Leading Europe's offshore wind expansion

Odense Port, a key player in Europe's offshore wind industry, boasts ample space to accommodate production and pre-assembly of turbine components. PES heard from its Senior Business Development Manager, Morten Diederich, about its aim to become the world's first All-Component Offshore Wind Port, reducing costs and risks while fostering innovation through a unique industrial cluster and robotics hub.

PES: A warm welcome to PES Morten. This interview comes at an exciting time for Odense Port, as the wind industry generally faces a shortage of space in European ports. But you seem to be a port with ample space, don't you?

Morten Diederich: Thank you very much! It's a pleasure to be here for the first time. The answer to your question is a resounding yes. Odense Port is one of Europe's leading production ports for offshore wind, and in terms of area, it is Denmark's largest port with 8.5 million square meters. Of these, we have 2 million square meters available, earmarked for the wind industry, and 1 million square meters under construction for a nearby dry port, which will ensure the supply chain and security of supplies for the wind manufacturers at the port.

PES: What do you intend to use all that space for?

MD: Based on our research, Europe is expected to face a significant shortfall in production capacity for offshore wind main components in 2027/2028. Meeting the market demands of 2030 requires more space and factories. In addition to leveraging our potential, we aim to contribute to the solution by offering our capacity and facilities to address the industry's space requirements. This means we have invested in accommodating both productions, marshaling/storage projects, and pre-installation.

PES: What is the greater vision behind these investments?

MD: We want to make locating offshore wind activities at Odense Port more attractive by creating better opportunities and conditions for the wind industry in Europe. One way we aim to achieve this is by working towards becoming the world's first All-Component Offshore Wind Port.

PES: Can you elaborate on this pioneering idea?

MD: We are aiming to become a port where all major components of a turbine are manufactured and pre-installed. This initiative is expected to save the industry hundreds of millions of euros in intermediate transportation costs. By eradicating today's costly intermediate transports from the production site to the pre-assembly port, we can minimise transportation expenses. We anticipate achieving savings of 2 to 3% on the turbine supply agreement (TSA) by having all components produced and pre-installed at Odense Port. This gives the manufacturers at our port and the developers they collaborate with a significant competitive advantage.

PES: Wow, that sounds like a good deal. Are there any other positive side effects with this all-component offshore wind port?

MD: Absolutely, a good thing rarely comes alone. Another positive side effect is reduced risks associated with transportation and logistics: fewer transports mean less risk of delays and errors during loading and unloading. Hundreds of millions of euros can be saved by avoiding delays and lowering insurance costs.

Morten Diederich

A third important benefit of an All-Component Offshore Wind Port where all components are produced and pre-assembled at the same port is enhanced product value for on-site manufacturers. With fewer transportation links, it becomes more attractive to purchase components produced in Odense Port than those produced elsewhere.

The entire premise for making this All-Component Offshore Wind Port possible is, of course, our privileged access to ample space.

PES: And yet, you plan to get even more space?

MD: Yes, that might seem excessive, but we foresee supply chain bottlenecks driving up demand for space in the market. Currently, capacity seems adequate, but as supply chains grow in the next three to five years, especially with larger components, we'll need more production and installation capacity at European ports. That's why we're also expanding the port by 1 million square meters and 1,400 meters of quay to meet future needs. We always aim to stay ahead by investing in tomorrow's solutions today.

PES: Besides the extensive space and your commitment to investing in infrastructure to support the wind industry, you also have an interesting feature: accommodating Denmark's largest industry cluster comprising over 120 companies. What is the great value here for the offshore wind manufacturers on-site, and companies in general?

MD: It's first and foremost the synergies that flourish within the cluster. We have established the framework for industrial growth and Denmark's largest industrial cluster, with over 120 companies, most of which are subcontractors to the largest offshore wind manufacturers on-site. This means that on the premises, there is a unique ecosystem where your business partners are close at hand, and you can always get hold of a welder or equipment if an acute situation arises. This provides fruitful synergies between the companies at the port and optimal opportunities for growth, as your subcontractors are nearby, and the possibility of meeting new collaborators is always present. That is precisely our core idea in creating space for large, highly specialized clusters, where 2 + 2 equals 5 in terms of value and growth to the companies at Odense Port.

PES: You also call yourselves an innovation hub. What does that mean?

MD: Our region, Funen, has, over the last few decades, become the center of robotics technology, and Odense is globally known as Robot City because we have more than 30 years of history with robots. It all started here at the port at Maersk's former shipyard, developing and using big robots for shipbuilding, and has continued with the Maersk Mc-Kinney Møller Institute at the University of Southern Denmark.

Therefore, innovation and robotics technology are a natural part of the pioneering spirit of Odense Port. We have some very renowned test centers on-site specialising in wind, and now also the world's first robotics center for large constructions. This new center, called the Large Structure Production Center, is run by the University of Southern Denmark. It is a huge addition to the entire industrial cluster, as it will develop mega-robots and automated solutions to produce wind turbines, ships, and buildings in close collaboration with the companies. This simply does not exist anywhere else in the world!

The combination of production and research makes us a powerhouse for wind, knowledge, and growth, contributing to increased innovation, competitiveness, and product quality. With this setup, we have created a unique hub where heavy industry merges with deep knowledge to jointly develop new solutions for future challenges.

PES: Yet another opportunity to achieve more synergies! Can you specify how the companies at the port can directly benefit from being neighbors to an innovation hub?

MD: Yes, certainly. In general, if your production/business is located next to an innovation hub targeted at your branch, it is naturally easier to be at the forefront of the latest technologies that can optimize your business. At our port, companies can meet directly with researchers and engineers to jointly develop and test new equipment that can optimize processes and products. Additionally, the robotics center helps provide training facilities and organize courses for employees, where they can learn to operate various types of robots.

And just to tie a bow on the vision of an All-Component Offshore Wind Port, our wind innovation hub is a major asset to this concept. We already have exceptional test centers for testing blades and nacelles, and in 2025, we will add the world's strongest test center for main bearings, as well as a first-of-its-kind robotics center whose primary purpose is to develop robot-driven production methods that can automate parts of wind production.

This will allow manufacturers to optimise production processes and quality assurance, ultimately gaining competitive advantages and reducing the need for labor, which is in high demand and short supply across Europe.

PES: Thank you for your time today, Morten. It's been helpful to get an insight into your work and Odense Port's plans.

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