From small fishing port to international offshore wind hub

Theis Gisselbæk

The Port of Grenaa has grown from a small fishing port to an international hub, with the capacity and know-how to serve the offshore wind market. The pre-assembly facilities, the ease of access and experience, makes it the ideal port to access Denmark, Sweden and Northern Europe. Theis Gisselbæk, the CCO, gives PES an insight into its growth.

PES: Welcome to PES Wind magazine, it's great to talk with you. It would be great if you could give us some background on the Port of Grenaa.

Theis Gisselbæk: The Port of Grenaa has a long history, and it celebrated its 200th anniversary in 2013 at the same time as the installation of the Anholt offshore wind farm. In the early beginnings Port of Grenaa was primarily a fishing and ferry port. Over the years the port has broadened its work to especially bulk activities.

Our latest big port expansion was inaugurated in 2010. The planning of this development process started at the end of the 90-ties.

The wind industry has always been a natural part of our portfolio. Nordtank, a local company, is now, after several mergers, part of the Vestas group. The Port of Grenaa also has a long tradition in handling onshore wind components. In 2010 we had a breakthrough in the offshore market with the installation of Anholt offshore wind farm, which was the largest offshore wind farm in Denmark at that time.

PES: We know the offshore market is expanding, how is this impacting on your business?

TG: We follow the developments in the offshore wind industry closely. It is an intriguing development currently with the planning of new offshore wind farms in the Kattegat, off the Danish east coast and at the Swedish west coast. More specifically we continuously keep up with the industry and plan for ongoing investments at the port, to make sure our setup is always attractive and up to date.

PES: Would you describe Grenaa as a base and service port, if so, we would love to hear about your experience in these areas.

TG: The construction of the Anholt offshore wind farm in 2013 earned us national and international recognition as a thoroughly proficient wind turbine port. This makes us one of Denmark's leading industrial ports for wind turbine projects, with extensive know-how as a base and service centre. The port has the competences, the experience and the network connections necessary to deal professionally with this industry.

We had to deliver a custom designed pre-assembly area and the port has subsequently functioned as O&M service port.

Ørsted is here with their base and service unit for the Anholt offshore wind farm, placed with direct access to the quay and their own crew boats. The Port of Grenaa shares know-how and experiences with important players within the wind industry – both nationally and globally. For instance, we have participated in projects in Taiwan, India, USA and Denmark. We have also supported other O&M campaigns for offshore wind farm projects.

PES: Please could you tell us what facilities there are at the port to support the wind industry?

TG: The Port of Grenaa offers excellent docking facilities, with an ample water depth of up to 11 metres and is prepared for 15 metres. We offer a dedicated jack-up area, with reinforced seabed, for installation vessels. The port's layout is perfect for storing and preparing wind turbines. A large pre-assembly area, with direct access to the quay streamlines logistics and cuts time involved in a project.

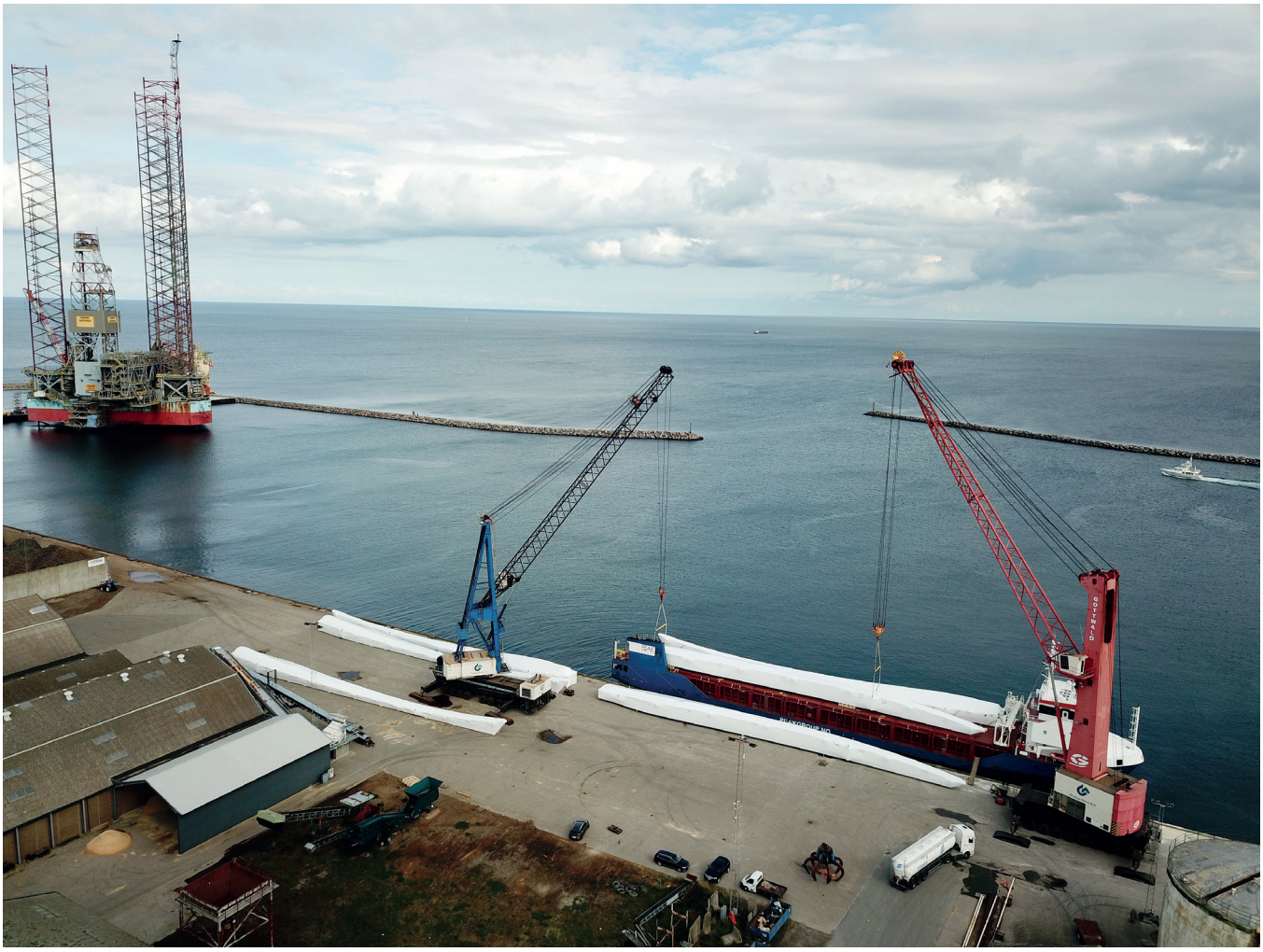
We offer a highly professional supply chain with a broad selection of dedicated and skilled businesses within the wind industry.

We feel it is crucial to support our customers and have a highly specialized and flexible setup, which means we offer an efficient, high quality service.

Navigation conditions within the port of Grenaa are very good. Vessels enter the port via the 0.7 sea mile shipping channel, with a depth of 12 metres, allowing efficient, safe passage for vessels of all sizes.

Furthermore, and not least, the port has a range of modern equipment and we are able to undertake all types of work within loading and unloading. Highly functional material and solid teamwork are essential for efficient loading and unloading.

Our two harbour mobile cranes have a lifting capacity of up to 140t and a twin-lift capacity up to 195t. As I have already said we have access to a wide range of equipment and



Blade moulds

always try find the optimal solution for each project, through close dialogue with our customers.

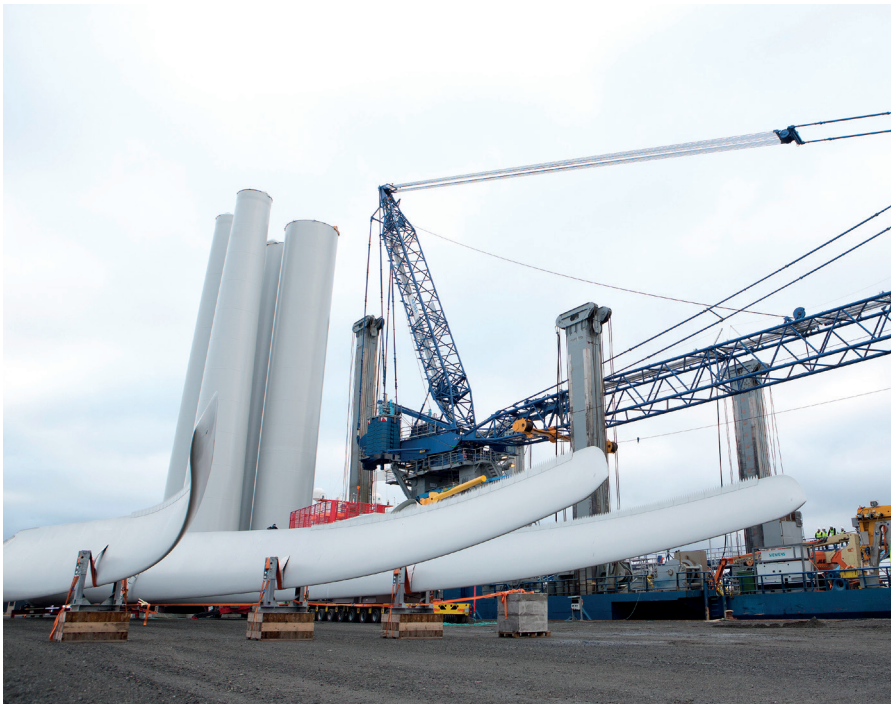
PES: How important for you, as a port, are the pre-assembly facilities?

TG: Today very few ports have the facilities and pre-assembly areas available for these types of projects. The competition has narrowed down in this area. We at the Port of Grenaa endlessly focus on maintaining and further developing the hinterland facilities as well as the pre-assembly area.

Also, non-stop improvement of the infrastructure to and from the port is a very important issue for us. The activities within this core segment is very vital for both the port and the local area and local companies.

PES: Please could you explain the importance to your customers of being a deep-water port?

TG: The port should not only grow but should manage that growth by focussing on the unique strengths we have and use them effusively in our efforts to strengthen the Port of Grenaa's position, as one of



Pre-assembly

Denmark's biggest commercial and industrial ports. We already have a comfortable position in the top 10.

Navigation conditions within the port of Grenaa are very good. Vessels enter the port via the 0.7 sea mile shipping channel, with a depth of 12 meters, allowing efficient, safe passage for ships of all sizes. The outer part of the channel is 150 meters wide, and the inner part 100 meters. The normal maximum ship length is 230 meters. The port's swinging basin is 375 meters in diameter.

Being a deep-water port gives our customers the necessary flexibility and provides fewer limitations when arriving at the port. We have prepared the water depth for an expansion to 15 meters.

The development and planning for further expansion is an ongoing strategic focus area. We strive to grow along with the wind industry in general.

Port of Grenaa pre-assembly

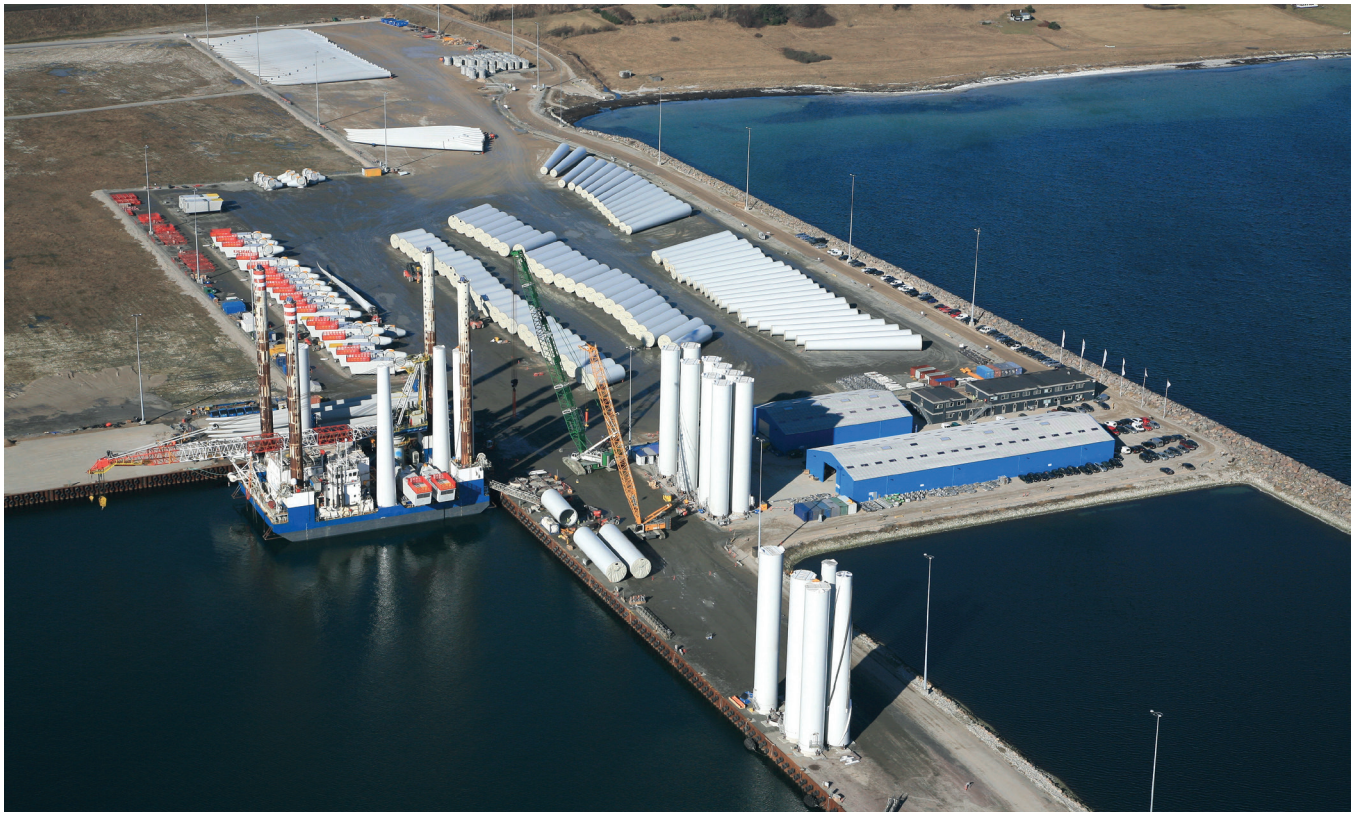
PES: How is the design and size of offshore wind components changing, and what challenges does this present to the Port of Grenaa?

TG: In our opinion, the development and upsizing of wind components is an advantage for the Port of Grenaa, since this narrows down the field of ports in the competitive market. Using us as a shipping port is a good supplement to production at a port. We still have a competitive advantage. Partly because of the easy accessibility and partly because of the highly flexible setup and possibilities for further development.

PES: Why do and why should customers choose your port, what makes it stand out from the competition?

TG: The feedback from our business relations and customers supports our thoughts that the Port of Grenaa offers the flexibility needed and allocates the investment readiness that is necessary. The Port of Grenaa has a long history of doing business with relevant companies within the wind industry, for example Vestas, MHI Vestas Offshore Wind and Siemens Gamesa Renewable Energy.

Presently we are planning the details for



Port of Grenaa pre-assembly

further development.

PES: How do you ensure you keep up with the constantly changing international safety standards?

TG: We do so by constantly making sure that our organization is well educated and keeping up with new trends and standards. Furthermore, we participate in a wide range of network organizations related to the wind industry in order to exchange experiences and be in the loop with new regulations.

We are members of the following associations:

- Wind Denmark
- Energy Innovation Cluster
- WindEurope's Ports Platform
- DWP System Supplier

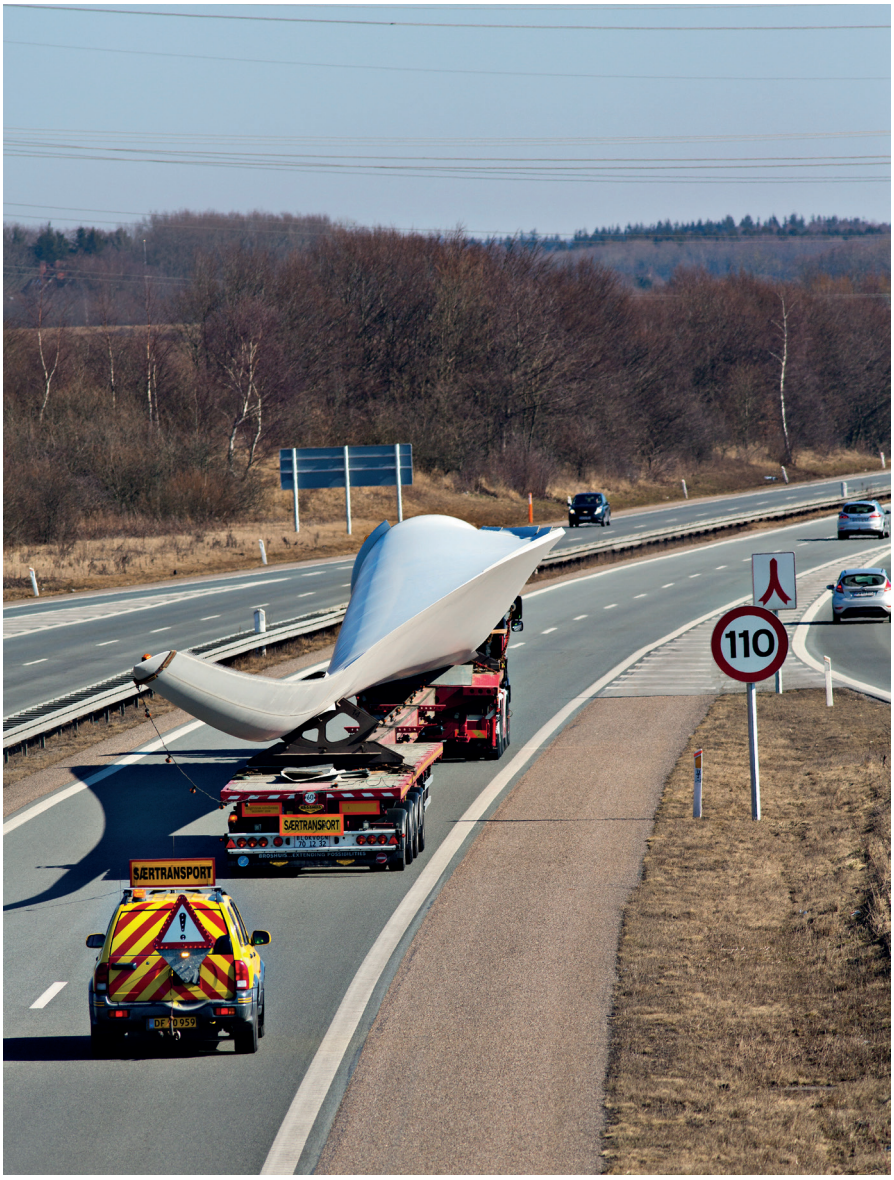
PES: Where do you operate and where are your key markets, and are there any areas, geographically speaking, that you would like to break into?

TG: The Decom tools project is an international collaboration between thirteen partners to develop eco-innovative concepts for handling offshore wind turbines that are at the end of their lifespan.

Our focus, besides the Decom tools project, is primarily on pre-assembly or promoting the port as a hub facility.

Prototyping: TetraSpar is a very interesting project with a lot of potential for the wind industry. This project will start up with further tests in Grenaa during 2019.

Geographically we are not only looking into the Danish, Swedish and Baltic area but also Northern Europe in general.



Transportation

Pre-assembly

PES: What is the biggest challenge facing the Port of Grenaa today?

TG: We need to reach further out to achieve higher awareness of the many possibilities in Grenaa. In general, we visit relevant exhibitions and conferences and as well, we often receive groups and network organizations, which gives us the opportunity to show off the opportunities here.

PES: We are now just past the middle of the year, how has 2019 been so far for you?

TG: In 2018 the Port of Grenaa achieved the best profits in the history of the port. All core segments are in progress and we are positive about the activity level this year so far. In general, we are experiencing positive trends among our customers and the companies at the port.

We have high expectations for 2019.

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