

# New pioneering collaboration on capture and storage of biogenic CO2 in North Denmark

Storing CO2 is an essential part of the solution to the climate challenges, and INEOS Energy, Wintershall DEA, Hirtshals Havn, Biocarb Solution, Evida, Blue Water Shipping and Greenport North are now taking a big step towards the realization of a project with great climate potential.

The partners have signed an agreement to investigate the possibility of establishing transport of CO2 from biogas plants in North Denmark, temporary storage facilities in the Port of Hirtshals and shipping to the North Sea, where the CO2 will be injected into the sub soil. The project, named Greenport Scandinavia, thus involves the entire value chain for Carbon Capture and Storage (CCS).

The project is the first of its kind in Denmark. Since the CO2 is biogenic, the storage will result in negative emissions, which can make a significant contribution to achieving the Danish climate goals of a 70 percent reduction in greenhouse gas emissions by 2030.

Initially, the aim is to capture up to 100,000 tons of biogenic CO2 annually from biogas plants in North Denmark starting in 2024/25. The CO2 will be transported to Port of Hirtshals. From here, it will be shipped to the Siri area in the Danish part of the North Sea where it will be stored in empty oil fields in Project Greensand.

The long-term ambition is to significantly increase the amount of CO2 to be received for shipping and storage. To that end, the partnership will look into the possibilities of establishing the necessary infrastructure in the form of e.g. pipelines for transporting CO2 from other parts of Denmark and Europe to Hirtshals - potentially establishing Port of Hirtshals as a large, green hub for intermediate storage and shipping of CO2 for both Danish and foreign emitters. Harnessing the potential of economies of scale will support local industrial development and provide significant growth potential for the port and the region.

## **The partners state about the project:**

*- At INEOS, we have come far with our CO2 storage project Greensand, where we will get the first CO2 into the Danish underground early in the new year as part of our pilot demonstration project. It follows naturally that we are looking into how we can create a value chain for capturing, transporting and storing CO2 in Denmark, says Mads Weng Gade, Country Manager, INEOS Energy Denmark. He continues: - Storing biogenic CO2 from biogas plants has great climate potential, as this results in negative emissions. With this agreement, the partners will explore the possibility of establishing the entire value chain and capturing, transporting and storing the first biogenic CO2 in Denmark.*

CEO Per Holm Nørgaard, Port of Hirtshals, points to the fact that the port's forthcoming expansion supports the plan to store and ship CO2 from Hirtshals: *- We are already working on plans to expand the Port of Hirtshals and storage and shipping of CO2 to the North Sea fits perfectly into our strategy. In the long term, the establishment of a CO2 hub in Hirtshals can contribute to solving the climate changes, and we see great potential in this partnership, says director Per Holm Nørgaard from the Port of Hirtshals.*

*- Biogas has great potential in terms of displacing fossil fuels, and by storing the biogenic CO2 we can even achieve negative emissions. Since manure from livestock farms is, among other things, part of the production, the combination of biogas production and CO2 storage means that we can avoid some emissions from agriculture, says CEO Carsten Joest Nielsen from Biocarb Solution. Naturally, this will have a major impact on the green transition. Production from biogas is already providing employment and growth in North Denmark and this project has the potential to make North Denmark a beacon for green growth.*

*- Cost-effective transport of CO2 can support the development of a large-scale CO2 hub in North Denmark, which will contribute to both achieving climate goals and supporting business development in the area. Evida views the development and establishment of piped CO2 infrastructure as the lever to open the door for just that. Therefore, we are very much looking forward to the collaboration in this ambitious project, which will create valuable knowledge and experience for all parties, and which will boost the development of a position of strength in North Denmark, says Peter Kristensen, director of strategy and development at Evida.*

*- Like Greensand, Greenport Scandinavia fits into our strategy to build significant international partnerships with CCS projects. At Greenport Scandinavia, we want to bring in our experience along the whole value chain to establish a CCS business model with our strong Danish partners and support Europe's climate targets, says Klaus Langemann, Senior Vice President Carbon Management and Hydrogen at Wintershall Dea.*

*- It is a fantastic project that we at Blue Water are delighted to be a part of. We are transport and logistics experts, and we are super excited to be part of developing a new industry. As a global operator with local interests, we want to contribute to the green transition, which is why we participate in various projects with a focus on the green transition and energy transition, says Jacob Kjærgaard, Regional Director Energy, Ports & Projects Europe, Blue Water Shipping.*

Steen Hintze, CEO, Greenport North: *- The agreement which has just been signed has enormous potential, both climate-wise and business-wise, for the whole of North Denmark. Storing CO2 is an essential part of the solution to the climate changes, and it will contribute to creating new businesses and jobs, not only in Port of Hirtshals, but in the whole of North Denmark.*

## **Background**

### **INEOS Energy**

Experienced oil and gas production company INEOS Energy is currently maturing CO2 storage sites in the Siri area in the Danish part of the North Sea. The project is called Greensand and aims to deliver a highly competitive concept for safe and efficient transport and storage of CO2. As part of the project, a pilot project will demonstrate the full value chain for capture, transport and storage of CO2 and CO2 will be stored for the very first time in Denmark in Nini West in early 2023. The final investment decision point is expected at the end of 2023.

To utilize economies of scale and build a flexible and cost-effective CCS value chain, it is necessary to create a CO2 import and export hub located near CO2 sources, open sea and expandable port space with easy access to onshore infrastructure (current and future) and suitable storage areas both offshore, near-shore and onshore. In this context, the Port of Hirtshals is considered to have considerable potential.

## **Wintershall Dea**

Wintershall Dea is Europe's leading independent natural gas and oil company with more than 120 years of experience as an operator and project partner along the entire E&P value chain. The company with German roots and headquarters in Kassel and Hamburg explores for and produces gas and oil in 12 countries worldwide in an efficient and responsible manner. With activities in Europe, Russia, Latin America and the MENA region (Middle East & North Africa), Wintershall Dea has a global upstream portfolio and, with its participation in natural gas transport, is also active in the midstream business. More in our [Annual Report](#).

As a European gas and oil company, we support the EU's 2050 carbon neutrality target. As our contribution, we have set ourselves ambitious targets: We want to be net zero across our entire upstream operations – both operated and non-operated – by 2030. This includes Scope 1 (direct) and Scope 2 (indirect) greenhouse gas emissions on an equity share basis. Wintershall Dea will also bring its methane emissions intensity below 0.1 per cent by 2025 and maintain zero routine flaring of associated gas in its operations. In addition, we plan to reduce emissions resulting from the use of hydrocarbons by applying CCS and low-carbon hydrogen technologies, potentially building up a business abating 20-30 million tonnes of CO<sub>2</sub> per annum by 2040. You can find more about this in our [Sustainability Report](#).

Wintershall Dea was formed from the merger of Wintershall Holding GmbH and DEA Deutsche Erdoel AG in 2019. Today, the company employs around 2,500 people worldwide from almost 60 nations.

## **Port of Hirtshals**

Port of Hirtshals operates the port in Hirtshals and attracts and supports companies within the fields of transport and logistics, maritime services and fishery and fish processing. Port of Hirtshals is an independent public port owned by the municipality of Hjørring.

The port intends to participate in activities within the CCUS value chain, including establishing itself as a receiving and shipping port for CO<sub>2</sub>. The Port of Hirtshals is currently planning a major expansion of the port expected to be completed in 2027.

## **Biocarb Solution**

Biocarb Solution is owned by five biogas companies in the northwestern part of Denmark. In addition to supplying biogenic CO<sub>2</sub> for storage, the company aims to own and operate a CCS biogenic CO<sub>2</sub> storage facility at Port of Hirtshals. In the long term, the pure biogenic CO<sub>2</sub> from biogas can be used in green energy production such as Power-to-X at Port of Hirtshals or elsewhere in North Denmark. The storage facility will be open to customers with biogenic CO<sub>2</sub>.

## **Evida**

Evida is Denmark's national distributor of methane gas (natural and biogas). As the owner of the gas distribution infrastructure in Denmark, Evida is working on adapting, expanding and optimising the running of the gas system to ensure that the infrastructure will be ready for the 100% biogas energy system of the future and to ensure security of supply within the Danish energy system. At the same time, Evida is getting ready to distribute hydrogen and CO<sub>2</sub> to fulfill the Danish potential for Power-to-X and CCUS (carbon capture, utilization and storage). Evida's experience with gas transport will play a key role in the development and establishment of the hydrogen and CO<sub>2</sub> infrastructure of the future.

## **Blue Water Shipping**

Blue Water Shipping is a global supplier of all logistics services within modern supply chain management.

Blue Water Shipping is already involved in Project Greensand and generally sees a huge potential to contribute know-how gained from other projects and initiatives with its involvement. BWS is responsible for the logistics surrounding the transport of CO2 from the port to storage at Greensand.

### **Greenport North**

Greenport North is a business development company focusing on green transition and growth for existing and new companies in the Port of Hirtshals. Within the Greenport Scandinavia partnership, Greenport North supports and contributes to the development of activities throughout the CCUS value chain.