

# Vestas Rotor Upgrade

## Benefits of Vestas Rotor Upgrade

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- Increased annual energy production
  - Reliable and proven technology
  - Extended lifetime thanks to upgraded components\*\*
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Releasing the full potential of operating wind turbines

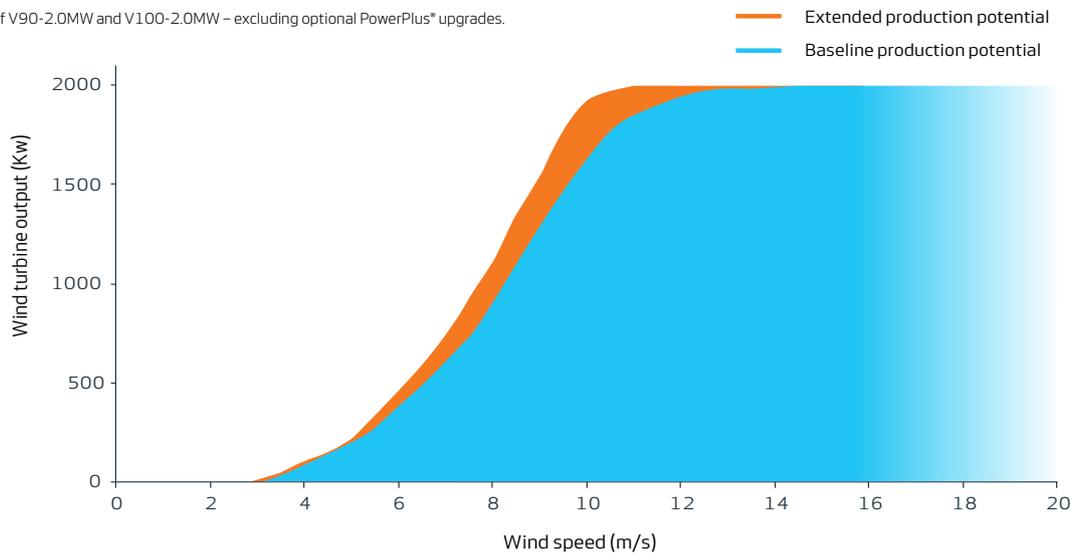
### Improved wind capture for higher energy production

Vestas Rotor Upgrade is an after-sale solution that consists in supplying and installing larger rotor and blades on operating wind turbines. The larger rotor size leads to an expanded swept area, which improves wind capture, thus enabling significantly higher energy production. Vestas Rotor Upgrade can boost the annual energy production of a functioning asset by up to 15%\*.

\* depending on wind turbine model, applicable Rotor Upgrade and site-specific conditions.

\*\* exact list of upgrades required varies according to wind turbine platforms and is subject to site-specific assessments.

Certified power curve comparison of V90-2.0MW and V100-2.0MW – excluding optional PowerPlus® upgrades.



## Availability of Vestas Rotor Upgrade

V90-1.8 MW™  
V90-2.0 MW™

Vestas Rotor Upgrade is available as an after-sale solution for the V90-1.8 MW™ and the V90-2.0 MW™ Mk7. Vestas is currently working to offer this solution for additional wind turbine types. The installation work will be subject to Vestas standard terms and conditions, available on request.

## Enhanced power curve

Vestas Rotor Upgrade enables a wind turbine to harvest more energy at a given wind speed. The improved wind capture results in enhanced performance on the slope of the power curve during partial load operations. The nominal power of the turbine is not impacted, meaning that in most cases applicable power purchase agreements are not affected. Based on the wind turbine model, applicable Rotor Upgrade, and site-specific conditions, Vestas Rotor Upgrade can increase energy production of installed turbines by up to 15%.

## Vestas Rotor Upgrade

The process for upgrading a rotor is straightforward and based on a procedure [tested on a prototype in the United States](#). It includes the supply and installation of different components and software modifications which allow the wind turbine to bear the increased size of the rotor. The exact list of required upgrades varies according to the wind turbine platform and is always subject to site-specific feasibility assessments. The most common upgrades include the blades, the blade bearing, the control system, and adjustments to the pitch system and gearbox ratio. Before the Vestas Rotor Upgrade is performed, Vestas carefully analyses the turbine and site conditions through a site-specific load-study, to ensure that both safety and design life are not affected. Vestas commits to support customers throughout the upgrade process.

## Leveraging data to unlock new opportunities

Monitoring more than 40,000 turbines worldwide and depending on market specific conditions, the Vestas Performance and Diagnostic Centre constantly provides insights for maximizing performance at operating wind power plants. Based on this data, Vestas continuously identifies new improvement opportunities for customers. Combining reliable risk mitigation procedures, optimized site-specific technical and environmental assessments, and tested upgrades, Vestas Rotor Upgrade helps customers releasing the full potential of their operating wind turbines.

## For more information

For more information contact your local [Vestas Sales & Service office](#).

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