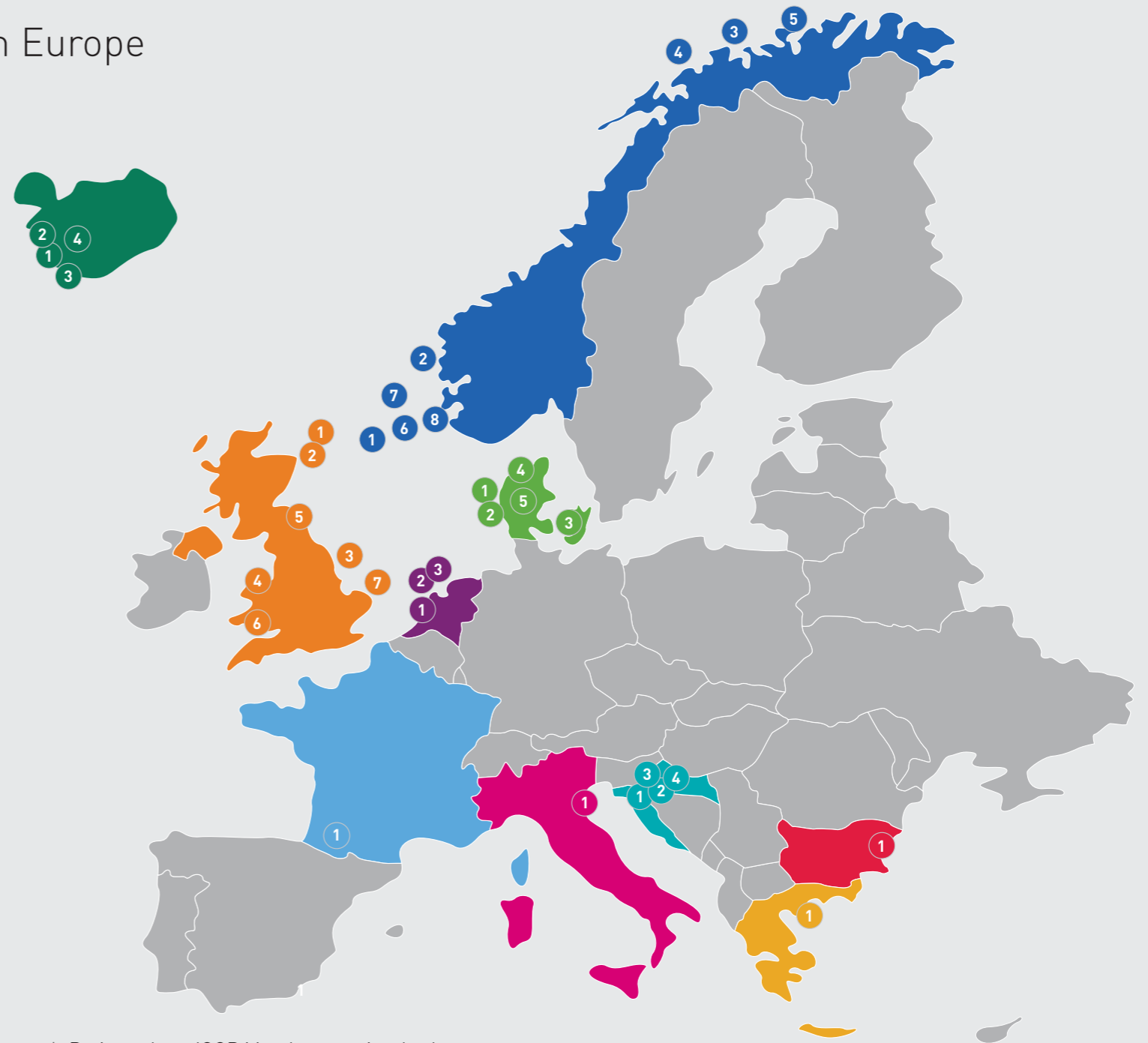
1. Porthos\* (PCI)
2. Aramis\* (PCI)
3. L10 CCS\*

## NORWAY

1. **Sleipner\***
2. Longship (includes Northern Lights)\* (PCI)
3. Barents Blue
4. **Snøhvit\***
5. Smeaheia\*
6. Trudvang\*
7. Luna\*
8. Havstjerne\*

## UK

1. Acorn\*
2. Caledonia Clean Energy
3. Zero Carbon Humber\*
4. HyNet\*
5. Net Zero Teesside\*
6. South Wales Industrial Cluster
7. Bacton Thames Net Zero initiative\*



\* Project where IOGP Members are involved  
 Projects listed in **bold** are in operation  
 (PCI) – Project of Common Interest  
 (IF) – Project supported by the EU Innovation Fund

EU	16 projects - 35 MtCO <sub>2</sub> /yr by 2030
Europe	35 projects - 105 MtCO <sub>2</sub> /yr by 2030

LOCATION	NO. ON MAP	PROJECT NAME	ELEMENTS OF CCS VALUE CHAIN COVERED	TYPE OF CAPTURE PROJECT	DESCRIPTION	PARTICIPANTS	STATUS OF THE PROJECT	PLANNED START OF OPERATIONS DATE	CO <sub>2</sub> STORAGE INJECTION CAPACITY AT START DATE (MTPA)	CO <sub>2</sub> STORAGE INJECTION CAPACITY AFTER EXPANSION (MTPA)	TYPE OF CO <sub>2</sub> STORAGE
Bulgaria	1	<a href="#">ANRAV</a>	Capture Transport Storage	Hard To Abate Industry (cement plant)	ANRAV aims to develop the first full CCS value chain project in Bulgaria and in Eastern Europe. The objective is to capture the CO <sub>2</sub> streams at the Devnya cement plant in Varna (HeidelbergCement group) and through an onshore and offshore pipeline system to store them in a depleted gas field in the Black Sea. Subject to regulatory and permitting aspects, the full-chain CCS project could be operational on 2028.	Devnya Cement (Heidelberg Cement), Petroceltic Bulgaria EOOD	Early Development	2028	0.8	no data	Offshore - Depleted Gas Field (Galata), Black Sea
		Project supported by EU Innovation Fund									
Croatia	1	<a href="#">Petrokemija Kutina</a>	Capture Transport Storage	Fuel Production (Ammonia)	A pilot, full chain CCS project is currently being conducted at the Petrokemija ammonia production plant at Kutina where natural gas is used as the main feedstock. More specifically, CO <sub>2</sub> will be captured and transported via the existing pipeline infrastructure to be stored at the depleted oil and gas fields which are found close to Ivanić Grad, a town 41 km east of Zagreb. The project intends to capture, transport and inject 190.000 tonnes of CO <sub>2</sub> per year.	MOL Group, Petrokemija	Early Development	2026	0.19	no data	Onshore - Depleted Oil & Gas Fields (Ivanić & Žutica)
	2	<a href="#">Bio-Refinery Project</a>	Capture Transport Storage	Fuel Production (Biofuels)	A pilot, full chain CCS project which is part of an advanced bioethanol production plant currently being developed at the Sisak refinery site, where advanced bioethanol from biomass will be produced. More specifically, CO <sub>2</sub> will be captured and transported via the existing pipeline infrastructure to be stored at the depleted oil and gas fields which are found 40 km away from the site. The project intends to capture, transport and inject 55.000 tonnes of CO <sub>2</sub> per year.	MOL Group	Early Development	2024	0.055	no data	Onshore - Depleted Oil & Gas Fields
	3	<a href="#">CCGeo</a>	Capture Transport Storage	Power Production (BECCS)	CCGeo stands for Closed Carbon Geothermal Energy – A full chain CCS project which intends to make use of a novel combination of existing technologies to generate electricity and heat from the geothermal brine and from the natural gases dissolved into it. The associated CO <sub>2</sub> which will be produced will be injected back at the same reservoir from which the geothermal brine was extracted.	AAT Geothermae, CLEAG	Advanced Development	2022	no data	no data	Onshore - Saline Aquifer
		Project supported by EU Innovation Fund									
4	<a href="#">CO<sub>2</sub> EOR Project Croatia</a>	Capture Transport Storage	Upstream Oil & Gas (EOR)	At Gas Treatment Plant (GTP) found at Molve Municipality 640.000 m <sup>3</sup> /d of CO <sub>2</sub> are produced from the purification of natural gas. The CO <sub>2</sub> is compressed at 30 bar, dehydrated and transported via onshore pipeline 88 km long to the Fractionation Facilities of Ivanić Grad. Subsequently, the CO <sub>2</sub> is compressed, liquefied and transported (200 bar) for injection at the mature oil fields Ivanić and Žutica for Enhanced Oil Recovery.	MOL Group	In operation	The injection of CO <sub>2</sub> in Ivanić oilfield started in October 2014 and northern part of Žutica oilfields in October 2015.	no data	no data	Onshore - Depleted Oil & Gas Fields (Ivanić & Žutica)	

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Denmark	1	<a href="#">Greensand</a>	Transport Storage	Not applicable	Greensand project has successfully entered its demonstration phase on Wednesday 8th of March 2023 marking a milestone for the CCS industry, since it became the first operational full value chain CCS project in Europe. More specifically CO <sub>2</sub> was captured at the INEOS Oxide site (chemical industry) in Antwerp, Belgium, shipped cross border and stored permanently 1800 meters below the seabed, at the Danish Nini West field (depleted oil field) in the southern North Sea. Following its successful demonstration phase, the full scale deployment of Greensand project is anticipated by 2025 with a CO <sub>2</sub> storage capacity of 8 Mtpa.	Wintershall Dea, INEOS Oil, Energy Cluster Denmark, Blue Water Shipping, SpotLight, Danish Technological Institute, Welltec, Semco maritime, Maersk Drilling, GEUS, Geelmuyden Kiese, Ramboll, Aker Carbon Capture, Resen Waves, Magesis Fairfield, ESVAGT, DTU, Wind Power Lab, DHI, Dan-Unity CO <sub>2</sub> , University of Southampton, National Oceanography Centre, EUDP, Schlumberger New Energy	In operation	If successful, the pilot would lead to full-scale CO <sub>2</sub> storage in the Nini West field by 2025	1.5	8	Offshore - Depleted Oil & Gas Field (Nini West), Danish North Sea
	2	<a href="#">Bifrost</a>	Transport Storage	Not applicable	Bifrost project is evaluating the potential for CO <sub>2</sub> transport and storage at the Harald field and at several other reservoirs found at the Danish Underground Consortium (DUC) North Sea . The use of existing pipeline infrastructure connecting the DUC fields to Denmark is also evaluated for CO <sub>2</sub> transport.	TotalEnergies, Noreco, Nordsøfonden, Ørsted, The Technical University of Denmark (DTU)	Early Development	2030  Expansion date: 2032	3	16	Offshore - Depleted Oil & Gas Field (Harald West), Danish North Sea
	3	<a href="#">Stenlille demo CO<sub>2</sub>-storage</a>	Storage	Not applicable	The Stenlille aquifer (which is also used for gas storage) does not have a large CO <sub>2</sub> storage capacity. However, the project offers low-risk and an easily accessible CO <sub>2</sub> -storage option. In 2023 the FID is expected. This project could store 0.5 Mtpa CO <sub>2</sub> by 2025.	GEUS, Gas Storage Denmark	Advanced Development	2025	0.5	Expansion is not possible	Onshore - Saline Aquifer (Stenlille)
	4	<a href="#">Norne</a>	Storage	Not applicable	Norne is a CO <sub>2</sub> storage project which has been announced by the Danish Energy Agency (DEA). No further details about the project are publicly available.	no data	no data	no data	no data	no data	no data
	5	Ruby	Storage	Not applicable	Ruby is a CO <sub>2</sub> storage project which has been announced by the Danish Energy Agency (DEA). No further details about the project are publicly available.	no data	no data	no data	no data	no data	no data
France	1	<a href="#">Pycasso - PYreanean Carbon Abolition through Sustainable Sequestration Operations</a>	Capture Transport Storage	Cluster (multiple industrial sources)	Pycasso stands for PYreanean Carbon Abolition through Sustainable Sequestration Operations. PYCASSO project investigates the opportunity to decarbonise the heavy industry located onshore South West France and North Spain through the establishment of a large CCUS hub. The project aims to take advantage of the large depleted gas fields of the area which have been producing the last 60 years.	Avenia, CAPBP, Teréga, Schlumberger, Lafarge, Repsol, UPPA, BRGM, IFPEN, Sofresid, Geostock, SNAM	In Planning	2030	1	no data	Onshore - Depleted Gas Fields, South West of France

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Greece	1	<a href="#">Prinos CCS</a>	Transport Storage	Not applicable	The project aims to convert the mature Prinos oilfield in Greece into a CO <sub>2</sub> storage facility. If approved by the Greek government, the project would be the first of its kind in the Mediterranean region. The Prinos oil field could provide permanent storage of CO <sub>2</sub> captured from local emission sources (up to 150 km away) and piped to the facility. For the more distant emission sources, CO <sub>2</sub> could be liquified and shipped to an intermediate storage facility onshore (Sigma Site), before being injected for offshore storage to Prinos oilfield.	Energiean	Early Development	2027	1.2	no data	Offshore - Semi Depleted Prinos Oil Field & Saline Aquifer, North Aegean Sea
Iceland	1	<a href="#">Orca</a>	Capture Transport Storage	Direct Air Capture	Climeworks' Orca plant is the world's first and largest Direct Air Capture and mineral storage plant. Orca plant was built in 15 months, has been in operation till Sept 2021 and has the capacity of capturing and storing 4.000 tons of CO <sub>2</sub> per year. More specifically, the CO <sub>2</sub> which is captured from the atmospheric air is mixed with water and injected into nearby basaltic rock-formations to be permanently turned into stone.	Climeworks, Carbfix	In operation	In operation	0.004	no data	Onshore - Basalt rock formations
	2	<a href="#">Silverstone</a>	Capture Transport Storage	Power Production (BECCS)	The Silverstone project will apply Carbfix technology in a new CO <sub>2</sub> -optimized capture plant at the Hellisheidi geothermal power plant in Iceland. More specifically, by 2025 with the addition of the Silverstone project (25.000 tCO <sub>2</sub> /year) to the existent pilot scale CO <sub>2</sub> capture facilities (12.000 tCO <sub>2</sub> /year), 37.000 tCO <sub>2</sub> /year will be captured, dissolved into the water and injected into basaltic formations for permanent mineral storage.	Carbfix, ON Power	In operation	2025	0.037	no data	Onshore - Basalt rock formations
		Project supported by EU Innovation Fund									
	3	<a href="#">Coda Terminal</a>	Transport Storage	Not applicable	The Coda Terminal aspires to establish a cross-border CO <sub>2</sub> transport and storage hub in Iceland. Liquefied CO <sub>2</sub> carriers will import CO <sub>2</sub> from several countries across North Europe starting from 2026 with 0,5 Mtpa. The terminal will be upgraded gradually with its capacity to reach 3Mtpa by 2031. The imported CO <sub>2</sub> will be initially stored into onshore tanks at the premises of the terminal and then by using a network of CO <sub>2</sub> pipelines and nearby injection wells, will be permanently stored into the basaltic bedrock.	Carbfix, Dan-Unity CO <sub>2</sub> A/S	Early Development	2026	0.5	3	Onshore - Basalt rock formations
		Project supported by EU Innovation Fund						Expansion date: 2031			
	4	<a href="#">Mammoth</a>	Capture Transport Storage	Direct Air Capture	Mammoth is a Direct Air Capture project which is currently under construction. The project will have a CO <sub>2</sub> capture capacity of 36.000 tons per year. The CO <sub>2</sub> captured will be mixed with water to be injected underground for mineral storage in the basaltic rocks.	Climeworks, Carbfix	Advanced Development	2024	0.036	no data	Onshore - Basalt rock formations

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Italy	1	<a href="#">Ravenna CCS</a>	Capture Transport Storage	Cluster (multiple industrial sources)	The project involves the establishment of a CCUS hub in Ravenna with the perspective to capture CO <sub>2</sub> from multiple industries in the Po Valley and store it offshore, in the depleted gas reservoirs of the Adriatic Sea. According to the plans, Phase 1 of the project will start in 2023 with an initial capacity of 0.025 Mtpa whereas Phase 2 of the project is scheduled for 2027 with a capacity of 4 Mtpa. The storage resource in the Adriatic Sea gives the project the possibility for subsequent development which could increase its storage capacity to more than 10 Mtpa.	ENI, Snam	Advanced Development	2024  Expansion date: 2027	0.025	4	Offshore - Depleted Gas Fields (off the coast of Ravenna), Adriatic Sea
The Netherlands	1	<a href="#">Porthos</a>	Transport Storage	Not applicable	Porthos stands for Port of Rotterdam CO <sub>2</sub> Transport Hub and Offshore Storage. The project intends to provide transport and storage infrastructure to energy intensive industries in the Port of Rotterdam and possibly at a later stage to industries in the Antwerp and North Rhine Westphalia areas. The project will link the CO <sub>2</sub> Capture facilities and the existing OCAP pipeline with a new onshore pipeline which will drive the aggregated CO <sub>2</sub> in a CO <sub>2</sub> hub in the Port of Rotterdam and subsequently via an offshore pipeline in a depleted gas field 20 km off the coast for permanent storage.	Port Authority, Gasunie, EBN, Air Liquide, Air Products, ExxonMobil and Shell	Advanced Development	2025	2.5	no data	Offshore - Depleted Gas Fields (P18-2, P18-4 and P18-6), Dutch North Sea
		Project of Common Interest									
	2	<a href="#">Aramis</a>	Transport Storage	Not applicable	Aramis project aspires to enable multiple energy intensive industries to store their captured CO <sub>2</sub> emissions under the Dutch North Sea. For this purpose, a CO <sub>2</sub> collection hub and an offshore pipeline with a 22 Mt/year transport capacity will be built to connect the port of Rotterdam with the depleted gas fields located 200 km off the coast. Industries will be able to connect with the CO <sub>2</sub> collection hub either by onshore pipelines either by ships.	TotalEnergies, Shell, EBN, Gasunie	Early Development	2027	5	>5	Offshore - Depleted Gas Fields and potential Aquifers, Dutch North Sea
		Project of Common Interest									
	3	<a href="#">L10 CCS</a>	Storage	Not applicable	L10 is a depleted gas field located in the Dutch North Sea, which started producing gas in 1976 and was still operational in 2021. Currently, it is being investigated the development of a large-scale Carbon Capture and Storage (CCS) project with a total storage capacity of 120-150 million tonnes of CO <sub>2</sub> which implies injecting around 5 Mt / year. Phase 1 (2027) has a capacity of 5MTPA and the storage field in the L10 block will be connected to the Aramis CO <sub>2</sub> pipeline. Phase 2 (2028) has a minimum capacity of 4MTPA, and its storage fields will be supplied via direct injection from vessels.	Neptune Energy, EBN Capital B.V., Rosewood Exploration Ltd., ExxonMobil	Early Development	2027  Expansion date: 2028	5	9	Offshore - Depleted Gas Fields (L10-A, L10-B and L10-E areas), Dutch North Sea

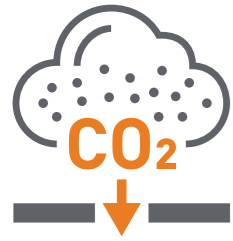
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Norway	1	<a href="#">Sleipner</a>	Capture Transport Storage	Upstream Oil & Gas (Gas Processing)	Sleipner CCS project has been operational since 1996 and it is known as the world's first offshore CCS implementation. The produced natural gas at Sleipner area contains around 9% of CO <sub>2</sub> and therefore the production is driven to a processing and CO <sub>2</sub> removal platform (Sleipner T) where 2.800 tonnes of CO <sub>2</sub> are separated and injected daily in the Utsira saline formation, 800m below the seabed. By the end of 2020 more than 19 Mt of CO <sub>2</sub> have been injected and permanently stored. The project is the result of a tax on CO <sub>2</sub> emissions which was introduced in Norway in 1991.	Equinor, ExxonMobil, Total	In operation	In operation since 1996	1	no data	Offshore - Saline Aquifer (Utsira Formation), Norwegian North Sea
	2	<a href="#">Longship [includes Northern Lights 1]</a>	Capture Transport Storage	Cluster (multiple industrial sources)	The Longship CCS project plans to capture, transport and store 0.8 Mtpa of CO <sub>2</sub> . The capture of CO <sub>2</sub> will take place in two sites on the east coast of Norway (a cement factory and a waste to energy plant). The liquefied CO <sub>2</sub> will be shipped for permanent storage at Aurora saline aquifer below the Norwegian North Sea. The Northern Lights project is part of the Longship CCS project and involves only the transport and storage part. The project has the vision to expand and receive additional volumes of CO <sub>2</sub> from several capture sites in Norway or other countries (1.5Mtpa and then 5 Mtpa).	Equinor, Shell, TotalEnergies	Advanced Development	2024	1.5	Expansion through Northern Lights 2 project	Offshore - Saline Aquifer (Aurora), Norwegian North Sea
		Project of Common Interest									
		<a href="#">Northern Lights 2</a>	Transport Storage	Not applicable	The Northern Lights project is part of the Longship CCS project and involves only the transport and storage part. Northern Lights 1 has a transport and storage capacity of 1.5 Mtpa by 2024. Northern Lights 2 intends to have a transport and storage capacity of 3.5 Mtpa by 2030, dependent on market demand.	Equinor, Shell, TotalEnergies	Early Development	2030 (IOGP estimation)	3.5	no data	Offshore - Saline Aquifer (Aurora), Norwegian North Sea
	3	<a href="#">Barents Blue</a>	Capture Transport Storage	Fuel Production (Ammonia)	The Barents Blue project aspires to produce at large scale, blue ammonia (3000 ton/d) and blue hydrogen (600 ton/d) with the CO <sub>2</sub> produced to be captured and permanently stored in the Polaris aquifer, at the Barents Sea. The annual output of ammonia will be 1 Mtpa whereas the annual CO <sub>2</sub> injection rate will be 2 Mtpa. The necessary gas feed 2.8 MSm <sup>3</sup> /d will come from the gas fields of the Barents Sea.	Horisont Energi, Fertiberia	Early Development	2025	2	no data	Offshore - Saline Aquifer (Polaris), Barents Sea

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Norway	4	<a href="#">Snøhvit</a>	Capture Transport Storage	Upstream Oil & Gas (Gas Processing)	Snøhvit is an offshore gas field in Northern Norway, that supplies gas to the Melkøya LNG production facility. Since the produced natural gas contains 5-6% CO <sub>2</sub> , it is separated and the CO <sub>2</sub> is piped back to the Snøhvit field. There the CO <sub>2</sub> is injected for permanent storage into the Tubaen saline formation at 2600m depth, beneath the gas production layers. The CCS project is the result of a tax on CO <sub>2</sub> emissions which was introduced in Norway in 1991.	Equinor	In operation	In operation since 2008	0.7	no data	Offshore - Saline Aquifer (Tubaen), Barents Sea
	5	<a href="#">Smeaheia</a>	Storage	Not applicable	Smeaheia, is a prominent fault block located in the Norwegian North Sea which is identified as a possible CO <sub>2</sub> storage site. Equinor (operator) has already submitted plans for the development of the field with a CO <sub>2</sub> storage capacity of 20 Mtpa.	Equinor	In Planning	2035	20	no data	Offshore - Saline Aquifer (Sognefjord), Norwegian North Sea
	6	<a href="#">Trudvang</a>	Transport Storage	Not applicable	The Trudvang project aims to receive liquified CO <sub>2</sub> via shipping to an onshore terminal in the south-west of Norway and transport it via a purpose-built pipeline to the Norwegian North Sea (about 200 kilometres from the coast) for injection and permanent storage.	Neptune Energy, Sval and Storegga	In Planning	2029	9	no data	Offshore - Saline Aquifer (Utsira), Norwegian North Sea
	7	<a href="#">Luna</a>	Storage	Not applicable	Wintershall Dea and CapeOmega have been awarded the Luma license from the Norwegian Ministry of Petroleum and Energy, located at the North Sea, 120 km west of Bergen, which has an estimated CO <sub>2</sub> injection capacity of 5 MtCO <sub>2</sub> /year.	Wintershall Dea, CapeOmega	In Planning	2030	5	no data	Offshore - Saline Aquifer (Statfjord), Norwegian North Sea
	8	<a href="#">Havstjerne</a>	Storage	Not applicable	Wintershall Dea and Altera have been awarded the Havstjerne license from the Norwegian Ministry of Petroleum and Energy, located at the North Sea, 35 km southwest of Stavange which has an estimated CO <sub>2</sub> injection capacity of 7 MtCO <sub>2</sub> /year.	Wintershall Dea, Altera	Early Development	2028  Expansion date: 2030	3	8	Offshore - Saline Aquifer (Sandnes), Norwegian North Sea

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UK	1	<a href="#">Acorn</a>	Transport Storage	Not applicable	Acorn is a joint venture of companies which is considered to be the backbone of the Scottish Cluster. Acorn is working on three linked projects: Acorn Carbon Capture project that aims at the construction of a carbon capture plant for the decarbonisation of two St. Fergus Gas Terminals. Acorn Hydrogen project that aims at the construction of a Blue Hydrogen facility adjacent to the two St. Fergus Gas Terminals. Acorn Transport & Storage project that aims at the transportation of the captured CO <sub>2</sub> for permanent storage under the North Sea using repurposed pipelines and ships.	Storegga, Shell, Harbour Energy and NSMP	Advanced Development	2024 Expansion date: 2030	0.8	5	Offshore - Depleted Gas Field (Goldeneye Field), British North Sea
	2	<a href="#">Caledonia Clean Energy</a>	Capture Transport Storage	Power Production (Natural Gas)	The Caledonia Clean Energy project aims to the construction of a 1.3 GW natural gas-fired plant with the capacity to capture over 90% of the CO <sub>2</sub> emitted. The existing Feeder 10 gas pipeline to St Fergus will be used for CO <sub>2</sub> transport. Subsequently, CO <sub>2</sub> will be transferred offshore for permanent storage under the North Sea or used for EOR. Both options are still under consideration.	Summit Power Group	Early Development	2025	3.1	no data	Offshore - Depleted Oil & Gas Fields & Saline Aquifer (Captain Sandstone), British North Sea
	3	<a href="#">Zero Carbon Humber</a>	Capture Transport Storage	Cluster (multiple industrial sources)	Zero Carbon Humber is a joint venture of companies to which aspire to decarbonize East Coast cluster (wider Humber region) which is the most carbon intensive industrial cluster in UK. The project aims to enable hydrogen economy, large-scale carbon capture and bioenergy with carbon capture and storage (BECCS) that will result in the capture and store up to 8Mtpa of CO <sub>2</sub> by 2030.	Associated British Ports (ABP), British Steel, Centrica Storage Ltd, Drax, Equinor, INEOS Acetyls, Mitsubishi Power, National Grid Ventures, px Group, SSE Thermal, Triton Power, Uniper, AMRC, Velocys	Advanced Development	2027 Expansion date: 2030	5	8	Offshore - Depleted Oil & Gas Fields (Viking and Victor), British North Sea
	4	<a href="#">HyNet North West</a>	Capture Transport Storage	Cluster (multiple industrial sources)	HyNet North West project aspires to decarbonise the North West Cluster. The project aims to develop the infrastructure for the production, distribution and storage of low carbon hydrogen along with the infrastructure for the capture, transport and permanent storage of the CO <sub>2</sub> emissions coming from the industry. The captured CO <sub>2</sub> will be stored at the depleted Hamilton gas field in Liverpool Bay.	Progressive Energy, Cadent, CF Fertilisers, Eni UK, Essar, Hanson, INOVYN (part of the INEOS Group) and the University of Chester.	Advanced Development	2026 Expansion date: 2030	0.8	10	Offshore - Depleted Gas Field (Hamilton), Liverpool Bay



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UK	5	<a href="#">Net Zero Teesside</a>	Capture Transport Storage	Cluster (multiple industrial sources)	Teesside industrial area is one of the biggest emitting regions in UK. Net Zero Teesside project aspires to establish an industrial decarbonised cluster. The aim is to build a new gas-fired power station with associated carbon capture plant and in parallel, to establish a CO <sub>2</sub> gathering network from a range of industrial emitters in the Teesside area. The CO <sub>2</sub> will be gathered to a central hub, compressed and sent for permanent storage, offshore at the Endurance aquifer in the Southern North Sea.	BP, Eni, Equinor, Shell, Total, Teesside Valley Authority, Suez, BOC, sembcorp,CF, Lotte Chemical, Nepic, UK BEIS	Advanced Development	2026	2	no data	Offshore - Saline Aquifer (Endurance), British North Sea
	6	<a href="#">South Wales Industrial Cluster</a>	Capture Transport Storage	Cluster (multiple industrial sources)	Industries in the South Wales region produce 16Mtpa of CO <sub>2</sub> . The South Wales Industrial Cluster which was formed in 2019, consists of major industries along the M4 corridor. Currently, two projects Cluster Plan and Deployment Project aim to shape the strategy for the decarbonization of the South Wales Industrial Cluster.	RWE, Progressive Energy, Cadent, Valero, Tata Steel, BOC, South Hook, Wales & West Utilities, Western Power Distribution, Rice, Flexis	In Planning	2025	no data	no data	Offshore - Depleted Oil & Gas Fields & Saline Aquifers, Celtic Sea and Bristol Channel
	7	<a href="#">Bacton Thames Net Zero initiative</a>	Storage	Not applicable	The Bacton Thames Net Zero initiative aims at the conversion of the Hewett depleted gas field located on the Southern North Sea, to a CO <sub>2</sub> Storage to be used for the decarbonisation of the industrial sector in the Bacton and Thames Estuary area (UK South East). It is estimated that the Hewett depleted gas field has a total storage capacity of 330Mt of CO <sub>2</sub> .	ENI	In Planning	2027  Expansion date: 2030	6	10	Offshore - Depleted Gas Field (Hewett), British North Sea



# Carbon Capture, and Storage

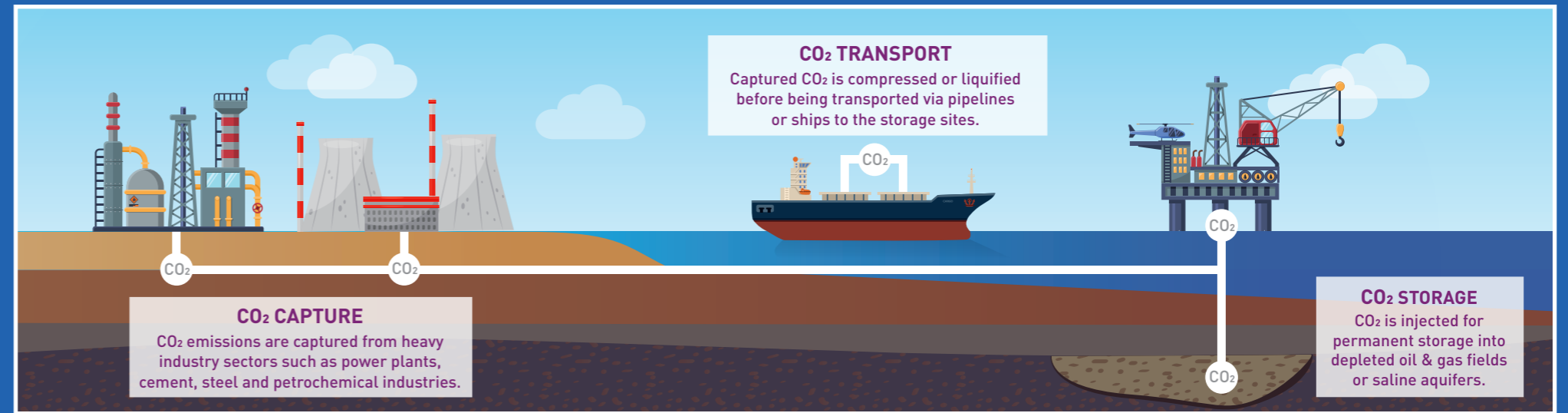
CCS is a set of technologies that enable the Capture, Transport and Storage of CO<sub>2</sub>.

CCS is a proven and safe technology. CO<sub>2</sub> has been captured, transported and stored in Europe successfully since 1996 (Sleipner project, Norway).

It is a key technology for Europe to meet climate neutrality.

More CCS resources at [iogpeurope.org](http://iogpeurope.org)

## How it works The 3 segments of the CCS value chain



CCS be deployed at scale, often repurposing existing infrastructures

### Where can CCS make a difference?



#### Decarbonisation of hard-to-abate industries

In the EU, steel, cement, chemical and refining sectors emit 37% of total CO<sub>2</sub> industrial emissions. CCS is one of the only technological options to enable emission reductions in hard-to-abate industries.



#### Energy transition

CCS can be applied to gas-fired power plants which provide flexibility to an electricity grid with a higher share of intermittent renewables.



#### Low carbon hydrogen production

Hydrogen production based on natural gas decarbonized with CCS is the most cost-effective. It can supply industrial sectors and decarbonize sectors which cannot be electrified such as aviation and maritime transport.



#### Negative emissions

Large scale negative emissions can be achieved when BioEnergy production is combined with CCS (BECCS) or when Direct Air Capture is combined with CCS (DACCS).

### A European CO<sub>2</sub> storage ambition

IOGP Europe promotes an ambition on CO<sub>2</sub> storage injection capacity availability.



Ambition level of 0.5 to 1.0 GtCO<sub>2</sub> storage availability per year by 2050



Scope covering EU, EEA and the UK



Requires a comprehensive EU policy framework



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