



**Vestas**<sup>®</sup>



**Wind.** It means the world to us.<sup>™</sup>

**Wind.** It means the world to us.<sup>™</sup>

**The Impact on the current situation on a turbine manufacturer**

EWEA workshop Wind Energy in Bulgaria: Getting back on track  
Sofia, 20.11.2012

# About Vestas



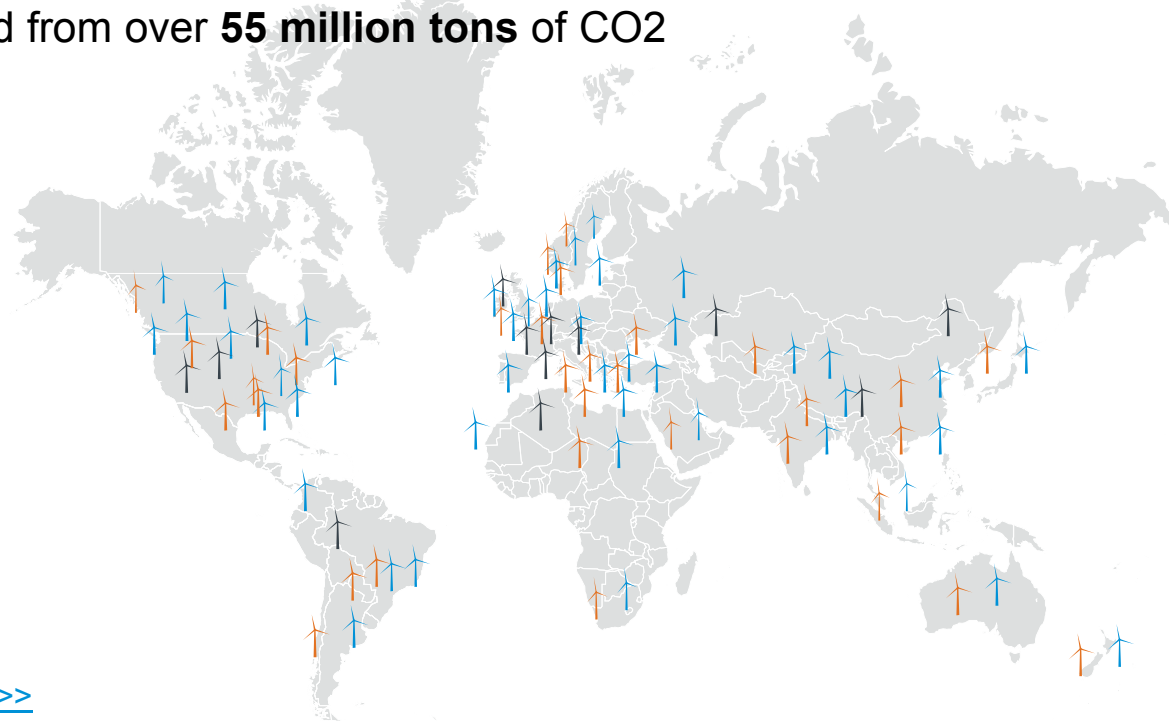
# About Vestas

## Vestas at a glance

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Today, we have installed over **47,000** turbines in **70** countries across **six continents**. More than **51 GW** of installed capacity (about 20% of the global fleet).

That means installing a turbine every 3 hours and saving the world from over **55 million tons** of CO2 every year.



[Vestas' track record >>](#)





# Value drivers

# Value drivers

## Stakeholders concerns and Vestas response

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### People

Concern about the industry's ability to attract and train talent to meet future demand. Need to invest in research and development and share knowledge as the industry develops globally.



### Technological Quality

Need to ensure quality and reliability of products, improve predictability of output and increase capacity; improve grid infrastructure and energy storage.



### Political Support

Demonstrating the value of wind power compared other sources of energy, lobbying support from politicians, changing restrictive legislations and educating legislators about the industry.



### Project Financing

Concern about financing wind energy projects, especially in current economic climate. Also concerns around the financial security of investments and pricing consistency and fairness.



### Community Relations

Need to obtain social acceptance in spite of local opposition (i.e. perceptions that turbines are noisy, eye sore, etc.) and need to defend wind as a powerful source of energy.



People – our most valuable asset



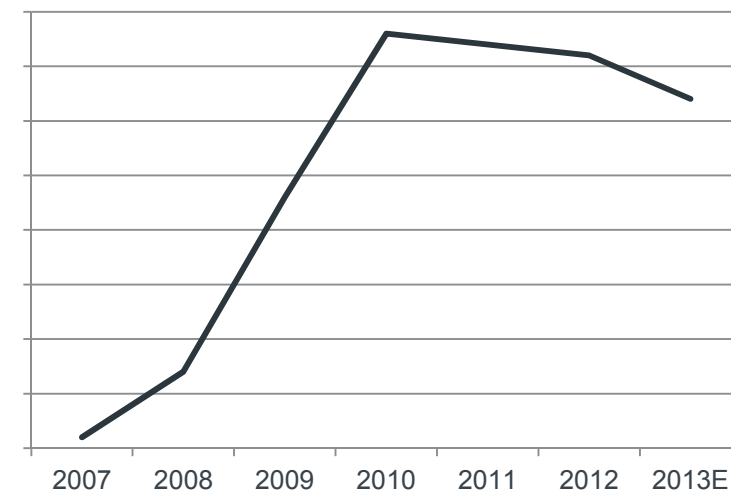
# People dimension



- We are in Bulgaria since 2007. At present Vestas employs here about 45 permanent positions in 3 geographical locations. Our employees are:
  - 98% of Bulgarian nationality
  - highly qualified engineers and economists (more than 93% have master degree)
  - very skilled and experienced
  - trained in class and on the field
  - highly motivated
- Our aim is to build scalable and flexible organization and to retain the functionality of the company by:
  - Cost reductions through downsizing of facilities and outsourcing of non-core activities.
  - Geographical reallocation and resource sharing of the Bulgarian personnel. Utilizing the local resources as a best fit solution for new emerging markets.



Headcount

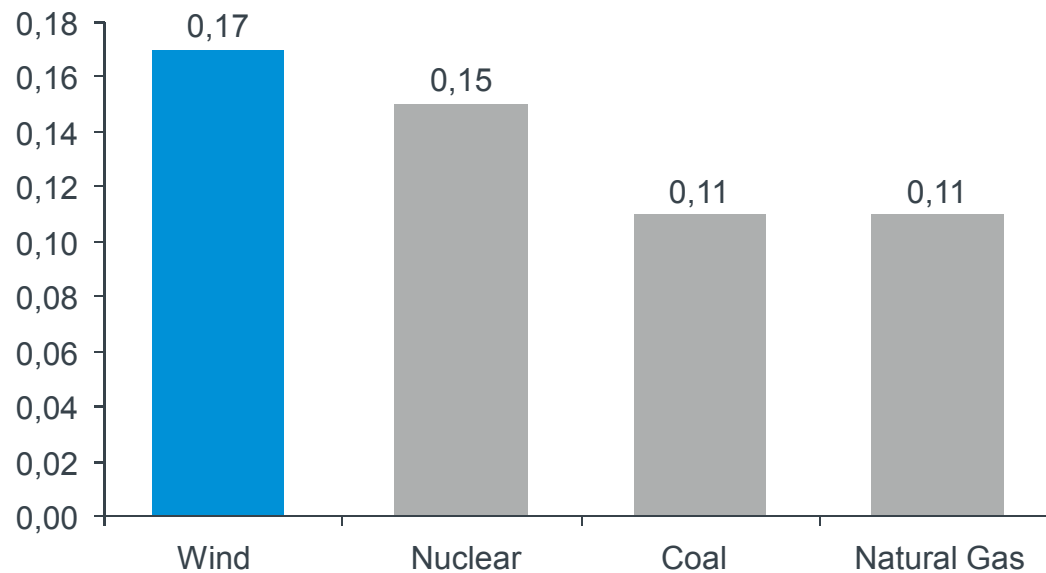


# Green jobs

## Wind: energy independence and local jobs

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Average employment for wind and non-renewable energy technologies, normalized to the amount of energy produced:









Being more labour- and less fuel-intensive, **one GWh of wind power** production leads to **higher employment** than conventional forms of energy.

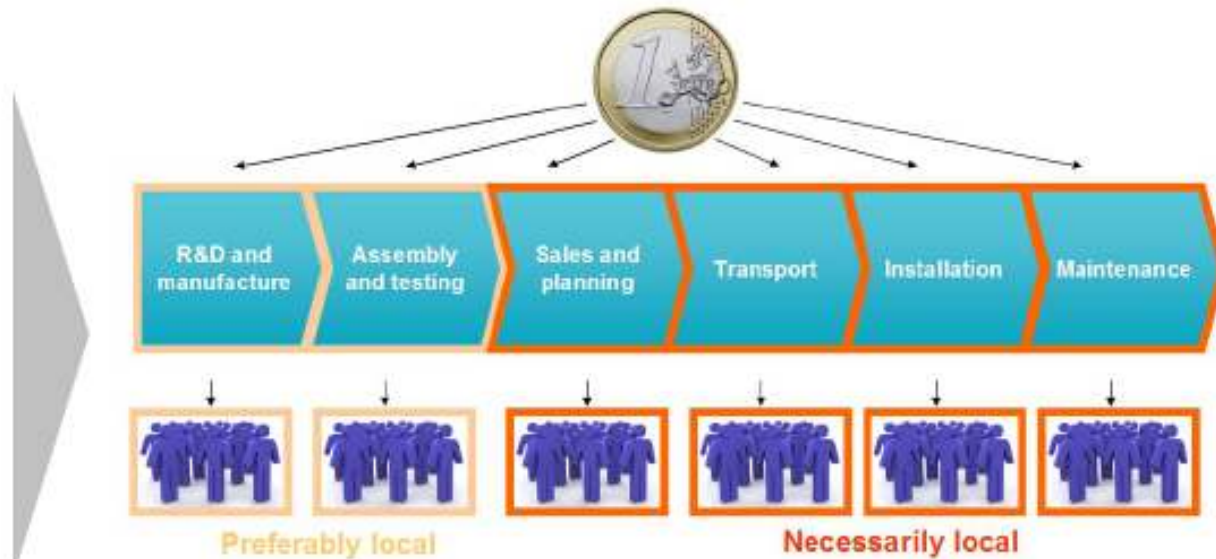
Sources: Kammen/Engel 2009, FPL Energy 2008, IEA 2008, EWEA 2009

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# Jobs Created by Wind Energy Deployment

	65,9 GW installed 154,000 jobs created
	22,3 GW installed 80,000 jobs created
	14,7 GW installed 31,500 jobs created
	3,1 GW installed 21,600 jobs created
	25 GW installed 85,000 jobs created
	12,2 GW installed 40,000 jobs created



...green and local jobs

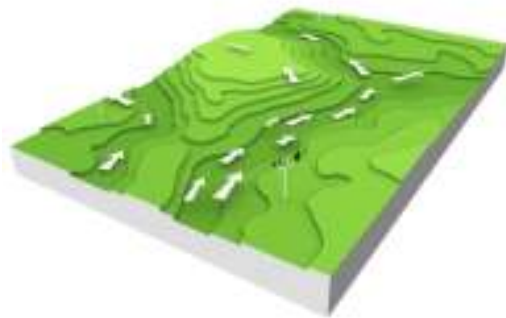
# Technological Quality





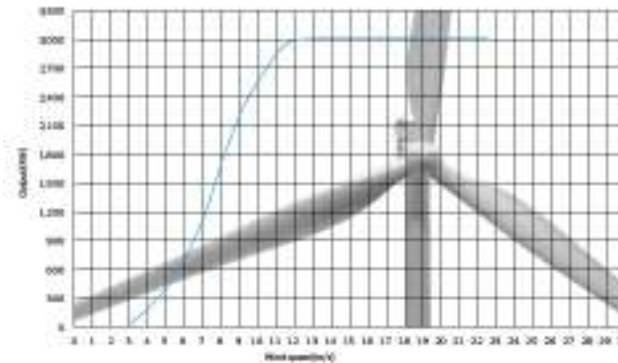
# The technology dimension - Low Cost of Energy and high Business Case Certainty

Wind conditions – Power curve – Availability



**Vestas' site and layout optimization capabilities**

SiteHunt®  
SiteDesign®  
Electrical PreDesign



**Optimal power curve for low wind**

Higher Hub Height  
Larger rotor diameter  
Site specific product adaptations



**Technical and Energy availability guarantee with 10-15 year AOM 4000/5000**

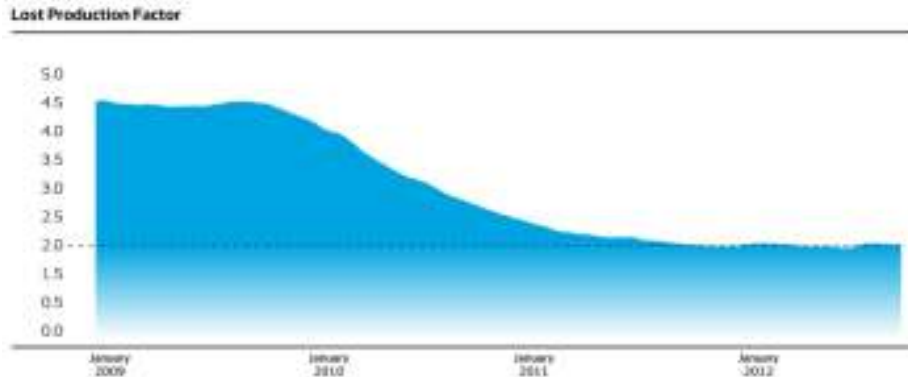
**Maximum production and minimum risk on low wind sites**

# Lower Cost of Energy and high Business Case Certainty

- Lowering the Cost of Energy:

Our new **V126-3MW** delivers up to **20% increased AEP** compare to V112 on low wind sites.

- Ensuring **predictable performance** and business case certainty. LPF of near 2%.



- **Fast ramp up** of the projects, thanks to Vestas flexible production capacity, wide pipeline and local resources. **EPC** scope.





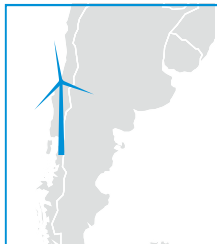
A blurred photograph of a person walking through a control room. The room is filled with computer workstations, each with multiple monitors. The person is in motion, creating a sense of activity. The monitors display various data visualizations, including line graphs and bar charts. The overall atmosphere is professional and data-driven.

# Project financing

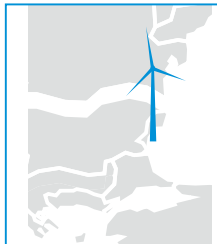
# Vestas' support to wind financiers

## Fast track to Danish Export Credit Agency EKF

- In Offshore and emerging markets, EKF provides cover against commercial and political risks. EKF support brings additional debt capacity.
- In emerging markets, World Bank private sector arm IFC mobilizes private financing through co-financing, syndicates etc.
- Multilateral finance organizations such as EIB, ADB and others co-lend directly, support with guarantees and act as moderators between financiers, project developers, owners and local Governments when establishing business in developing markets



- Project [Totral](#): 23 x V-90 2.0 MWs 2008-2009
- First project-financed wind park in Chile
- 30.75 mn € IFC project-financing + 30.75 mn syndicate
- Private sponsors: DnB NOR, Statkraft Norfund Power Invest



- Project [Kavarna](#): 52 x V-90 3.0 MWs
- First large wind park in Bulgaria
- 40 mn € IFC A-loan + approx. similar sized B-loan
- Private sponsors: AES GeoEnergy (89%) + GeoPower OOD (11%)





The background of the image is a close-up photograph of parched, cracked earth. The cracks form a complex, irregular pattern of polygonal shapes, creating a textured, brownish-grey surface. The lighting is somewhat uneven, with darker shadows in the crevices and lighter tones on the raised surfaces of the cracks.

**Political  
support**



# Political support



## Political Support

Demonstrating the value of wind power compared other sources of energy, lobbying support from politicians, changing restrictive legislations and educating legislators about the industry.

- At Vestas, we try to work closely with political stakeholders to drive the market for clean, renewable energy.
- We support the development of political and regulatory framework, which provide business case certainty and encourage project opportunities for wind generation.
- Sharing expertise and best practices on Bilateral sessions, Committee meetings and Conferences
- Participation in industry associations



# Community relations

Let us look in the future with **optimism**. As one of the major stakeholders of the wind community in Bulgaria, Vestas is promoting the wind energy and its benefits to the Society (global wind day, RES exhibitions, press conferences, etc...).

We believe in wind!



The Vestas logo is displayed in white, italicized font against a blue sky background with wispy clouds. The logo consists of the word "Vestas" followed by a registered trademark symbol (®).

**Wind.** It means the world to us.™

# Thank you for your attention

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