



ROYAL  
**WAGENBORG**



**OUR SPECIALIZED SERVICES TO THE  
WIND POWER INDUSTRY**



**As one of the oldest and largest logistic companies in the Netherlands, Royal Wagenborg has always been a pioneer and today, the company continues to be at the forefront of developments. Wagenborg undoubtedly forges its own path; not many companies have such a complete range of logistic services dedicated to the wind power industry.**

Wagenborg was established in 1898, employs 3,500 people and manages a fleet of about 230 vessels, including multipurpose vessels, ferries, icebreaking supply vessels, tugs, pontoons, a fast crew transfer vessel and offshore support vessels. In addition, Wagenborg provides heavy lifting and transport solutions, 1,800 m of quay and 390,000m<sup>2</sup> of storage space.



# DEDICATED TO THE WIND POWER INDUSTRY

Royal Wagenborg offers full scope logistic services to the wind power industry, from the transport of components by vessel or barge, onshore installation and (pre)assembly works, transhipment and storage to offshore support and supply. Our experienced crews can handle any project management question and any logistic challenge. Discover how our services can be a solution for your logistic challenges.

## TRANSPORT



## ONSHORE INSTALLATION



## (PRE)ASSEMBLY



## TRANSHIPMENT & STORAGE



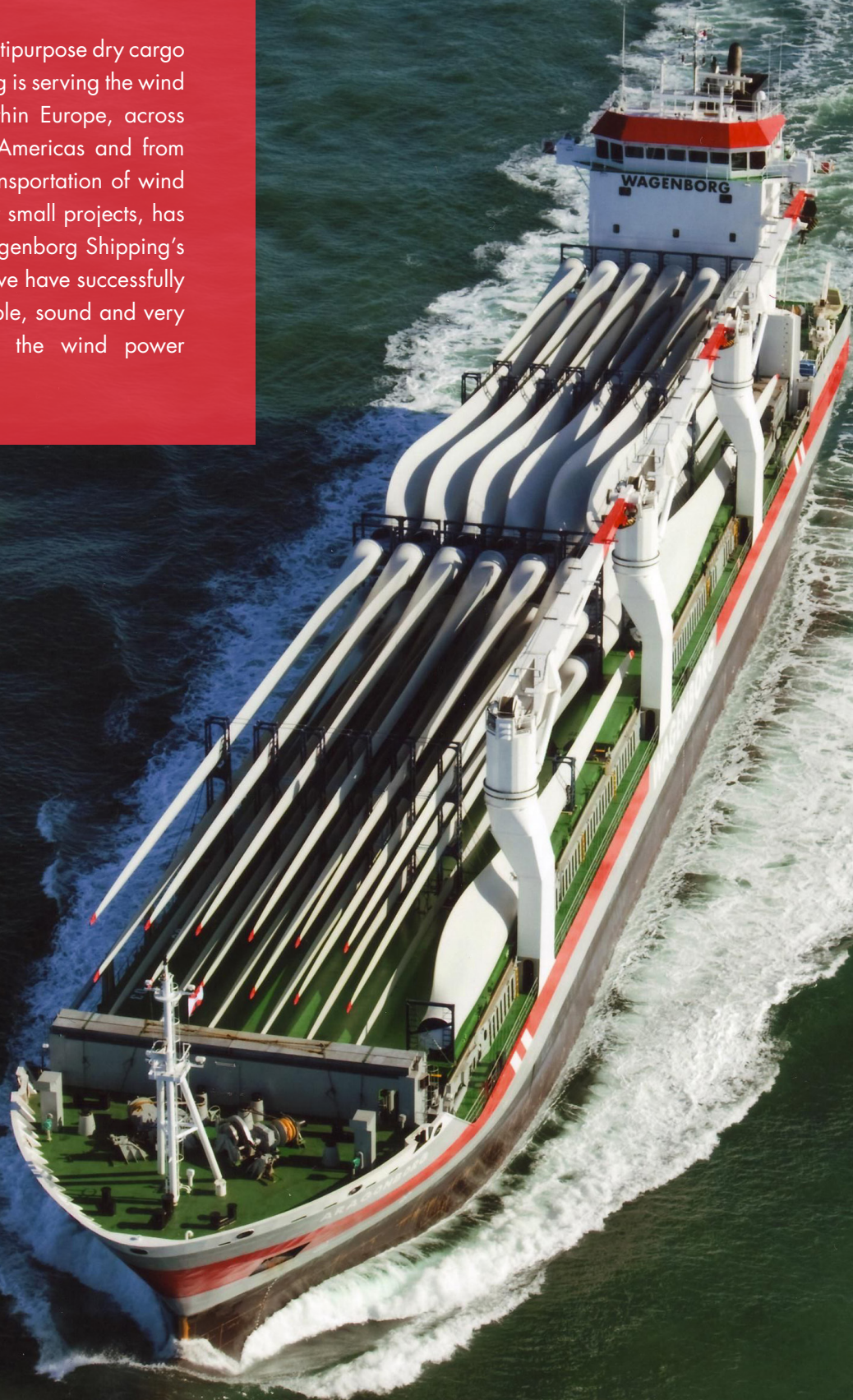
## OFFSHORE SUPPORT & SUPPLY



## OPERATIONS & MAINTENANCE



With about 180 multipurpose dry cargo vessels, Wagenborg is serving the wind turbine industry within Europe, across the Atlantic to the Americas and from Asia to the US. Transportation of wind turbines, in large or small projects, has become one of Wagenborg Shipping's focus areas where we have successfully proven to be a reliable, sound and very flexible partner to the wind power industry.



# TRANSPORT

Over the past years, Wagenborg has built up an excellent reputation in the wind power industry. In many cases heavy and oversized components for wind farms need to be transported to their destination. Onshore and offshore. This often concerns a demanding and challenging project where we always opt for the safest and most efficient solutions for transport. With our comprehensive knowledge, experience and wide range of own equipment, such as multipurpose vessels, tugs, pontoons, heavy duty trucks and modular trailers, Wagenborg is able to find a suitable transport solution for any logistic challenge in the wind power industry.

- **180 multipurpose vessels**
- **1.700 - 23.000 DWT**
- **ice classed vessels**
- **geared - non geared vessels**
- **11 pontoons (inland and seagoing)**
- **660 - 20.000 DWT**
- **7 tugs up to 62 ton BP**
- **Modular trailers**
- **Heavy duty trailers, lowloaders and semi lowloaders**



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## REFERENCES

- 1. DanTysk (2013)**  
Transport of jacket and topside from fabrication yard to offshore location.
- 2. Borkum Riffgat (2013)**  
Transport of substation topside from fabrication yard to offshore location
- 3. Global Tech I (2013)**  
Transport of tripods with tugs and barges, different additional barging activities, including topside transport.
- 4. Eemshaven (2012)**  
Transport of nacelles, blades, tower sections and hubs of 2 x REpower 6M on-site.
- 5. Borkum West II (2012)**  
Transport of all components for 40 x Areva - M5000 wind turbine generators from several german ports to Eemshaven.
- 6. Rysumer Nacken (2011)**  
Transport of nacelle, hub and blades with tugs and barges for 2 x BARD - Bard 6.5.

**Royal Wagenborg operates a variety of cranes up to 750 tons capacity.**

All of our cranes are equipped with a luffing fly jib and most of them with superlift attachment, which makes a large range of configurations possible. Of course, all our cranes are operated by skilled and experienced crane drivers. We herewith offer a full package of heavy lift services with modern equipment and a skilled project team.



# ONSHORE INSTALLATION

With our wide range of trailers, crawler cranes and mobile cranes we have built an excellent reputation in the onshore installation of wind turbine generators. From a simple installation job with one hydraulic crane to a complicated hoisting project with a range of equipment - Wagenborg guarantees the flexibility and choice in transport you are looking for. With our network of offices we are able to offer an optimum availability of equipment, short travelling times, and flexibility in planning. This means every project will be carried out competently and efficiently by our experienced crews.

- **Crane fleet of 150 cranes**
- **Mobile cranes up to 700 tons capacity**
- **Crawler cranes up to 750 tons capacity**
- **Conventional modular trailers with max. axle load of 36 tons**
- **Self propelled modular trailers with max. axle load of 40 tons**
- **Experienced crews**



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## REFERENCES

- 1. Pitea (2013)**  
Erection of 36 Enercon WTG within the Skogberget and Markbygde onshore wind farms with a 400t and 750t crawler crane.
- 2. Essent Westereems (2013)**  
Exchange of Enercon E82 nacelle at onshore Westereems wind farm with a 500t crawler crane.
- 3. Essent Westereems (2012)**  
Exchange of generators at 20 x Vestas 90m WTG with a 500 t mobile crane plus further equipment.
- 4. Frauenmark (2011)**  
Erection of 4 wind turbines in Frauenmark MVP with a 750 t crawler crane.
- 5. Luna (2010)**  
Erection of 3 x Enercon - E70 wind turbine with Terex CC2500 - 500t crawler crane.
- 6. Zürich (2009)**  
Pre-assembly and erection of 4 x Enercon - E82 wind turbines with a 400 tons crawler crane.

**Our logistic hub in Eemshaven offers many opportunities to the wind-power industry. Our facilities are located in the north of the Netherlands near many wind farms in development.**

Our terminal has an area of over 100.000 m<sup>2</sup> which is perfectly suited for the pre-assembly of rotor stars.

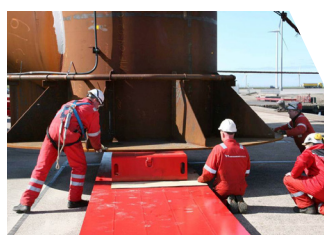




# (PRE)ASSEMBLY

Wagenborg offers large covered and open storage areas and terminals in the ports of Delfzijl and Eemshaven with a total capacity of 390.000m<sup>2</sup>. These facilities are located in the north of the Netherlands near many wind farms in development. Our facilities are perfectly suitable for the (pre) assembly of wind turbine generators and rotor stars, as we executed before for offshore wind farms such as BARD Offshore I and Alpha Ventus. With our extensive range of mobile cranes, trucks and trailers Wagenborg is the perfect partner in the (pre) assembly of wind turbines.

- **Covered and open areas**
- **Complete rotor star assembly**
- **Load out of rotor stars**
- **Logistic support**
- **Assembly area of 30.000 m<sup>2</sup>**
- **Extensive range of mobile cranes**
- **Diverse fleet of trucks and trailers**



## REFERENCES

- 1. Borkum West II (2014)**  
Pre-assembly of 40 x Areva M5000 wind turbine generators and load out of rotor stars.
- 2. BARD Offshore I (2013)**  
Pre-assembly of 80 x Bard 5.0 wind turbine generator and load out of rotor stars.
- 3. Eemshaven (2012)**  
Pre-assembly of 2 x REpower 6M wind turbine generators at Wagenborg Terminal.
- 4. Alpha Ventus (2009)**  
Pre-assembly of 6 x REpower 5M wind turbine generator and load out of rotor stars.
- 5. Alpha Ventus (2009)**  
Pre-assembly of 6 x Areva M5000 wind turbine generator and load out of rotor stars.

Besides the fact that our Eemshaven terminal plays a central role in the offshore wind industry as an onshore hub, it is also a test ground for two wind turbines. Recently RWE/Essent selected our terminal as the onshore location to place one of two 6MW offshore wind turbine generators.

Royal Wagenborg took care of the transport of these 6MW turbines to Eemshaven with one of our vessels, while for the on-site logistics a 750t crawler crane and a 16-axle modular trailer played a key role.



# TRANSHIPMENT & STORAGE

Our logistic hubs in Delfzijl and Eemshaven offer opportunities to many industries, among which recently the wind-power industry has been a significant player. Our terminals, with a total storage area of 390,000m<sup>2</sup>, are perfectly suited to loading, unloading and transhipment of many types of cargo. They are excellent for the transhipment and storage of heavy wind turbine components. In addition, Wagenborg provides heavy duty trailers, SPMT's and heavy mobile and crawler cranes to ensure a safe and efficient on-site transport. Besides our logistic services Wagenborg is AEO certified, which ensures all customs formalities to be executed in a professional manner.

- **Terminals in Delfzijl and Eemshaven**
- **Open en covered storage**
- **Total storage of 390.000m<sup>2</sup>**
- **1,800m of quay**
- **RORO facilities**
- **Deep draught**
- **AEO-certified**
- **ISO 9001 certified**
- **ISO 14001 certified**
- **GMP+B3 certified**
- **OHSAS 18801 certified**
- **VCA trained personnel**



## REFERENCES

- 1. Eemshaven (2012)**  
Transhipment of 2 x REpower 6M wind turbine generators at Wagenborg Terminal with 750 tons crawler crane and conventional trailers.
- 2. Borkum West II (2011)**  
Transhipment and temporary storage of 40 x Areva M5000 wind turbine generators.
- 3. BARD Offshore I (2010)**  
Transhipment and temporary of tripods and pre-piles concerning 80 x Bard 5.0 wind turbine generators.
- 4. Alpha Ventus (2009)**  
Transhipment and temporary storage of 6 x Areva M5000 wind turbine generators.
- 5. Alpha Ventus (2009)**  
Transhipment and temporary storage of 6 x REpower 5M wind turbine generator.
- 6. Westereems (2009)**  
Transport, transhipment, storage and pre-assembly of 64 x Enercon - E82 wind turbine generators.



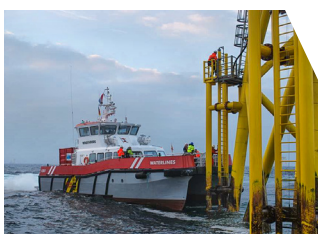
**As part of the Wagenborg Group shipyard Royal Niestern Sander expanded into a modern and diverse shipyard with customers all over the world.**

At Niestern Sander we take care of vessels - from shipbuilding to repair and from design to maintenance. We handle a broad range of vessel types from bulk carriers to general cargo vessels and from the recent icebreaking offshore support vessels to the pioneering work vessel.

# OFFSHORE SUPPORT & SUPPLY

Wagenborg is a specialist in offshore support and supply services. With our versatile and diverse fleet, consisting of icebreaking supply vessels, support vessels, shallow draught tugs, a fast crew transfer vessel and a pioneering new build “walk-to-work” vessel (completion planned for 2015), we offer specialized services. These services consist of provisioning, icebreaking, tug services and crew transfers. By doing so Wagenborg profiles a supply strategy that can be complemented with stock management, equipment, people and safety management.

- **Shallow water specialist**
- **Ice infested water expert**
- **Environmentally sensitive**
- **Diverse fleet**



## REFERENCES

- 1. NAM/Shell UK (2013)**  
Design and building of walk-to-work vessel to support maintenance activities of 56 offshore platforms in southern North Sea in the upcoming 10 years.
- 2. Nordsee Ost (2013)**  
Providing crew transport with crew transfer vessel Waterlines.
- 3. Dolwin Alpha (2013)**  
Wagenborg terminal Eemshaven as onshore hub taking care of the supply scope during installation and commissioning of platform.



The 'Walk-to-Work' vessel offers work and storage facilities plus accommodation for up to 60 people. The dynamic positioned vessel is specially designed for safe offshore operations and environmental conditions of a wind speed of 30 knots and waves up to 2,5 meters. Discover how efficiency, safety, comfort and the environment inspired her design.

# OPERATIONS & MAINTENANCE

Recently Wagenborg took another step in her existence by designing a unique type of offshore maintenance vessel that will support offshore operations and maintenance in a new manner. Dubbed the 'Walk to Work' vessel, the new unit is a genuinely unique design which is considered a game changer to the offshore industry. The vessel offers work and storage facilities plus accommodation for up to 60 people. The dynamic positioned vessel is designed for 300 days of year-round operations. To ensure safe offshore operations several motion compensated elements, such as an access system and crane, are implemented in the vessel's design to compensate waves up to 2,5 meters. The vessel can be considered absolutely green and clean.

- **Workspace, storage, hotel and transport in one unique design**
- **Dynamically positioned (DP II)**
- **Heave compensated crane**
- **Motion compensated access bridge**
- **Deck area of 500m<sup>2</sup>**
- **60 persons accommodations**
- **Environmentally friendly**
- **Length: 79 m overall**
- **Width: 16 m**
- **Draught: 5.4 m**
- **Service speed: 13 knots**

**Expected to be delivered early 2015**





**sign of solutions**

**ROYAL WAGENBORG**

P.O. Box 14, 9930 AA Delfzijl  
Marktstraat 10, 9934 CK Delfzijl  
The Netherlands

T +31(0)596 636 911  
F +31(0)596 636 250  
E [wind@wagenborg.com](mailto:wind@wagenborg.com)

**[www.wagenborg.com](http://www.wagenborg.com)**

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