

News release from Vestas Wind Systems A/S

Aarhus, 24 January 2019

Vestas introduces EnVentus™ – Vestas' innovative modular platform, starting with two new industry-leading wind turbine variants

Vestas has been at the frontier of wind energy for 40 years, introducing market-leading wind energy solutions that have driven the down cost of energy¹ and taken wind energy from niche to mainstream. Today, Vestas introduces the EnVentus wind turbine platform, which represents another significant step forward in the continuous efforts to lower the levelised cost of energy and accelerate the global transition to a more sustainable energy mix.

The EnVentus platform will initially be available in two new variants: the V150-5.6 MW and V162-5.6 MW, together covering low, medium and high wind conditions. Based on advanced modular design, EnVentus supports Vestas' vision to become the global leader in sustainable energy solutions and provides a wider range of turbine configurations that can better meet evolving customer needs.

EnVentus represents the next generation of wind turbine technology and connects four decades of wind energy innovation with the experience and knowledge represented by Vestas' 100 GW of installed wind turbine capacity. The new platform demonstrates the benefits of Vestas' industry-leading investments in R&D and unmatched volume of wind data.

Anders Runevad, Vestas President and CEO, says *"EnVentus is a great achievement by everyone at Vestas that allows us to meet customers' increasing needs for customisation and continuous reduction of the cost of energy. Our relentless focus on delivering industry-leading revenue and profitability the past years has given us the resources to develop a new platform built on our world-class R&D. Following our 2018 order record and 100 GW milestone, EnVentus is another important step in Vestas' journey to become the global leader in sustainable energy solutions"*.

As Vestas' first platform introduction since 2011, EnVentus combines proven technology and system designs from Vestas' 2 MW, 4 MW and 9 MW platforms with advanced modularity, building a foundation that reliably and efficiently lowers the cost of energy. The journey towards a modular platform was initiated in 2012 and is expected to create increased scale advantages and opportunities to optimise current and future value chain needs, such as design cycles and transportation.

Anders Vedel, Vestas Chief Technology Officer, says *"Vestas has pioneered wind energy since 1979 and by introducing EnVentus and its first two variants, we connect heritage with innovation to underline our technology leadership. With the introduction of a platform built on advanced modularity, we increase our ability to provide customised solutions while ensuring value chain optimisation. I'm incredibly proud of everyone in Vestas who has been part of developing our new platform and variants, once again showing Vestas has the most passionate and innovative minds in the industry"*.

The platform's first two variants: the V162-5.6 MW and V150-5.6 MW will be globally applicable and are added to the wide range of Vestas' existing 2 MW and 4 MW platform turbines, giving customers an unmatched combination of turbines to harness wind in any specific location. The turbines feature a full-scale converter, capable of meeting complex and differing grid requirements in local markets. The full-scale converter is matched by a permanent magnet generator for maximum system efficiency and balanced by a medium-speed drivetrain.

¹ Levelised cost of energy of onshore wind has decreased 46 percent since 2009. Source: Bloomberg New Energy Finance, 2H 2018 Levelised Cost of Energy Update – Global, 11/2018, aggregated by Vestas Wind Systems A/S.

With a swept area of over 20,000m², the V162-5.6 MW offers the largest rotor size in onshore wind to achieve industry-leading energy production. When paired with a high capacity factor, the V162-5.6 MW offers 26 percent higher annual energy production than the V150-4.2 MW, depending on site-specific conditions. It is primarily relevant in low to medium wind conditions, but also has extensive applicability in high average wind speeds depending on site-specific conditions. The first V162-5.6 MW prototype is expected to be installed in mid-2020, with serial production later that year.

The V150-5.6 MW takes our existing 150m rotor and applies it to higher wind speeds and extended market applicability. When combined with its higher generator rating, the turbine increases the annual energy production potential by 30 percent compared to V136-4.2 MW depending on site specific conditions. It is primarily relevant in medium to high wind conditions. The first V150-5.6 MW prototype is expected to be installed in the second half of 2019, while serial production is scheduled for mid-2020.

Initially, the new variants are targeted at the onshore market, but may have offshore applicability.

The name EnVentus combines “energy”, “environment”, “invent” and the latin word for wind “ventus” to encompass our pioneering and innovative heritage within wind energy and aspiration to lead the global transition to a more sustainable energy system.

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About Vestas

Vestas is the energy industry’s global partner on sustainable energy solutions. We design, manufacture, install, and service wind turbines across the globe, and with 100 GW of wind turbines in around 80 countries, we have installed more wind power than anyone else. Through our industry-leading smart data capabilities and unparalleled volume of wind turbines under service, we use data to interpret, forecast, and exploit wind resources and deliver best-in-class wind power solutions. Together with our customers, Vestas’ more than 24,400 employees are bringing the world sustainable energy solutions to power a bright future.

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