



Gamesa
corporate and product presentation

November 2010

Gamesa Profile

Worldwide presence



Gamesa Profile

Key facts

- o Team of 6,360 people in 16 countries spread over 4 continents.
- o Solid results in a challenging market. Financing needs secured until 2012.



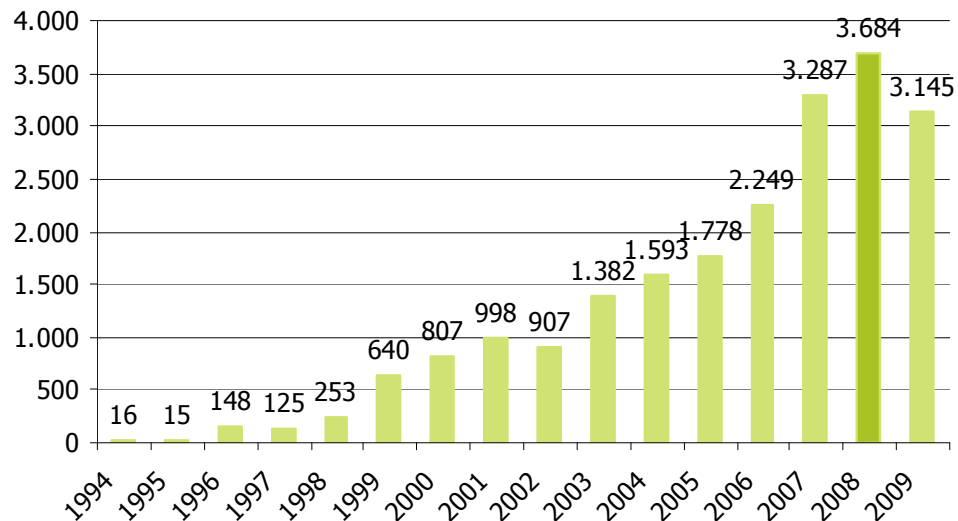
	2008	2009
Sales	3,834	3,229
WTG	3,651	3,113
Wind farm	424	563
Adjustments	-241	-447
EBIT	233	177
WTG	210	225
EBIT Margin	5.80%	7.20%
Wind farm	28	-41
Adjustments	-5	-7
Net profit before capital gains	177	115
Net profit	320	115
NFD	74	259
NFD/EBITDA	0,1x	0,7x
WTG	-140	72
Wind farm	214	187

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Leadership

MW sold

21.028 MW



- o 3,145 MW sold in 2009.
- o # 4 worldwide supplier with an accumulated market share of 12% in 2009(*).
- o Continuous leadership position in Spain with an accumulated market share of 47,34% (**).
- o 5,591 employees as of 31/12/09(***)

* Source: BTW/MWU 2008

** Source: AEE Enero 2010

*** WTG Manufacturing Division

Leadership position in the main global wind energy markets

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R&D quick facts

- o 7 R&D centers in Spain, Denmark, US and China.
- o 2 Centers located in Navarra (Spain), one for the assembly of nacelle prototypes and another one for the manufacturing of G10X blades..
- o Over €200 million over the past 5 years.
- o 150 accumulated patent families submitted at 2009 closing.
- o #345 out of 1,000 European companies with highest R&D investment according to the "EU Industrial R&D Investment Scoreboard" report of 2009.
- o #26 out of a total of 78 companies in the "Industrial Machinery" sector.
- o Gamesa leads and participates in Spanish and European projects in the forefront of Wind Energy R&D:






- **Windlider 2015:** with the aim of controlling the design of large wind turbine generators.
- **Reliawind:** with the aim of developing next-generation WTGs, achieving greater efficiency and reducing maintenance costs.
- **Upwind:** a research project on future wind generation and the design of very large wind generators (8 – 10 MW).

Strong focus on investing in R&D

Gamesa product portfolio

PLATFORMS

	PLATFORM	RATED POWER	MODELS	CHARACTERISTICS
	G5X-850 kW	0,85 MW	G52, G58	Experience and performance
	G9X-2.0 MW	2 MW	G80, G87, G90, G97	Versatility and production
	G10X	4,5 MW	G128, G136	Minimal CoE and logistic complexity of 2MW model

**Modular production strategy of components by platform
which allows for greater flexibility and versatility**

Gamesa product portfolio (II)

Turbine models

MODELS AND OPTIONS

	MODEL	IEC ⁽²⁾	RATED POWER	TOWER HEIGHTS	GRID CODE	AMBIENT OPTIONS ⁽¹⁾	50/60 HZ
Gamesa G5X-850 kW	G52	IA	0,85 MW	44,55,65	✓	✓	✓
	G58	IIA/IIIB	0,85 MW	44,55,65,74	✓	✓	✓
Gamesa G9X-2.0 MW	G80	IA, S	2 MW	60,67,78,100	✓	✓	✓
	G87	IIA	2 MW	67,78,100	✓	✓	✓
	G90	IIA, IIIA	2 MW	67,78,100	✓	✓	✓
	G97	IIIA	2 MW	78,90,11X	✓	✓	✓
Gamesa G10X-4.5 MW	G128	IIA	4,5 MW	120	✓	✓	✓
	G136	IIIA	4,5 MW	120	✓	✓	✓

(1) Different versions and optional kits to adapt the wind turbine to High or Low Temperatures and environments with a high level of salt or dust.

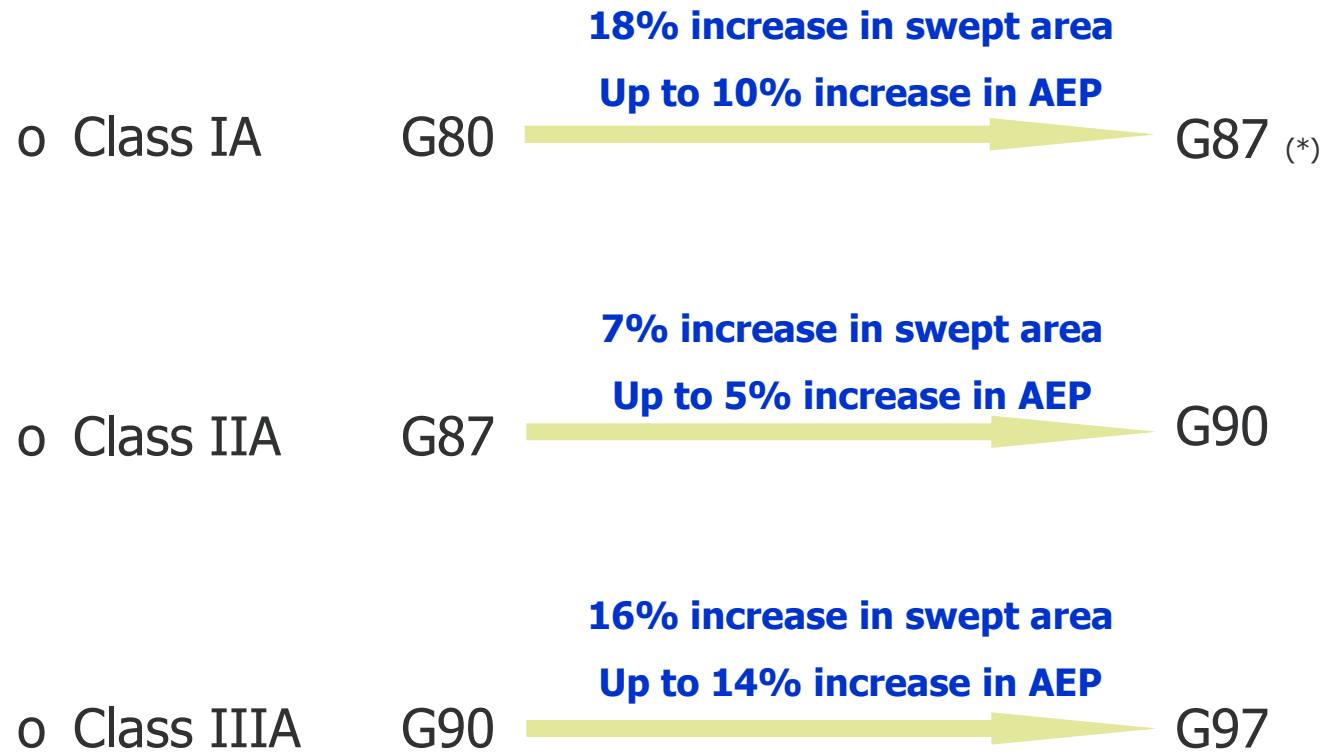
(2) Available depending on the site.

03/12/2010



Gamesa G9X latest releases

New turbine models



(*) Class S



New G97-2.0 MW IIIA

New features



- ✓ Class IIIA Optimized design (low and medium winds)
- ✓ Aerodynamic advanced design for highest efficiency & lowest noise
- ✓ 105,8 dB(A) at full power
- ✓ Low wind tip speed through higher gearbox ratio
- ✓ 78m & 90m tower height optimized tubular steel towers & 11X tower under study
- ✓ Safe Mode for AEP maximization at IIIA sites without penalizing loads

G10x Product characteristics

Tower heights

- o 120m. Class IEC IIA & IIIA
- o Other heights still to be defined.

Noise

- o Standard level: 106,4 dB(A).
- o Other noise levels: 107,5 - 104,5 – 102,5 – 101,6 dB(A)

Temperature range


- o Standard version: -20°C, +40°C.
- o Low temperature version: -30°C, +40°C.

Electrical features

- o Fulfilling of the most demanding grid codes requirements.
- o Power factor: 0.9 inductive to 0.9 capacitive.



G10x New developments (1/2)

TECHNOLOGY		FEATURES
Gamesa MultiSmart®		New multivariable control system that minimizes blade vibration and reduces blade loads up to 30%. This control system incorporates the most advanced technologies oriented to noise reduction, based on aerodynamic, control and efficiency optimization.
Gamesa Innoblade®		Sectional blade that allows same accessibility and to use same transport equipment as per current 2 MW machines.
Gamesa CompacTrain®		Two-stage planetary integrated gearbox with two bearing design. Use of less parts, avoidance of high speed bearings and cost reduction is achieved with this compact design. Preloaded bearing housing allowing loads reduction
Gamesa ConcreTower®		Hybrid tower (concrete + metallic structure) to achieve the lowest cost at important heights.
Gamesa GridMate®		Permanent Magnet generator and Full Converter technology fulfilling the most demanding grid codes. Thanks to its modular design, the system keep running although any of their modules fails increasing system availability
Gamesa FlexiFit®		Add-on crane for minimizing the use of big cranes and for easy assembly and disassembly.

G10x New developments (2/2)

InnoBlade®	New Profiles developed by Gamesa
ConcreTower®	Lower costs for higher towers
CompacTrain®	Reduces mechanical stress and increases availability
MultiSmart®	Multivariable control that maximizes energy and reduces loads



Lower CoE

InnoBlade®	Sectional blades with longer module <35m in G128
FlexiFit®	Self-mounting add-on crane able to mount main modules
G10X	Weight of G10X's module will not exceed G8X nacelle weight



Transport and installation similar to G8X

GridMate®	Full converter that complies with any grid code
InnoBlade®	New profiles that reduce aerodynamic noise
MultiSmart®	Control system that incorporates noise reduction technologies



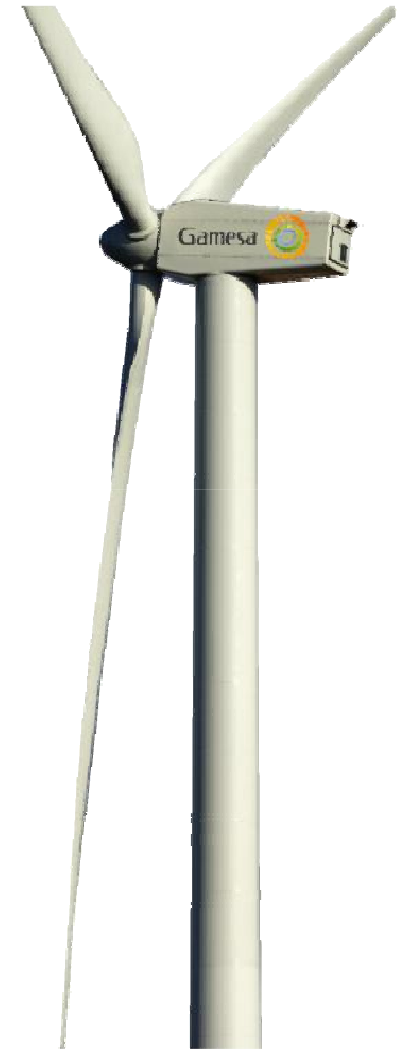
Grid code and noise regulations fulfillment

Operating and Maintenance Services

- **Duration up to 12 years**
- **Availability warranty up to 97% with option up to 99% Available in 2011**
- **Operation & monitoring 24x7**
- **Predictive, preventing & corrective maintenance**
- **Maintenance of electrical infrastructure**
- **Replacement parts and consumables**
- **Reporting**
- **Civil responsibility insurance**
- **Breakdown machine insurance including external causes**
- **Loss of profits insurance**

Construction and financial support

- **ECA Export Credit Agency (SESCE)**
- **European Investment Bank (EIB)**
- **Project finance**
- **Equity investing**
- **EPC / turn key solutions**





Thank you for your attention



Q&A



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