




Vestas[®]

Building on +60 GW of **experience**

Track record as of 31 December 2013



Wind. It means the world to us.[™]

Can data and analysis make a difference on **turbine performance?**

Proven technology. For Vestas, it is more than a saying – it is something we live by.

With more than 30 years in the wind industry, Vestas has more experience than anyone else in making wind work for our customers. We also take advantage of an unmatched track record: Together with our customers, Vestas has installed more than 60 GW of wind power capacity in 73 countries.

Every day, Vestas leverages this vast global experience to continuously improve the performance of our customers' wind power plants. We do this through the constant monitoring and performance diagnostics of the world's largest fleet of wind turbines.

The constant stream of data from more than 25,000 wind turbines enables Vestas to meticulously plan and carry out service inspections, thereby reducing wind turbine down-time to an absolute minimum. The data is monitored across more than 500 signals including temperature, pressure and log data. Combined with information from service visits, the comprehensive data creates a complete picture of turbine health.

The ongoing monitoring enables Vestas to optimise the performance of our customers' wind power plants on a number of parameters:

- it ensures that our accelerated lifetime simulations on key components are as realistic as possible
- it ensures that the areas critical to the performance of the turbine are thoroughly managed throughout manufacturing
- it optimises turbine performance in micro-siting and site layouts
- it enables us to accurately forecast and model operational expenditures, annual energy production and the overall business case
- through ongoing condition monitoring, it allows us to implement predictive maintenance, thereby minimising lost production.



Track record by turbine type*

Our +60 GW of installed capacity is the backbone of Vestas' unrivalled experience and expertise. When combined with one of the industry's largest testing facilities comprising of 50 test rigs and 150 engineers who are committed to continuously improving the quality of our products even further, Vestas can truly offer our customers proven technology.

We have the data to back the claim: In 2013, the Lost Production Factor – the share of available wind not harvested by Vestas wind turbines – fell to 1.7 per cent across the Vestas fleet under full scope service. Meanwhile, the consumption of warranty provisions in relation to revenue was the lowest ever. This is what we mean by proven technology. For our customers, it means business case certainty.

Turbine type	Quantity	Total MW
Other	34,075	22,982
V80-1.8 MW [®]	1,016	1,829
V80-2.0 MW [®]	3,356	6,712
V90-1.8 MW [®]	1,472	2,649
V90-2.0 MW [®]	5,510	10,990
V90-3.0 MW [®]	2,901	8,669
V100-1.8 MW [®]	1,398	2,525
V100-2.0 MW [®]	358	714
V100-2.6 MW [®]	85	221
V110-2.0 MW [®]	3	6
V112-3.0 MW [®]	937	2,816
V112-3.3 MW [™]	28	92
V117-3.3 MW [™]	5	17
V126-3.3 MW [™]	3	10

Total	51,147	60,232
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* Delivered Vestas wind turbines as of 31 December 2013.

Track record by **country***

Country	Quantity	Total MW	LI**
Argentina	62	89	2012
Aruba	10	30	2009
Australia	861	1,849	2013
Austria	268	482	2013
Azerbaijan	2	2	2009
Belgium	185	445	2013
Brazil	325	626	2013
Bulgaria	126	323	2013
Canada	1,608	2,736	2013
Cape Verde	39	28	2012
Caribbean Islands	2	0	1991
Chile	158	304	2013
China	3,450	4,312	2013
Costa Rica	71	51	2002
Croatia	21	48	2008
Cuba	4	4	2005
Cyprus	47	93	2012
Czech Republic	55	86	2013
Denmark	5,094	3,014	2013
Dominican Republic	14	25	2011
Egypt	124	79	2004
Finland	65	100	2013
France	926	1,817	2013
Germany	6,547	9,002	2013
Greece	777	1,063	2011
Hungary	49	105	2010
India	4,481	2,879	2013
Iran	37	16	2004
Israel	3	0	1993
Italy	2,624	3,315	2013
Jamaica	33	39	2010
Japan	379	510	2008
Jordan	5	1	1996
Kenya	6	5	2009
Latvia	1	1	2002
Lithuania	6	18	2007
Luxembourg	13	9	1999
Malaysia	1	0	1995
Mauritius	1	0	1986

Country	Quantity	Total MW	LI**
Mexico	130	236	2013
Morocco	84	50	2000
Netherlands	1,334	1,611	2012
Netherlands Antilles	10	30	2012
New Caledonia	20	5	1999
New Zealand	231	346	2011
Nicaragua	44	80	2012
North Korea	2	0	1986
Norway	45	70	2012
Pakistan	28	50	2012
Peru	1	0	1995
Philippines	20	33	2008
Poland	523	1,071	2013
Portugal	374	677	2013
Puerto Rico	13	23	2012
Republic of Ireland	603	658	2013
Romania	359	868	2013
Russia	3	1	1998
Slovakia	4	3	2003
South Africa	39	69	2013
South Korea	104	166	2008
Spain	2,918	4,039	2012
Sri Lanka	5	3	1999
Sweden	1,471	2,186	2013
Switzerland	22	36	2013
Taiwan	50	86	2008
Thailand	1	0	1996
Turkey	255	640	2013
USA	12,444	11,084	2013
Ukraine	65	195	2013
United Arab Emirates	1	1	2004
United Kingdom	1,430	2,336	2013
Uruguay	31	67	2012
Vietnam	3	6	2011
Total	51,147	60,232	

* Delivered Vestas wind turbines as of 31 December 2013.

** Latest installation.



Experienced worldwide.

With installed turbines in 73 countries around the world, we have considerable experience in all the key disciplines – engineering, transportation, construction and operations & maintenance. Our projects have covered every kind of site, from high altitude to extreme weather conditions, onshore and offshore. This expertise has enabled us to build more than 130 turnkey projects in 16 countries with a combined capacity of almost two GW in less than five years.



In 2013, Vestas committed to a joint venture (JV) with Mitsubishi Heavy Industries Ltd. (MHI), dedicated to offshore wind power. The JV will combine Vestas' technological capabilities and long-standing track record with MHI's strong presence in global power markets and related technologies.

Based on Vestas' V164-8.0 MW turbine, the partnership between Vestas and MHI will consolidate the offshore businesses for both companies and will be the vehicle to win an expanding share of the global offshore market.

In 2013, Vestas had an offshore order intake of 179 MW, and delivered 168 MW, while the offshore order backlog amounted to 494 MW as of 31 December 2013.

Offshore track record by **country***

Country	Quantity	Total MW
Belgium	95	285
Denmark	102	197
Japan	2	1
Netherlands	128	247
Portugal	1	2
Sweden	27	61
United Kingdom	282	784
Total	637	1,577

* Delivered Vestas wind turbines as of 31 December 2013.

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