



Vestas®

Regardless of your
Operations & Maintenance model

We have
**tailor-made
solutions**
for you

Parts and repair services

Wind. It means the world to us.™

A transactional partner with expertise



+ 311 000 spare parts and main components delivered annually



+ 1 200 suppliers with long-lasting partnerships



Dedicated procurement team for addressing the challenges of multibrand platforms



The world's largest 24/7 turbine spare parts shop



Supply chain optimised to service +154 GW



More than 40 years of solid wind engineering experience

Vestas is the preferred choice when it comes to servicing wind turbines. We deliver parts and repair services to a market-leading 1.54 GW of wind turbines, including more than 8 GW of non-Vestas turbines. This means that we are able to leverage economies of scale, optimise supply chains and logistics, and invest in innovation and R&D at an unparalleled scale and pace. This translates into more competitive offers to you.

In case your business needs require a transactional partner, Vestas has the set-up and resources to offer flexible, tailor-made solutions. At Vestas, we have the capability and you have the choice.

Parts and Repair services available for major platforms
Multibrand capabilities proven across a wide range of platforms*

Acciona®	AW70, AW77
DE Wind®	D6, D8
Gamesa®	G47, G5x, G8x, G9x
GE®	GE 1.x, GE 2.x, TW80, TW300, TW600x
Nordex®	N80, N90, N100
Senvion®	MM82, MM92, MM100
Siemens®	SWT 2.3
Suzlon®	S88, S95
Vestas®	All platforms

*Other wind turbine variants by request

Parts services

From over-the-counter spare parts to fixed-fee main component coverage services, we can deliver a spare parts setup tailored to your business needs.

Parts

When it comes to parts supply, Vestas offers a truly global one-stop-shop with more than 311,000 parts delivered annually, and a solid network of over 1,200 suppliers. We offer major & minor components, spare parts and consumables for all major brands including Vestas®, GE®, Siemens®, Gamesa®, Senvion®. You benefit from economies of scale and our unique logistic capabilities. Contact us to discuss your requirements and hear what we can offer you.

Online spare part shopping

Shop.Vestas.com is the largest global webshop for turbine spare parts and consumables, offering you 24/7 access to a continuously growing stock. Currently we offer more than 105,000 wind turbine parts and more than 67 service offerings across various turbine brands.

Active Material Management (AMM)

Inventory carrying cost, including storage and management, can grow to as high as 30%* of inventory purchase cost. AMM, our inventory supply solution, removes this cost from your operations. In working with Vestas global inventory management, you can take advantage of the scale of our global operations and utilise our logistics network. Through smart data capabilities such as predictive ordering, Vestas can significantly reduce your inventory carrying costs while improving parts availability.

Loyalty program

Our program rewards loyalty by offering an optimised spare parts setup that includes improved terms and pricing across your fleet. The program is based on simplicity – the stronger the partnership, the greater the benefits. Contact us today to learn more about the offer.

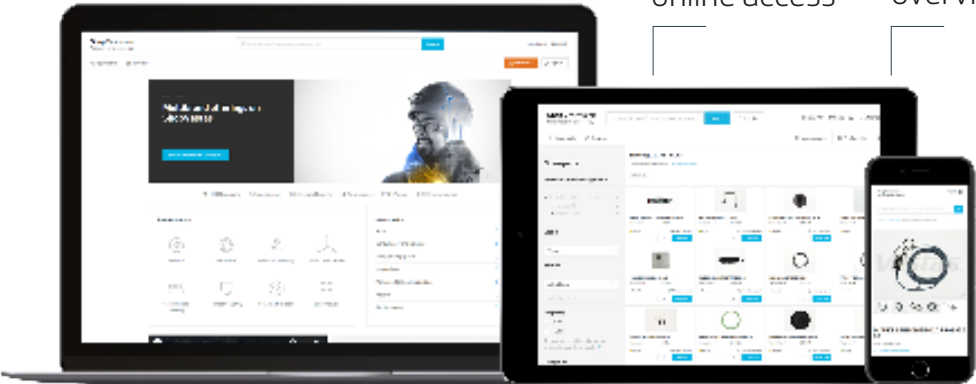
* Depending on individual business activities

+67
service offerings

+105,000
spare parts

24/7
online access

Quotes & orders
overview



Powertrain services

Utilising our global presence and expertise with multiple platforms, we offer high-quality solutions at a competitive price.

Vestas Powertrain Services
optimised to service

+154 GW

Gearbox services

We conduct more than 300 uptower and 400 workshop repairs annually, which enables us to develop highly effective and innovative inspection and repair methods. We currently offer maintenance, repair, update and exchange services for the following gearbox brands: Bosch-Rexroth, Moventas, Winergy, ZF –Hansen and Eickhoff

Prevention

One of Vestas Services' primary strengths is our expertise in performing preventive maintenance. Faults are detected and repaired early, resulting in less complexity and lower cost. We offer the following services: Inspections, monitoring services and a wide variety of hardware solutions.

Uptower Repairs

Onsite repairs can save you crucial time and money. Our offer currently covers the following uptower and onsite gearbox repairs:

- LSS Bearing
- IMS Bearing (RE)
- IMS Bearing (NRE)
- IMS Complete Bearing set

- HSS Bearing (RE)
- HSS Bearing (NRE)
- HSS Complete Bearing Set
- Planet Carrier Bearing
- Helical 3rd Stage
- LS Shaft
- IM Shaft
- HS Shaft

Workshop repair

When a workshop repair is required, your gearbox is transported to one of our industry-leading workshops or approved partner facilities. Vestas workshops carry out more than 400 complex gearbox repairs annually, which puts us in a unique position to find and repair even the most complex problems.

Exchange and repair loops

We have established a unique, cost-saving solution with our global gearbox repair loops. In the program, your defective gearbox can be integrated into our loop for future use. You, in return, receive a state-of-the-art, repaired gearbox. Once you have received your replacement gearbox, you will be invoiced for the repair of the damaged one.

Generators

With more than 400 generator repairs annually, we can offer you state-of-the-art repair and upgrade solutions designed to improve the lifetime of your generator and reduce O&M costs. We currently offer repairs and upgrades for the following generator brands: VND/Weier, Leroy Somer, ABB, Elin, Loher, Siemens, Cantarey, VEM, Winergy, Indar, Hitachi.

Inspections

The structural base of a generator is exposed to significant mechanical loads over its lifetime. A failure of the base can result in significant damage to your turbine, an issue affecting primarily older, welded generator supports. All structural failures begin with a crack. Our inspection technique allows us to detect cracks early and perform cost-effective repairs to ensure the turbine's structural integrity.

Uptower and onsite repairs

Carrying out repairs uptower and onsite is the most cost-efficient renovation method available. That is why Vestas aims to offer as many uptower solutions as possible. Currently we offer uptower repair work for:

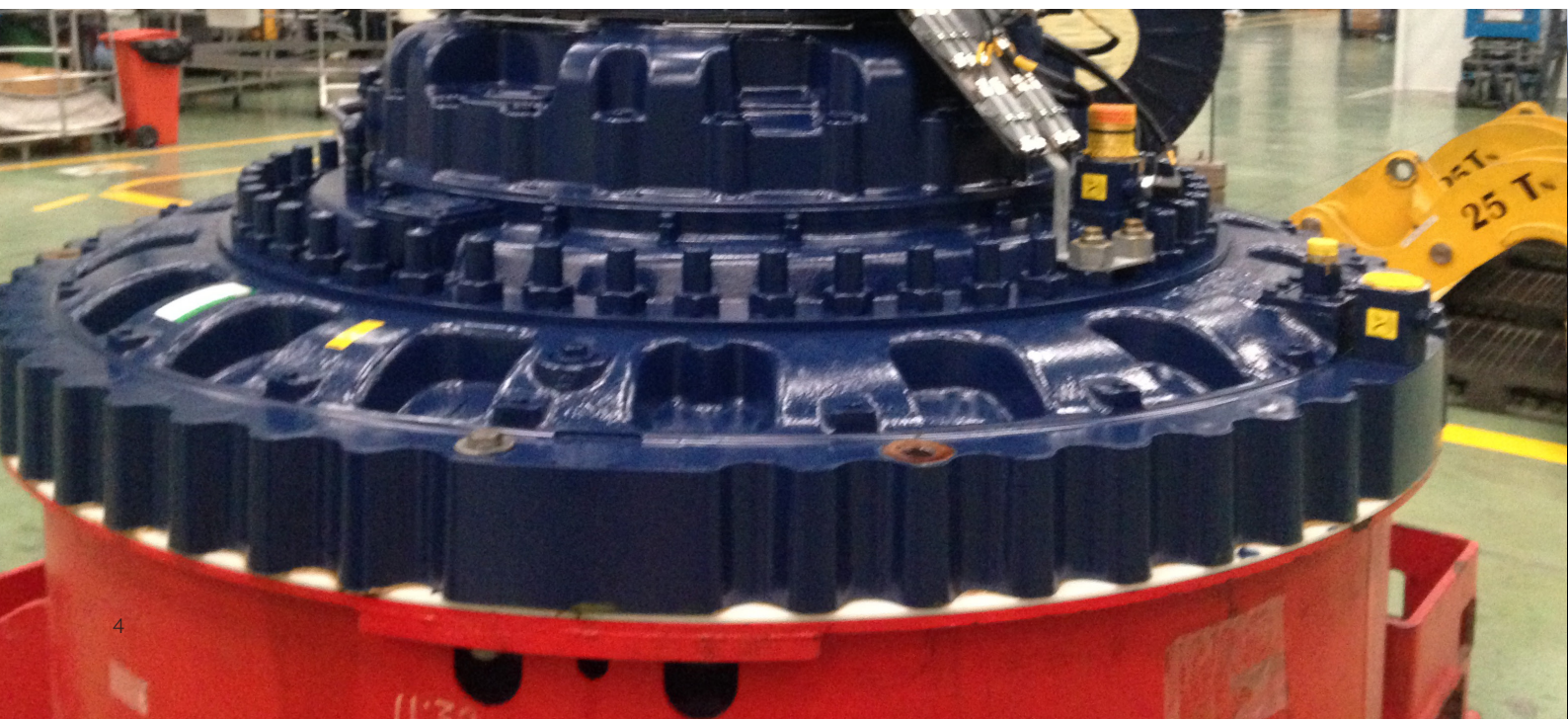
- Bearing Shields exchange

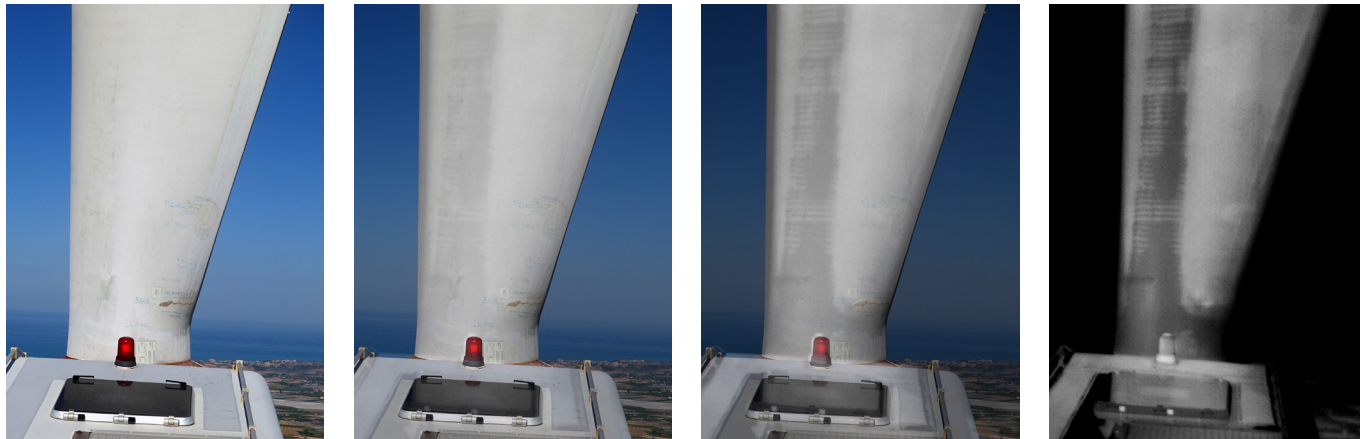
- Replacement of bearing PT 100 sensors
- Bearing journal repair
- Replacement of stator cables
- Replacement of rotor cables
- Replacement of RCC components
- Rebalancing
- Drive Train / Generator Alignment
- High Speed Coupling Replacement
- Slip Ring

Repair loops and workshop repairs

To help you minimise downtime, we offer a unique generator exchange program that uses repair loops from our workshops. To secure a fast return to normal operations, we carry a stock of replacement generators for many of the leading platforms.

If you prefer a 1:1 exchange, we bring your generator to our industry-leading workshop facilities. We then conduct in-depth analysis and troubleshoot the full scope of technical problems, and return the generator to your site.





Blade services

Blades are the most expensive components of your wind turbine. Giving them the attention they deserve can safeguard business continuity and ensure optimum performance.

Blade Inspections

Blade damage is often discovered too late. This results in extensive, costly repairs with the risk of prolonged downtime. Our inspection and analytics methods are backed by the largest data set available globally. This enables us to identify damages at the earliest stage possible, thereby minimising your repair cost and downtime.

Repairs and exchange

We carry out inspections and repairs on most brands and offer complete replacements of all Vestas blades. Our onsite repair solutions can reduce your repair costs by up to 75 percent*.

We offer:

- Cracks, erosion and surface repairs
- Lightning damage repairs
- Blade cleaning services
- Blade tip refurbishment exchange
- Gel coating/painting
- Advanced structural repairs
- Leading edge protection

Wear and tear coverage

Reduce your risk exposure with our flat-fee wear and tear coverage offering, available via a maintenance extension or as an individual agreement. The package includes:

- Wear and tear damage coverage (parts and repair)
- Comprehensive, annual inspections
- Clearly outlined description of damages and classification
- Integrated scheduling of repair activities to minimise turbine downtime

Upgrades

Heavy lightning activity can cause significant losses. Our comprehensive lightning protection can reduce damages by up to 88%, which translates to a 96% reduction in repair costs. At the other end of our offering scale, our aerodynamic upgrades can boost your turbine's production by up to 2%**.

Contact us to learn more about the the full spectrum of our offerings.

Technical & minor corrective services

Engineered part solutions

For aging fleets, a majority of downtime is often the result of minor component failure. For asset owners, older turbines can, therefore, mean technical support availability challenges. Vestas engineered solutions to minor components addresses these issues. Our solutions include controller upgrades, upgraded line and rotor IGBT assemblies, blade bearing grease collection, drip loop cable management, and many others.

Vestas has many additional products and services to offer, contact us for details on the below or any additional requests.

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| • Spare parts framework agreements | • Yaw power back up | • Power uprates |
| • Main components agreements | • Climbing upgrade | • Power factor correction upgrades |
| • Tools rental and purchase | • Rain gutters | • Extended cut out solutions |
| • De-icing systems | • Transformer room climate package | • Performance optimization |
| • Lightning detection system | • Door intrusion alarm | • Turbine life extensions |
| • Lightning current transfer units | • SF6 gas end of lifecycle management | • Turbine software upgrades |
| • Shadow detection system | • Shielding upgrade for rotating parts | • Grid recovery upgrades |
| • Avian / Bat mitigation | • Soft brake add module | • Turbine health check |
| • Obstacle collision avoidance | • Suction fan for generator slip ring | • Mechanical and safety upgrades |
| • Smoke & heat detection system | • Temperature monitoring for generator drive end bearing | • Maintenance packages |
| • Fire extinguisher system | • Waste tray for main bearing | • Weather forecasts |
| • Automatic lubrication solutions | | • Asset management analysis |

* Via early intervention and preventive maintenance

** AEP gain is site specific, dependent on climatic conditions and site specification.

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