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Home for blue growth

by **Wim Stubbe**, *the Port of Oostende's Business Development Manager*



Wim, a Master of Laws from the University of Leuven, has been working as Business Development Manager at the Belgian Port of Oostende since 2008. He's a sworn advocate of smaller and less-fashionable seaports, eagerly and what's most important also successfully finding for them new business opportunities in a world where everybody seems to be buzzing only about TEU records.



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Looking at the port business through news headlines (particularly the media centres of big harbours), one could get the impression that seaports are solely about more and more TEUs moved by giant cranes from football stadium-big carriers, thousands of tonnes of coal unloaded at once, and oil pumped in the amount of Switzerland's lakes (at least). Who then needs small- and medium-sized seaports not able to handle the largest ships and their hinterland-rich freight? Luckily, a great deal of industry players find them utmost important as partners in developing various offshore ventures.

Take for starters Oostende, one of four Flemish seaports in the south of the North Sea. It is also by all means an in-city port, with its inner part stretching 7 km alongside the Bruges-Oostende canal, linking the harbour with the European inland waterways network. The port is also well rail & road-connected. However, considering the pressure from the side of real estate developers and "visionary" urbanists, it is no longer possible to expand Oostende's outer port. As such, the nautical access is restricted to vessels 200 m long with no more than 8.0 m of draught.

But there is more than just cargo traffic in the North Sea. The title of the European Commission's strategy paper to the European Parliament in 2012 outlined this fairly clearly: *Blue Growth, opportunities for marine and maritime sustainable growth*. In other words, the economic potential is situated in the sea.

For instance, the Belgian North Sea's wind farms make an important contribution to achieving the country's renewable energy targets. Today, a total of 232 wind turbines are up & running, producing energy for approx. 750 thou. households. The aim is to install 450 wind turbines with an overall capacity of 2,245 MW and

an annual electricity output of 770 TWh, equivalent to 9.5% of the 8,085 TWh electricity consumption in Belgium. And, if you want to install a turbine out in the sea, you need a port.

Blue energy and offshore wind – early days and today

The Port of Oostende took its first steps in the blue growth sector in 2007-2008 with the construction of the first phase of the C-Power offshore wind park (six 5.0 MW turbines). This new economic activity needed a dedicated infrastructure as well as space within the outer port in order to be able to realize the construction works at sea.

Considering that the Belgian government has issued licences for the set-up of eight offshore wind parks, it was clear that the Port of Oostende had to re-think its basic infrastructure to handle all the related installation and maintenance. As such, in 2009, Oostende revised its core strategy, taking on the ambition of becoming the Flemish service port for the blue growth economy.

This has in turn resulted in the set-up of a new public-private partnership called NV REBO (Renewable Energy Base

Oostende), involving the ARTES Group, DEME Blue Energy, Offshore & Wind Assistance, Participatiemaatschappij Vlaanderen (owned by the Flemish government), and naturally the Port of Oostende. The primary goal of NV REBO is to become an efficient and cost-effective offshore terminal for handling, lifting, storing, assembling, and transporting all kinds of offshore components. In this regard, in 2011, Oostende port and NV REBO invested over EUR 5 mln in setting up a heavy load quay and associated storage space, together with an office, for different offshore industry service providers. However, Oostende does not just want to be a ship-in-out assembly plant – it aims at being a cluster of knowledge, best practices, and technology research & development to the offshore industry. The Port of Oostende is therefore making the necessary investments to facilitate the installation, management, and maintenance of offshore wind farms.

Installation & management

Over the years one has learnt that each and every project is different and has its own unique challenges. The quality & design evolution of offshore components is enormous, and experience shows that every sea has its own characteristics: What holds true for Belgian waters, does not work when dealing with the seabed off Danish coasts in the Baltic. For that reason, preparing offshore wind farm elements in a specialized port is of utmost importance before their departure for the installation site. As such, the idea that a wind park can be built using a computer in an office somewhere in Barcelona, linked with a

spreadsheet of an accountancy department in Eastern Europe, is a sheer illusion.

Efficient and cost-effective handling of offshore components is a key task of Oostende port and NV REBO's management. Together with the client we can investigate different options to organize the upcoming port operations. The at-port construction and sea transportation of six gravity-based foundations, with an average weight of 2,700 tn each, is still a landmark within the history of Oostende. Installation vessels like Fred Olsen's *Bold Tern* or DEME's *Innovation* and *Neptune* are regular guests at the Port of Oostende, including very special ceremonies like the one that took place on April 28th, 2016, when Queen Mathilde of Belgium re-baptized Jan De Nul's *Vidar* jack-up heavy-lift vessel as *Vole au vent* in the port. Fancy as it sounds, Oostende nonetheless does not forget about the things which make it all possible, i.e. improving its port's nautical access, extending the turning circle, straightening the quay walls in line with the leading lights, etc.

Managing the whole venture implies, among others, that electricity production at sea needs to be monitored in accordance to the grid supply capacity and at an efficient price-setting, all influencing the profitability of an investment. From a technical point of view, this means that wind farm managers have daily interactions with different subcontractors, service providers, and turbine manufacturers. Wind park managers like C-Power, Otary (having the Rentel, Seastar, and Mermaid concessions), and Parkwind (Rentel, Seastar, and Northwester 2) have chosen to establish their headquarters at the Port

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of Oostende, organizing permanent monitoring of their parks at sea here.

Operations & maintenance

Harnessing the power of wind isn't only about hammering a big steel pole into a seabed and then letting nature do all the work. As in the case of any other business, we're essentially talking about achieving and maintaining optimal efficiency. In effect, several service companies have installed their offices at the Port of Oostende in order to secure the maintenance, while others have asked to open a representation in the Oostende offshore village.

Considering the stable growth of the cluster, the port management has developed a master plan to install these different enterprises on the spot; a plan that takes into account not only safety and security aspects, but also places sustainability high on the agenda (e.g. the port authority is investigating the economic opportunity of installing a prototype of the mid-size 100 kW Xant wind turbine to provide the site with electricity). Implementation of this process is the daily and ongoing business for the port.

Furthermore, the turbine manufacturers Senvion, Siemens, MHI Vestas, and GE have installed their offices, warehouses, and workshops in the Oostende offshore village to quickly respond to emergency maintenance. To make this possible, the port has refurbished several buildings next to the NV REBO terminal, as well as built new premises. As to the offshore industry subcontractors, a wide range of services ranging from IT to training have found their way to the Port of Oostende, including e-Bo, CMI, Multitech, G4S, CG, Buijsse, and Falck Safety.



Photos: Port of Oostende

Additionally, no operations & maintenance activities could do without crew transfer vessels. A number of shipping companies are operating such ships to/from Oostende and Belgian wind farms, just to mention Windcat, Nordfjord, Sima Charters, Sea Contractors, MPI, MCS, Stemat, Turbine Transfers, Geosea, and Offshore & Wind Assistance (the last two being Belgian operators). Moreover, the company GEOxyz, specialized in highly advanced technological underwater surveys and crew transfer, has based its fleet of 17 ships at the port. Next to GEOxyz, Survitec has opened a new premise in order to secure the safety and security on-board the vessels.

In order to broadly support these activities, the Port of Oostende will invest in better mooring infrastructure along with performant IT systems to ensure efficient communication between port users and nautical authorities. Lastly, more land will be prepared for an innovative shipbuilding company that is open to developing more efficient vessels that meet the various needs of wind park operators.

On a challenge wave

Offshore wind parks' construction and maintenance represent the most important part of the blue growth development at the Port of Oostende; however, it's not the only one related to renewable sources of energy. For instance, together with Marintek, Sintef, Highlands & Islands Enterprise, the universities of Aalborg and Brindisi, we have analysed within the framework of the BEPPo – Blue Energy Production in Ports project the role small and medium-sized seaports can play in the development of wave and tidal energy. The Port of Oostende actively supports several other practical initiatives stemming from experimental development to full-scale testing, e.g. the wave projects Flansea and Laminaria have tested their solutions in and around Oostende port's breakwaters.

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There are other blue growth opportunities that can be considered for realization. Due to climate change and rising temperatures, the water level in the North Sea is increasing. To cope with this challenge it is important to develop new techniques and technologies for monitoring the sea level, as well as on- and offshore hydraulic and underwater constructions. The Flanders Bays project (Vlaamse Baaien) has given a positive impulse, opening the door to developing new technologies in this field.

Next, the port is investigating the possibility to establish temporary and permanent test facilities in close cooperation with the marine and maritime industry. Moreover, the existence of wind parks creates an opportunity for the offshore aquaculture to establish new projects in cooperation with wind park managers within the framework of the marine spatial planning, where there is room for the exploitation and management of the seabed, promotion of marine biotechnology, cultivation of algae, all in full respect to the North Sea's eco-system.

In order to realize these ambitions and targets, the Port of Oostende is working in close cooperation with different organizations and institutions that have established themselves in the harbour. An important partner in these developments is the West Flanders Development Agency, which launched the Factory of the Future Blue Energy in 2012 to support clustering and branding of the marine and offshore industry in coastal areas.

As to research, a joint venture has been set up with Ghent University which has resulted in building the GreenBridge incubator centre in Oostende's inner port, hosting start-ups and companies finding their way into the world of renewable energy and blue growth. Other knowledge centres that have established their headquarters here are the Flemish Institute for Agricultural and Fisheries Research (ILVO), and the Flanders Marine Institute (VLIZ). The former investigates new technologies for fishing and management of fish stocks in the North Sea, whereas the latter functions as a coordination and information platform for all the scientific marine and maritime research in Flanders. VLIZ has its own research vessel (named *Simon Stevin* after the Flemish mathematician, physicist, and military engineer), and has built an internationally renowned data-centre. The United Nations Educational, Scientific and Cultural Organization (UNESCO)

has established its project office for the International Oceanographic Data & Information Change (IODE) at the Port of Oostende, too. In 2010, the port brought its relations with the industry even closer thanks to setting up as one of the founding fathers the Flanders Maritime Cluster, an interest group for all the industries that are active in and around the sea, with offices in Oostende's port house.

And most recently, the Belgian Offshore Cluster (BOC) was established, gathering different industrial players from the offshore wind sector, organizing the third edition of the Belgian Offshore Days at the Port of Oostende in March 2017. Finally, the port of Oostende invests a lot in international cooperation with other SME-ports in the North Sea, the Baltic Sea and the Atlantic Ocean. One key example is the DUAL PORTS Project, that has been approved within the North Sea Program (for more details please visit (<http://www.northsearegion.eu/dual-ports>)). This project aims at developing sustainable utilities and abilities in SME ports in order to diminish the carbon footprint of these ports and increase their energy efficiency. Therefore, new technologies are tested and implemented, as well as new systems of smart port management, implementing knowledge added value, in collaboration with research centers and public authorities.

The new blue-coloured normal

As has been the case for decades, Oostende will continue to function as a traditional harbour, taking care of various break-bulk, ro-ro, and dry bulk freight, serving at the same time cruise ships, also being a safe haven for fishermen and their boats. But we as a port authority must adapt to the new normal of mega vessels and all the perils this trend brings about for small and medium-sized ports. Alike in sports (and warfare), the best defence is attack.

The realization of the blue growth strategy – along with other projects from the field of a circular economy, fine chemicals or inland navigation – has given the Port of Oostende a new pillar to rest on in order to guarantee its long-term viability amidst neighbouring seaports where containers stack high & mighty. Anybody wanting to diversify its port business portfolio is more than welcome to visit us and talk about finding one's way through the new normal, painted in blue. ■

