The Atlas Project – An Innovative Approach to Scalable, Low-Cost CCS in Europe

Introduction

Carbon capture and storage (CCS) is widely recognised as a critical decarbonisation pathway for industries in Europe and beyond. The pace of CCS deployment in Europe will depend on the ability to deliver integrated CCS value chains that acknowledge the circular dependency between capture, transport and storage projects, and that treat cross-chain risk management as a core element of system design.

Successful deployment of CCS at scale is reliant on a value chain designed with inbuilt flexibility. CCS projects developed as bespoke, point-to-point solutions with fragmented interfaces between capture, transport, and storage, expose independent entities to significant cross chain risks. As a result, final investment decisions (FIDs) are often delayed (DNV Energy Transition Outlook, 2025), and scaling beyond early flagship projects remains limited. Closing the gap between CO_2 capture, transport, and storage requires a coordinated, synchronised approach to the full-scale value chain, in which transport and storage infrastructure is planned and developed in parallel with CO_2 capture facilities to minimise the risk of stranded assets.

The Atlas Project Concept and Technical Framework

Aker BP and Höegh Evi have formed a strategic partnership to deliver an integrated CO_2 transport and storage solution for European industry, enabling seamless CO_2 sequestration from collection to safe, permanent offshore storage (*Figure 1*). Together, we are developing the Atlas Project —a flexible, scalable, and cost-effective CCS solution recognised by the European Commission through the STEP Seal (Strategic Technologies for Europe Platform) as a high-quality project aligned with EU strategic technology priorities, and included on the Commission's 2025 list of Projects of Common Interest. Subject to a final investment decision tentatively in 2027, operations are planned to commence in 2030.

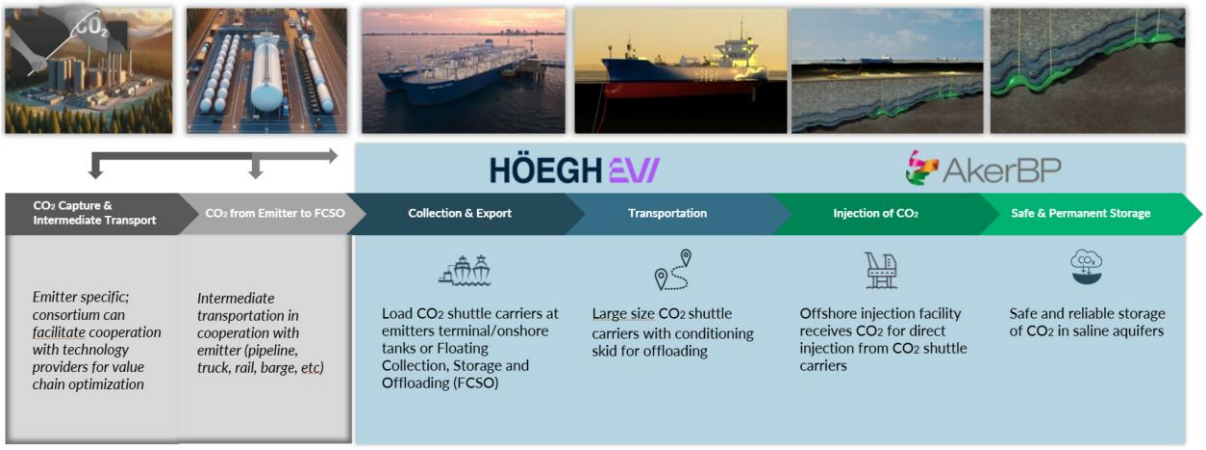

Figure 1: Seamless CO2 sequestration from collection to sink. Integrated solution includes large-scale collection, transportation, injection and permanent storage.

The Atlas Project applies a collaborative approach to project development to reshape how CCS is delivered at scale. It offers a fully integrated, marine-based transport and offshore storage solution, prioritising flexibility, rapid deployment, and cost efficiency while upholding high safety and environmental standards. By responding directly to market demand for value chain flexibility, the project encourages synchronised investment decisions, supporting resilient CCS business models and effective cross chain risk management.

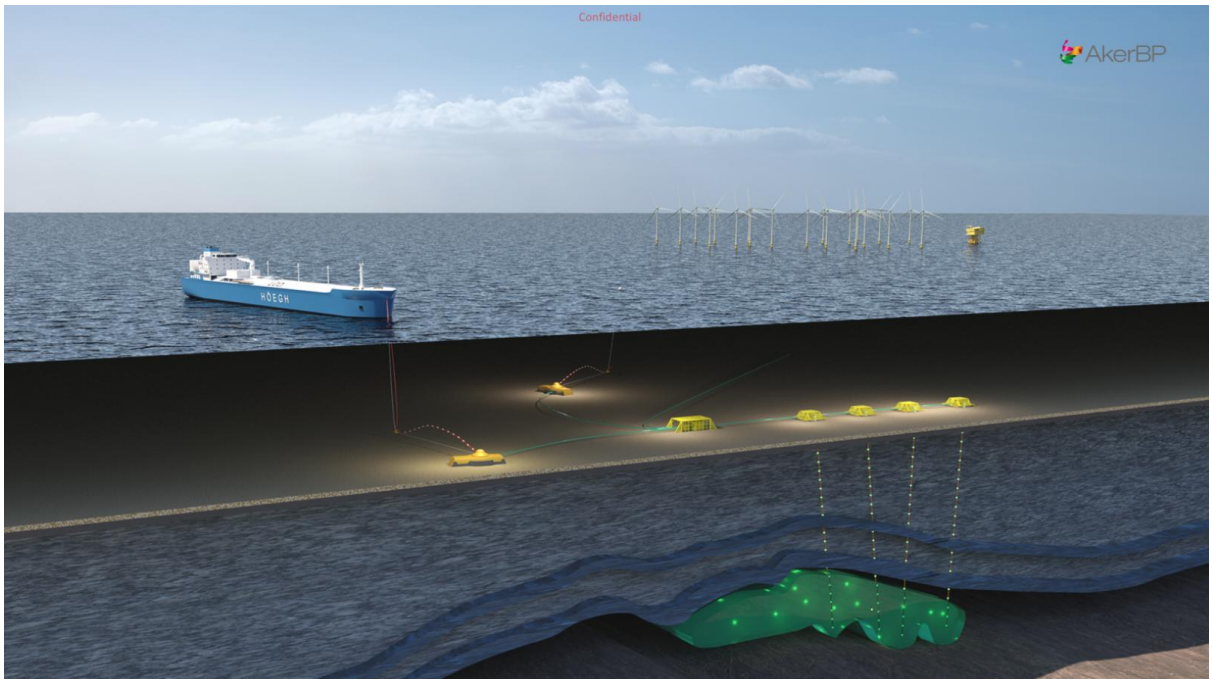

Figure 2: An unmanned subsea injection hub connected to a high-quality subsurface reservoir enables direct offshore offloading, injection, safe and permanent geological storage of CO_2.

As the largest independent oil and gas company on the Norwegian Continental Shelf, Aker BP combines leading subsurface expertise with consistently high operational performance. The company's CCS portfolio leverages decades of subsurface excellence to mature high quality storage opportunities, select robust development concepts, and build value chain partnerships that support viable CCS business models within an appropriate regulatory and fiscal framework.

Located in a data-rich, extensively studied area of the Norwegian Continental Shelf, the Atlas Project draws on Aker BP's long-standing subsurface expertise and strong offshore operating capability. In collaboration with Orlen Upstream Norway AS, it provides direct offshore offloading, injection, and safe, permanent geological storage of CO_2 from European industry (*Figure 2*). An unmanned subsea injection hub linked to a high-quality saline aquifer enables a cost-efficient solution, with CO_2 conditioned and offloaded directly from liquid CO_2 shuttle carriers for efficient transport and injection. DNV have awarded an Approval in Principle for the next generation liquified CO2 carrier, affirming the quality of the innovative design. By integrating CO_2 conditioning and offloading capabilities directly into the shuttle carriers, the design minimizes complexity, reduces risk of impurity co-mingling and ensures reliable injection into offshore reservoirs.

Key technical features underpinning the robustness of the business model include:

- Modular subsea architecture supporting phased capacity expansion
- Multiple injection wells enabling continuous operation and stepwise development
- Direct offshore offloading, removing the need for fixed terminals or export pipelines whilst maintaining the flexibility to connect to future pipeline opportunities
- Remote operation and automation to reduce offshore complexity and operational risk

The reference development is designed for an injection capacity of 6 million tonnes (Mt) per annum over a 25-year injection period, totalling 150 Mt of CO_2, with an additional large upside potential beyond the reference case. The concept enables stepwise development—scaling from an initial two well configuration to four, six, and additional wells as demand matures. This approach prioritises flexibility, rapid deployment, and cost efficiency. In addition to the Atlas Project, Aker BP is the operator of the Poseidon Project, together with partner OMV, which offers additional flexibility for scaling CCS.

Managing Cross Chain Risk

The Atlas project introduces an integrated transport and storage service intended to function as an integrated solution for CO_2 offtake. From an emitter perspective, this structure streamlines the process by replacing multiple bilateral agreements with a single Transport and Storage Agreement (TSA) that covers collection, offshore transport, conditioning, injection, and permanent storage of CO_2.

By reducing contractual fragmentation and simplifying the customer interface, this business model aims to lower transaction costs, reduce commercial risk for emitters, and support earlier investment decisions. The commercial model is built on open-access principles, enabling multiple emitters and varied ports of entry, with enough flexibility to serve both large industrial hubs and smaller, dispersed sources. Competitive pricing is achieved through scale, modularity, and a reduction in infrastructure intensity.

Central to the Atlas development philosophy is the explicit prioritisation of cross chain risk as a key design constraint. Cross chain risk refers to the uncertainty arising from dependencies and interfaces between capture, transport, and storage segments, particularly when these are managed by different parties. The project, led by Aker BP and Höegh Evi, is structured to reach a joint FID for offshore transport and storage, with a tentative target of 2027. This coordinated approach significantly reduces the risk of misaligned FIDs across the value chain.

Conclusions

By integrating modular offshore storage, maritime transport flexibility, and unified commercial governance, the Atlas Project approach aims to:

- Reduce emitter exposure to cross chain delivery risk
- Enhance bankability for investors and lenders
- Enable scalable, open-access CO_2 storage capacity aligned with European decarbonisation goals

The Atlas Storage project thus offers a flexible approach for scaling CO_2 storage and accelerating industrial decarbonisation across Europe.

References

DNV Energy Transition Outlook [2025], DNV ETO CCS to 2050 report. Published report. Energy Transition Outlook: CCS to 2050