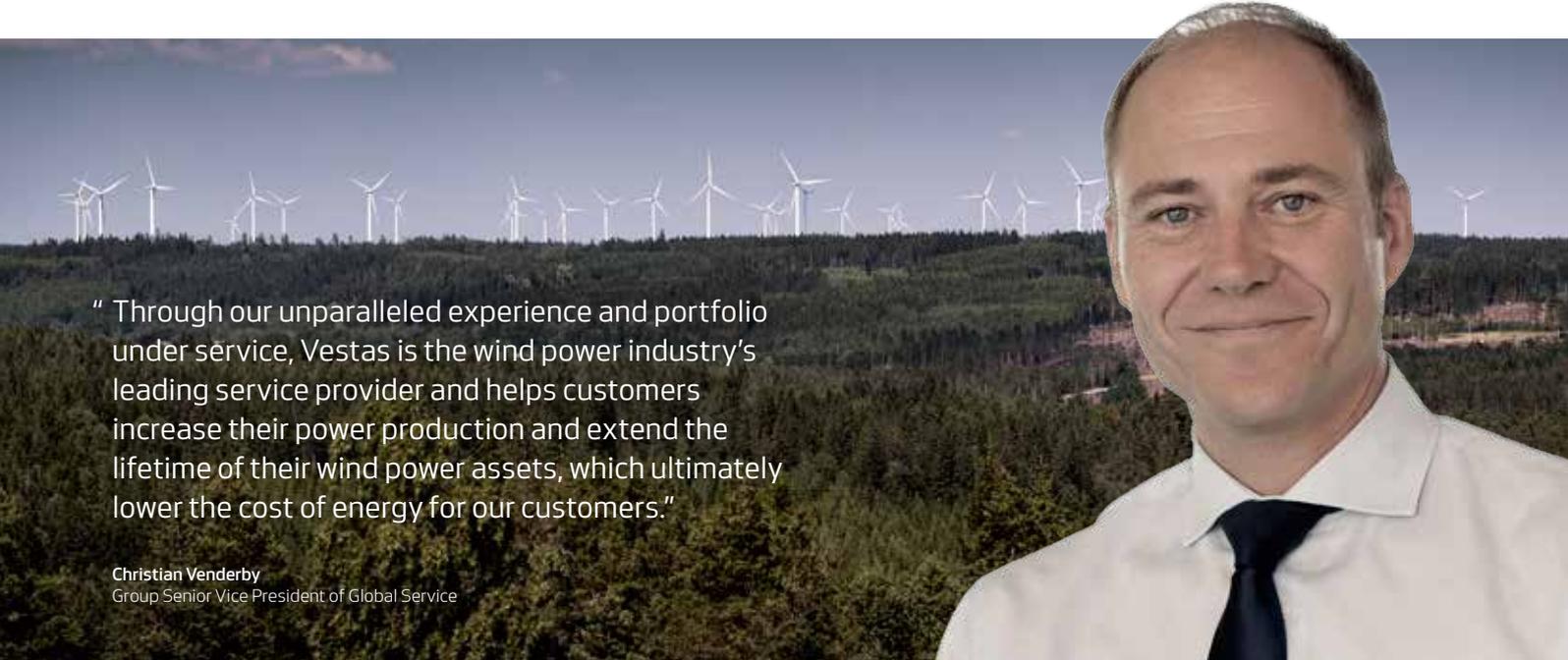


Service – Sales and market development



“ Through our unparalleled experience and portfolio under service, Vestas is the wind power industry’s leading service provider and helps customers increase their power production and extend the lifetime of their wind power assets, which ultimately lower the cost of energy for our customers.”

Christian Venderby
Group Senior Vice President of Global Service

Outlook and market trends for the service business

The service market is expected to provide a strong long-term platform for Vestas to grow its business.

The service market is growing faster than the market for wind turbines and is becoming more and more important to Vestas as customers shift their focus from capital expenditure to total cost of ownership. The latest market reports indicate that the service market is expected to grow by 9 percent annually over the next 10 years.¹⁾

The Vestas service business is a key element in the company’s long-term corporate strategy. With data derived from the world’s largest installed fleet and more than 35 years of technical insight, Vestas’ goal is to release the full potential of Vestas customers’ wind power businesses. That is why a service partnership with Vestas stands apart.

Changes in customer needs are creating new trends in the market. Vestas is observing a customer trend away from availability toward a greater focus on lifetime service costs and output optimisation. Other general trends that can be observed within wind turbine operations and maintenance are the increased demand for unique offerings as opposed to standard products as well as greater importance of data solutions.

Finally, to succeed in the service market, understanding the commercial needs and the strategies of the asset owners are crucial.

Strategic position and ambitions for the future

More customers choose to build in-house service capabilities while more independent service providers are emerging, leading to increased competition. Thus, to maintain its leading position in the service market, Vestas will continue to invest in its service business.

Vestas’ extensive data processing and asset management capabilities enable anticipating and planning service requirements. This means that Vestas has been able to keep a Lost Production Factor consistently under 2 percent. Vestas’ technology and service know-how are mutually reinforcing elements in maximising wind power plant output and lowering the cost of energy.

1) Source: MAKE Consulting: Global Wind Turbine O&M. 22 November 2016.

As part of Vestas’ goal to become the leader in the service solutions market, Vestas will grow its multi-brand service solutions. Multi-brand service solutions offer a large opportunity as Vestas turbines cover approx 16 percent of the total installed fleet worldwide.

Vestas’ service business is expanding with an installed base of more than 37,000 wind turbines under service by the end of 2016, and with a revenue increase of 171m from EUR 1,138m in 2015 to EUR 1,309m in 2016. Combined with the global footprint of the service organisation and the unmatched ability to analyse data related to wind and weather conditions, the installed base of wind turbines gives Vestas a distinctive advantage, which provides ideal conditions for stable growth going forward.

During the year, the service business grew by 15 percent – excluding impact from acquisitions and foreign exchange rate developments, the organic growth amounted to 8 percent.

Vestas will continue to expand the catalogue of service offerings and improve existing solutions to increase the customers’ output and lower the cost of energy. Based on current market opportunities and order intake, Vestas has an ambition towards 2020 to grow the service business organically by more than 50 percent.

At the end of 2016, Vestas had service agreements in the order backlog with expected contractual revenue of EUR 10.7bn an increase of EUR 1.8bn compared to 2015, and the expectation is that the service business will continue to grow with stable margins in 2017. The main dilutive effects from acquisitions are expected to be fully absorbed by the end of 2017.

Four service business areas

Vestas’ service offerings are divided into four business areas:

- Maintenance partnering
- Parts & repair offerings
- Fleet optimisation solutions
- Data & consultancy services

– each of which contributes to increasing performance and lowering the cost of energy for customers' wind power plants. Vestas works closely with its customers to tailor service packages to meet site-specific wind power plant requirements. Responding to Vestas customers' evolving demands, Vestas offers a new generation of flexible fleet optimisation capabilities such as advanced plant and data management, diagnostics, and forecasting.

Maintenance partnering

The core of Vestas' service business is the partnerships the company engages in with customers that need Vestas to monitor the wind energy production, do preventive maintenance, and ensure continuous maximum performance of the wind power plant throughout its lifetime.

Vestas customers benefit from the Group's scale and its efficient, cost-effective global supply chain, thus creating a great advantage in the competitive market. Vestas' service organisation operates on a global basis, with warehouses and service centres distributed across more than 50 countries, plus three 24-hour surveillance centres located in Portland, USA; Madrid, Spain; and Chennai, India.

The Active Output Management® (AOM) concept addresses this need: The service programme ensures the highest output at all times, giving customers a predictable return on investment.

Average contract length per contract type (initial contract and renewal) has increased in recent years, a testament to Vestas that its customers continue to value its contract offerings. Vestas has several examples of 20-year service contracts, indicating the long-term partnership Vestas strives to have with its customers.

Service agreements signed with new wind turbine orders*

Percent (of MW service order intake)

Type of contract	2016	2015
AOM 2000	6.0	4.3
AOM 3000	11.4	6.4
AOM 4000	45.9	42.3
AOM 5000	36.7	47.0

* AOM 1000 not included as it conceptually registers as pay-as-you-go services on demand.

Parts and repair offerings

Choosing the right repair solution at the right time is critical when taking care of the components, thereby reducing cost and increasing output of the wind turbines. Vestas' parts and repair set-up allows its customers to access a one-stop parts and repair shop, where all service needs are covered, from preventive inspections to advanced repairs. Vestas distributes more than 500,000 parts per year and co-operates with more than 1,000 suppliers globally, to make sure that costs are minimised.

In 2016, Vestas established a new global repair function: Global Repair Operations. The new function takes over all responsibility for Vestas' repair operations and locations. The aim with the new function is to align all internal and external repair activities in Vestas and create a centre of excellence for industry leading fleetwide repair offerings.

During the year, Vestas also introduced an eCommerce channel within parts and repairs. Vestas' ambition is to provide a simple and convenient way for the customer to identify and order spare parts and consumables.

While the parts & repair business is more variable compared to the rest of the service operation, it remains an interesting area to further develop as it supplements the offerings provided under the maintenance partnering concepts.

Fleet optimisation solutions

With more than 35 years of experience in optimising wind turbines, Vestas knows that individual needs deserve a tailor-made approach. Vestas' fleet optimisation solutions can help customers release the full potential of their wind power business.

Vestas PowerPlus™ is a key offering targeted existing wind power plants. Vestas PowerPlus™ optimises the performance of the wind power plant by up to 5 percent.

In addition, a wind turbine life extension programme has been developed, called Vestas LifePlus™ that allows the owners to continue operating the wind turbines beyond their initially estimated design lifetime. Vestas LifePlus™ solutions offer up to 25-50 percent extended life.

Data & consultancy services

In 2016, Vestas strengthened its data & consultancy offerings by establishing a separate business area devoted to commercialising the current extensive in-house data insight and processing capabilities applied to create transparency on historical and future asset performance and anticipate and plan service activities to lower the cost of energy. Vestas has the largest data source in the wind power industry with more than 32,000 wind turbines online.

Vestas ensures that customers can transfer and access data through the optimal applications, allowing them to focus on the core of their business. From the biggest fleet of wind turbines in the world, Vestas is able to transfer huge amounts of data real-time to the Vestas data eco-system enabling its customers to take decisions based on insights. Depending on customers' organisational needs, Vestas identifies possibilities for optimising their infrastructure and tailor solutions that fits their needs. Vestas is also able to integrate any other renewable energy asset into Vestas' own data system.

In 2016, the company introduced Vestas ClearSight™, which is an industry leading data tool that offers a combination of infrastructure solutions, analytical/computational software, data products, consulting services, and operational services.

Acquisitions support fleetwide partner growth

In December 2015, Vestas acquired the independent US service provider UpWind Solutions, Inc., followed by the announcement in early 2016 of the agreement to acquire the German-based company Availon Holding GmbH. These acquisitions have strengthened Vestas' offerings within servicing of both Vestas and non-Vestas wind turbines and are expected to further accelerate the corporate strategy within the service area. The ambition is to become the preferred fleetwide lifetime service partner globally.

Vestas currently services more than 71 GW of installed capacity, of which the service backlog consist of approx 8 GW non-Vestas turbines. Vestas will use its unmatched database and analytics capabilities to further accelerate servicing of third-party wind turbines. Today, Vestas covers approx 16 percent of the total installed capacity, but the ambition is to increase this share by growing services on third-party wind turbines along with keeping renewal rates at a steady high level. On top of Vestas' regular service offerings, Vestas experience an increasing demand for advanced service offerings, driven by customers' search for new improvement levers.

In May 2016, UpWind Solutions, Inc., a fully owned subsidiary of Vestas, announced the signing of a multi-site service contract with Berkshire Hathaway Energy and its subsidiaries MidAmerican Energy Co. and PacifiCorp, to provide maintenance services for 1.75 GW of third party wind turbines across 15 sites located in USA. The contract was a great achievement and Vestas recognises that customers are increasingly demanding a lifetime service provider that can maximise performance across a variety of wind turbine models.

Customer relations

On the service business, the 2016 survey results show that overall, customer perception of Vestas Service improved year-on-year, reflected by the Net Promoter Score (NPS), which rose from 22 to 52. The NPS especially improved in the German service customer base.