



Brochure

Services for wind power generators

With expertise,
and a comprehensive
portfolio of products
and life-cycle services,
we help value-minded
industrial customers
improve their energy
efficiency and productivity.



Preventive and predictive maintenance

Over the last 30 years ABB has delivered more than 30 000 wind power generators to customers all over the world.

Designed and built for superior performance in tough conditions, these generators are supported by a complete portfolio of services to help maintain reliable operation, minimize turbine downtime and ensure continuous and optimized kWh production.

Most generator breakdowns can be avoided by preventive and predictive maintenance.

ABB's detailed preventive maintenance program is described in the generator's user manual. If you did not receive your own copy from the turbine manufacturer, please contact your local ABB service center to request one.

The optimal predictive maintenance solution for all wind power generators is ABB MACHsense-R. This service continuously monitors and immediately analyzes key parameters related to the condition of the generator. Incorporating special analysis techniques developed by ABB, it delivers early warnings of

any issues that might be developing while avoiding the false alarms that are a common problem with other, less advanced solutions. In addition to ABB products, ABB MACHsense-R can be used with all other brands of generator.

By using ABB MACHsense-R to predict generator failure, wind farm owners can avoid breakdowns and therefore move from expensive unplanned maintenance to planned maintenance. In a large farm, several units which are diagnosed to be at the end of their life can be replaced at the same time. To further save costs, the exchange can be planned for the optimal time to avoid production losses.

Recommended spare parts

We help to keep your wind turbines operating by offering spare parts and capital spares for ABB generators. To minimize unnecessary downtime in case of a minor component failure, we have drawn up lists of recommended spare parts to be purchased and stored on site. These spares represent a small but very worthwhile investment.

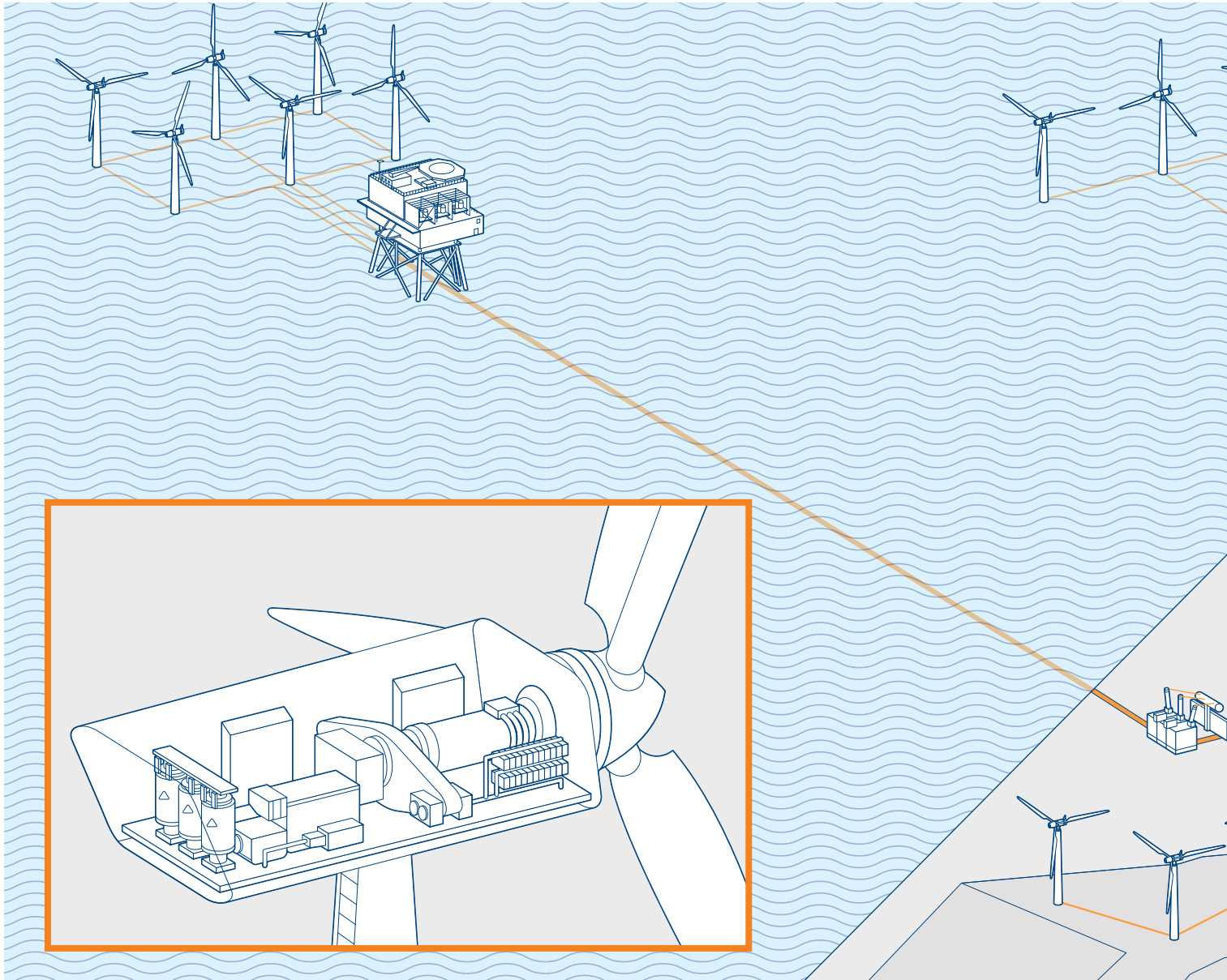
Examples

Wearing parts to be installed based on inspection	Typical exchange interval
Grounding brush	6-24 months
Brushes for SRU	6-24 months
Bearing for DE and NDE	5-10 years
Blower motor	10-20 years
Bushing/support insulators	Can often be damaged during other site work

Individual spare parts for all types of ABB wind power generators are available from ABB local service centers.

Recommended spare parts for 10 generators	Recommended spare parts for 50 generators
Bearing for DE and NDE	2 sets of recommended spares for 10 generators
Temperature detectors	Bearing part sets for DE and NDE
PT-100 retrofit kit for stator winding kit	Blower motor
Brush holders (for DF generators)	Space heater
Carbon brush set (for DF generators)	Grounding slip ring
Brush wear indicator (for DF generators)	Grounding brush holder device
Tachometer (if installed)	Slip ring unit
	Axial fan for slip ring
	Tachometer accessories (if installed)
	End shields
	Auxiliary terminal box
	External blower unit
	Frame and cover of terminal box

Replacement generators

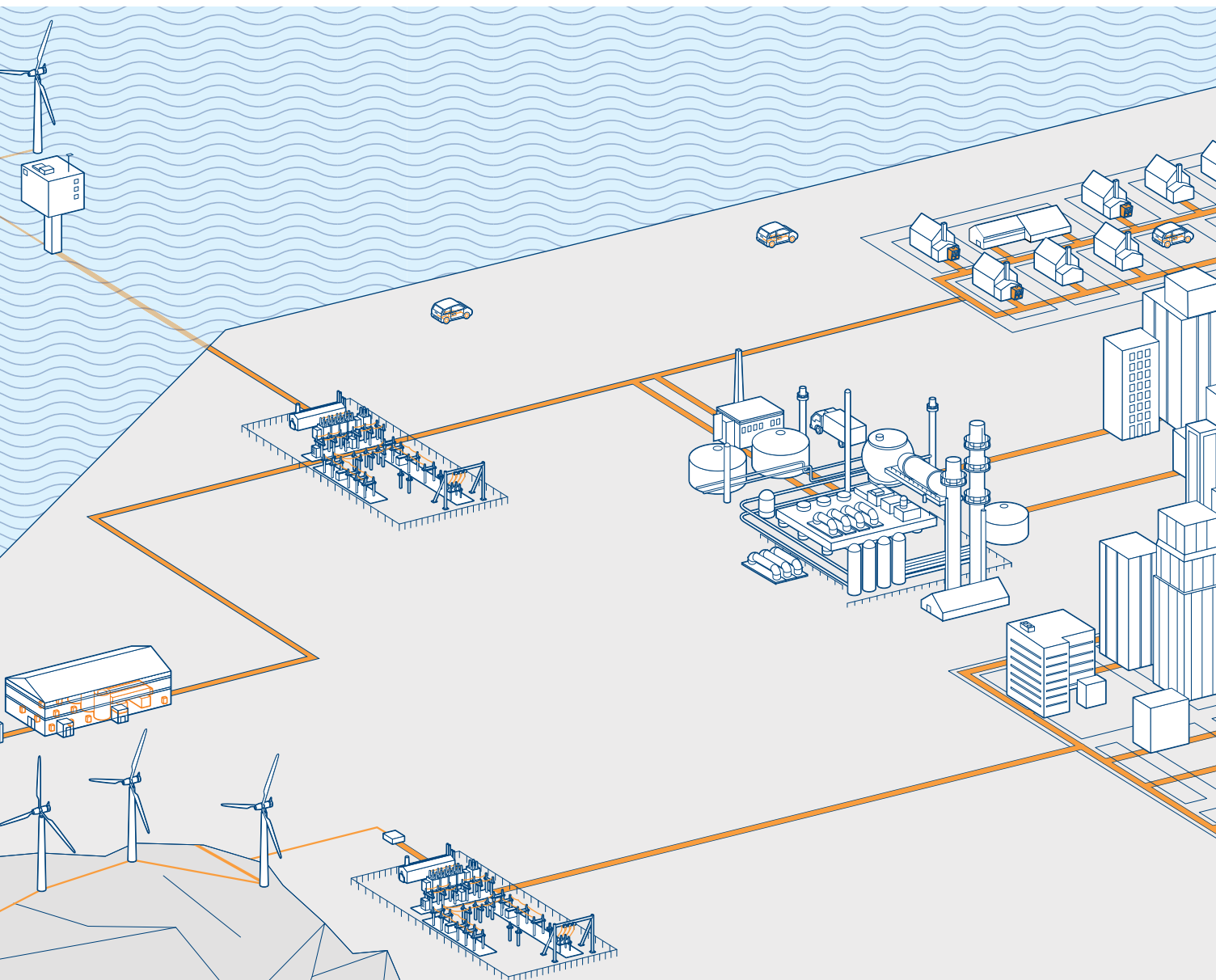


If a generator suffers major damage, a replacement will be needed. In order to minimize downtime and production losses, we recommend that customers with larger fleets should keep replacement generators in store. Typically, if you have 15-20 identical generators, it pays to invest in a replacement generator and store it on site; if your fleet is larger than 50 identical units, it is worthwhile keeping two replacement generators on site.

To ensure availability, most wind turbine manufacturers source important components like generators from a number of vendors. ABB generators are built to customer specifications and are fully interchangeable with the original units – no matter whether the original was from ABB or another vendor.

Reliable ABB replacement generators boost the overall performance of the turbine and ensure continuous power production with the highest efficiency. In order to ensure rapid replacement, we keep generators in store for several large fleets.

Replacement generator storage



There are many benefits for wind farm owners and operators in having a replacement generator rapidly available if major generator damage occurs. Ordering a replacement unit from the factory will typically mean downtime of up to 25 weeks. Such a long period of downtime will naturally cause huge production losses.

To help our customers overcome this problem, we have established two storage facilities for rapid generator replacement.

If you provide a damaged ABB generator in exchange and it is repairable, we will adjust the pricing of the replacement unit accordingly. We repair and refurbish the damaged generators to as-new condition and place them in storage.

Wind farms that use our replacement storage facility have generators available for rapid replacement if a production unit gets damaged. This cuts downtime and reduces production losses. The value of lost production for a 3.6 MW turbine, for example, is typically more than 10,000 euros per week.

Replacement generator storage

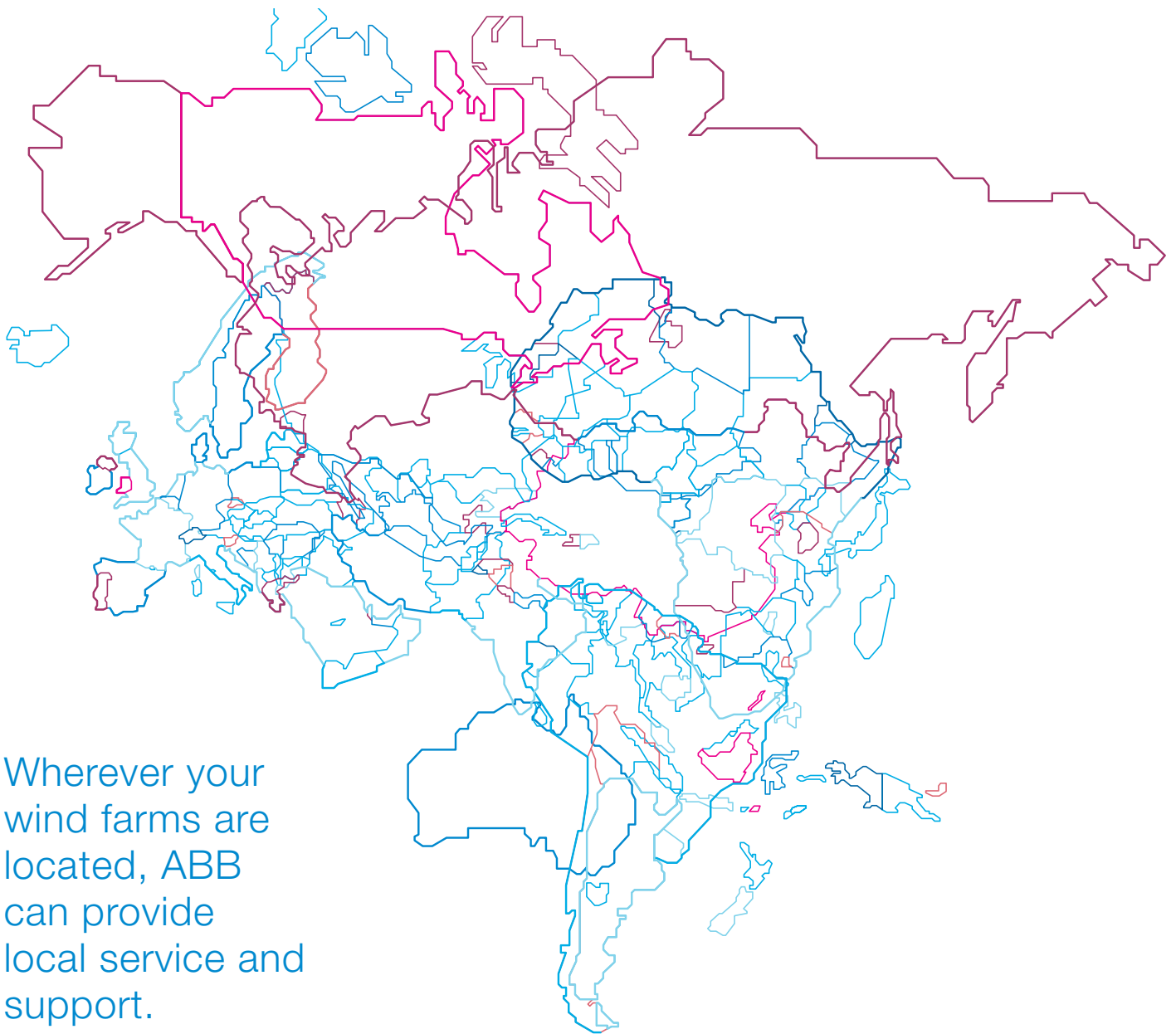
We offer the following wind power generators from two central storage facilities. Our facility in Denmark stocks 50 Hz generators, and our US facility stocks 60 Hz generators. These generators can be either new or refurbished.

We cannot guarantee availability of all generator models at every point in time. Please ask your local ABB representative about availability of the generator type you need.

Turbine manufacturer	Turbine type	kW	50 Hz	60 Hz
Bonus Siemens Navantia	B62/1300 SWT-1.3-62 Izar 55/130	1300 / 250	x	
Bonus Siemens	B82/2300 VS SWT-2.3-82 VS SWT-2.3-93 VS SWT-2.3-101 VS	2300	x	x
Bonus Siemens	B82/2300 SWT-2.3-82	2300 / 400	x	
Siemens	SWT-3.6-107 SWT-3.6-120	3600 3800	x	
Gamesa	G80, G83, G87, G90	1800 2050	x	x
GE	1,5	1500 / 1600		x
Vestas	V52	850 1750	x	
Vestas	V66, V80, V90	1800 2000	x	x
Vestas	V42, V44, V47	600 660	x	

Repair workshops

ABB has repair workshops in all parts of the world, with local service centers in all major wind power countries. ABB workshops can perform a wide range of repair services for ABB and many other brands of wind power generators.



Wherever your wind farms are located, ABB can provide local service and support.

Contact us

www.abb.com/motors&generators

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB Ltd does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained herein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in part – is forbidden without prior written consent of ABB Ltd.

Copyright© 2015 ABB

All rights reserved



Motors and generators

9AKK105838 EN 02-2015