



# ABZ AGGREGATE-BAU: WHEN WIND FARMS NEED ENERGY

*Most ordinary people aren't aware that wind farms don't just generate energy – there are also times when they need to use it. Turbines must turn, or they will seize, and monitoring equipment and other systems must continue to run at all times. The need for generators begins early in a wind farm's development, and they remain an essential component throughout its lifespan.*

**T**hat's where ABZ Aggregate-Bau enters the picture. Mr Holger Swientek, Export Manager at ABZ, is proud of the company's achievements and the global recognition the firm has gained as a result: "ABZ has produced generating sets since 1980, the year the company was founded. Our production

and assembly work is carried out over an area of 9,000 square metres. To date, we have delivered about 7,888 tailor-made generating sets for industrial and marine use to more than 70 different countries, and all are bespoke projects delivered according to customers' requirements," he told InDepth WIND.



## Delivering Generator Capacity to Order

Looking at ABZ's history as a provider of generator sets, the reasons why the wind energy industry was quick to recruit it as an important project partner becomes clear: "The biggest order we completed for one customer was for the power supply of a South American country. It consisted of 968 generating sets installed in 40' containers, and we delivered the generator sets within 18 months," says Mr Swientek.

"In 2011, we got the first enquiries for offshore generating sets for the wind energy industry, and we participated in the delivery of the Nordsee One project in 2015. After a process of detailed technical clarification with the customer, we offered a practicable solution and were able to win the order."

"The Nordsee One project was the second substantial order for generating sets intended for the wind power market, and due to our prior experience in this field, we were able to construct, produce and deliver the three required generating sets within a very short time."

## Specialized Requirements Exemplified by Nordsee One

Offshore wind farms have very specialized requirements, says Mr Swientek, and Nordsee One provides an excellent example. "This project requires a special kind of generating set as there are two different kinds of generating sets. One acts as an emergency set with 400 kVA power output to run the substation in case of grid failure, and two sets of 1875 kVA are needed to run the total amount of wind turbines during the



erection of the wind farm and in case of grid failure.”

“To achieve this, we need a set that is able to withstand the inrush of energy from the 6 kV, 10 MVA transformer which occurs when it is magnetised at start. All this must be installed in a container that is compliant with DNV regulations, which means that the complete installation, including the cabling, the electrical, and the mechanical installation, has to follow the same rules.”

“The challenge, in this case, was not a technical one, but to convince our customer that our technology worked reliably, even in this special kind of generating set with an Inrush of 22 kA. At the time, it was not usual to run the turbines using a low voltage generator which is directly connected to the 6kV Transformer. The experience from the first projects we participated in has been very helpful to us when calculating the necessary power output of the diesel engine and the generator size which is required for such a big load,” says Mr Swientek.

## Maintaining Quality While Cutting costs

Cost reduction is among the most significant challenges facing the wind energy industry today. And ABZ is doing its share in an industry which can no longer rely on heavy subsidisation, but which must comply with the regulations which govern every facet of operations. ABZ’s years of experience in manufacturing marine generators

has benefitted its wind energy clients considerably. Mr Swientek explains: “Marine generators are subject to DNV regulations, and we were able to use our experience to cut the cost involved in compliance with regulations to a minimum by doing away with unnecessary installations.”

“As far as possible, we try to reduce the number of manufacturers necessary to manufacture the generators to a minimum in order to reduce production costs on the one hand and, on the other hand, to keep the maintenance costs and storage costs as low as possible by means of some kind of standardization. In the end, however, the required power generators remain individual productions which have to be adapted to the respective circumstances and customer requirements.”

“Here, we benefit from the technical development that we have gained through manufacturing in order to reduce investment costs and to sell generators which have a reasonable price to performance ratio.”

ABZ is alive to the importance of good supply chain management: “Our connections with our sub-suppliers are very important to us when delivering a reliable product to our customer. Due to our established relationships with suppliers, we are able to achieve the high quality which is required for a generating set that can withstand harsh offshore conditions.”

## ABZ Aggregate-Bau: The Future is Bright

With the wind energy industry continuing to grow and develop worldwide, ABZ sees a role for the company that will extend into future decades: “According to our assessment, even when wind farms use the newest technology, emergency power packs are needed to ensure energy generation. As a result, we are also confident that we will be able to sell generating sets in future, and we will continue to offer our customers the service which we have delivered in previous

decades and which has assured our reputation as a supplier.”

“We are constantly working to be an integral part of this growing market by providing our knowledge and technical expertise. This also includes the constant further development of our products and employees as well as building and maintaining relationships with our customers. ABZ Aggregate-Bau is already networked worldwide, and we were able to place our aggregates on almost all markets. However, as a component supplier, we are not addressed directly by the wind farm operators, but rather by the manufacturers of the substations, and therefore we are also strongly dependent on their success and business connections.”

With the rest of the world looking to Europe for tried and tested wind farm technologies, companies like Senvion anticipate considerable growth in the offshore wind energy industry outside Europe, but with its experience in international markets, ABZ is ready to meet whatever challenges may arise. This may include trade obstacles as a result of the impending Brexit: “Brexit will certainly have an impact on the European wind energy market in that, for example, a number of Europe-wide companies with branches in England are being hampered by new regulations. The rest of Europe will have to deal with these hitherto unknown trade obstacles.”

However, whether the challenges it faces stem from differing sets of regulations, new technical requirements, or the consequences of international politics, ABZ is confident about its future. “ABZ is able to meet the requirements and regulations of the various markets, and we are ready to respond to any inquiries,” concludes Mr Swientek.

