NEW TRADEWINDS
power Vestas forward

Leading power systems manufacturer Vestas has stepped back from a cliff and produced a financial uplift in the last four years, culminating in record-breaking results in 2016. Andy Probert profiles the developments at the globe’s foremost name in the wind energy sector, rising orders and the commitment of elite suppliers in helping to turn its fortunes around.

To say it’s been a whirlwind at the world’s only global energy firm dedicated solely to wind power, Vestas Wind Systems, is probably an understatement.

From nearly going to the financial wall four years ago, it has turned fortunes around with the end of 2016 ringing to the cheers of shareholders after posting record-breaking results and a host of orders flowing into the Danish manufacturer’s hands.

The expression of satisfaction can’t be far from Anders Runevad, Group President and CEO, who helped spearhead a restructuring of the company, making it more flexible and lean.

2016 second-quarter results reached €2.56 billion, a staggering 46% compared to 2015 results. Operating profit before special items hit €399 million – a figure more than double analyst forecasts of €190 million.

A ‘really satisfied’ Mr Runevad, who saw shares peak to an eight year high in 2016, credited the near-resuscitation of the company and a surge in the wind power markets as overheads and costs came tumbling down.

Anders Runevad, Group President and CEO
The turnaround for the global turbine maker has been nothing short of spectacular with financial collapse looking a dead cert in 2012 and with government subsidies globally being scaled back.

**New markets**

The company had worked, he said, to eradicate the boom and bust experiences pre-2012 and sought to deliver consistently high quality orders in more than 30 markets worldwide.

With more than 10,200 employees, Vestas manufactured and shipped 3,330 wind turbines in 2015 – an increase of 30% over 2014. This resulted in 100% of electricity consumption from renewable sources in 2015 and, significantly, no environmental accidents.

To date, Vestas has delivered wind turbines in 75 countries around the world and has manufacturing facilities in eight countries - throughout North and Latin America, Europe, and Asia.

“By continuing to manufacture core components in house, while acquiring non-core wind turbine components from a group of sub-suppliers chosen through a careful selection process, the current manufacturing setup of Vestas is established as one that is lean and scalable, but nonetheless with the Vestas quality stamp on every single wind turbine sold,” ventured Jean-Marc Lechêne, Executive Vice President and COO, in the 2015 financial statement.

He said resources had also been deployed for the implementation across its blades factories of the new structural shell production setup. The installation of the new moulds and the process for the new production lines for the V110 and V126 blades were fully rolled-out by the end of 2015, with the V136 blades to follow in the coming years.

The new blade design reduces the capital investment in new production lines because of a much-reduced use of equipment required in the production.

In Brazil, to comply with country requirements to increase local content supply levels, Vestas signed partnership agreements with local suppliers. It also invested in the construction of a new factory, warehouse and training facility, all of which began operations in December 2015.

Vestas also announced plans to open a new blade factory in India in 2017, supplementing its existing plant in Chennai.

**Improving local supply chains**

Mr Lechêne said Vestas had continued working on establishing supply chains in new markets around the world. “As the company is maturing, the need for flexibility and agility is also extended to supplier partnerships, requiring key suppliers to be able to act quickly and adapt to market shifts.”

Within this scope, Vestas was rolling out a supplier account management programme and forming close partnerships with large suppliers and involving them in the development of products and processes as “suppliers often possess many years of knowledge and experience.”

The commitment was exemplified by Vestas holding an annual supplier day, during which workshops were held to identify initiatives by which suppliers could become more active contributors.

Vestas recognises its suppliers annually in three different supplier awards categories, including the supplier that provides the best support in helping it to achieve profitable growth.

These initiatives have also been underpinned by several internal developments, including an innovative new wind turbine design, with one featuring four separate rotor blades.

**New concepts and products**

This, said Jorge Magalhaes, Senior Vice President, Vestas Innovation & Concepts, was aimed at turning convention on its head by going against the assumption that to increase wind power output one simply builds larger turbines.

Vestas is working on the feasibility of the multi-rotor concept with Denmark’s Technical University, in a bid to develop “an even more cost-efficient turbine.”

The concept seeks to meet the challenge of different planning regulations across the world affecting wind turbines and the localised impact of their installation.

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Vestas’ new design, which seeks to deliver high and efficient energy production in low and medium wind conditions when applied to the 66.7m long blades, enables a 16% increase in annual energy production while at the same time minimising structural loads.

Its main features include a rotor diameter of 136m, hub heights of up to 149m with the potential to exceed 160m, as well as a high-torque gearbox and a large-diameter tower concept.

V136 and new orders

The V136 retains a state-of-the-art tip speed, and combined with the innovative blade design which incorporates new-generation in-house developed high-performance aerofoils with a high-lift/low-drag ratio, Vortex generators and comb-shaped serrated trailing edge (STEs), offers improved noise performance.

Vestas recently installed its first V136 at the Fristedsfjall national test centre for large turbines in northern Denmark. The turbine underwent extensive testing and verification and full-scale production is expected within the next six months.

Since its introduction, back in late 2015, Vestas has added several upgrades to the design, including Power Optimised Modes. Anders Vedel, Executive Vice President for Technology and Service Solutions, reported: “The successful installation confirms that we are on track towards full-scale production of the turbine. The bigger rotor, taller tower, and advanced aerofoil blade design make the V136-3.45 MW a very strong offering for customers.”

Production will be centred on Europe and China to leverage the continuous supply chain localisation in the Far East for the global supply.

Vestas has installed more than 11GW of 3MW turbines in 33 countries across six continents. Just months after its launch to the market, Vestas received an order for 34 V136-3.45 MW turbines for the 117MW Metsälä wind power project. When built the wind farm will be Finland’s largest onshore wind project.

In the closing months of 2016 and through January 2017, Vestas has been riding a series of fresh orders from across the globe – its highest intake for six years – again highlighting how its cutting-edge technology is at the forefront of the wind energy market and the continued focus on renewables.

The Danish company took a number of high-profile orders last-minute orders from the US despite Donald Trump’s election win and his support for conventional fossil fuels. It was anticipated that Vestas’ final 2016 tally, which had already hit 8,920MW of power, may well exceed Vestas’ 2015 sales tally of 8,940MW.

Vestas announced at the end of December 2016 that it had taken 15 – equating to more than 1,000MW – orders for wind turbines and turbine components to power wind farms across the US – enough to meet the needs equivalent to 453,600 US homes.

11 of these orders will be handled by its four Colorado plants that collectively employ more than 4,000 people.

Other highlights included a wind turbine supply order from South Korea. The deal, signed with GS Yeongyang Windpower, concerns the second stage of the Yeongyang wind project. Vestas will supply and supervise the installation of seven V112-3.45 MW turbines for the scheme.

The order also includes a ten-year Active Management 4000 (AM4000) service contract and a VestasOnline Business SCADA system for data-driven monitoring and preventive maintenance.

Installation and commissioning of the Korean wind park are to take place during the fourth quarter of 2017. The 59.4MW project, when commissioned in 2019, is owned by GS Yeongyang Windpower.

Meanwhile, its flagship model, the V164-8.0 MW (totalling about 370MW) wind turbines for Norther – Belgium’s largest offshore wind project. The latter order for MHI Vestas is a joint venture between Vestas and Mitsubishi Heavy Industries (MHI). The Norther project, when commissioned in 2019, is owned by Norther NV, a joint venture between Elicio and Boreas with three sponsors – Elicio NV, Eneo and Mitsubishi Corporation.

Hence, Mr Runevad’s expression of ‘satisfaction’ clearly underlining a very healthy 2017 ahead.