

UNEP / OeKB workshop on the Environment

Vestas Wind Systems A/S
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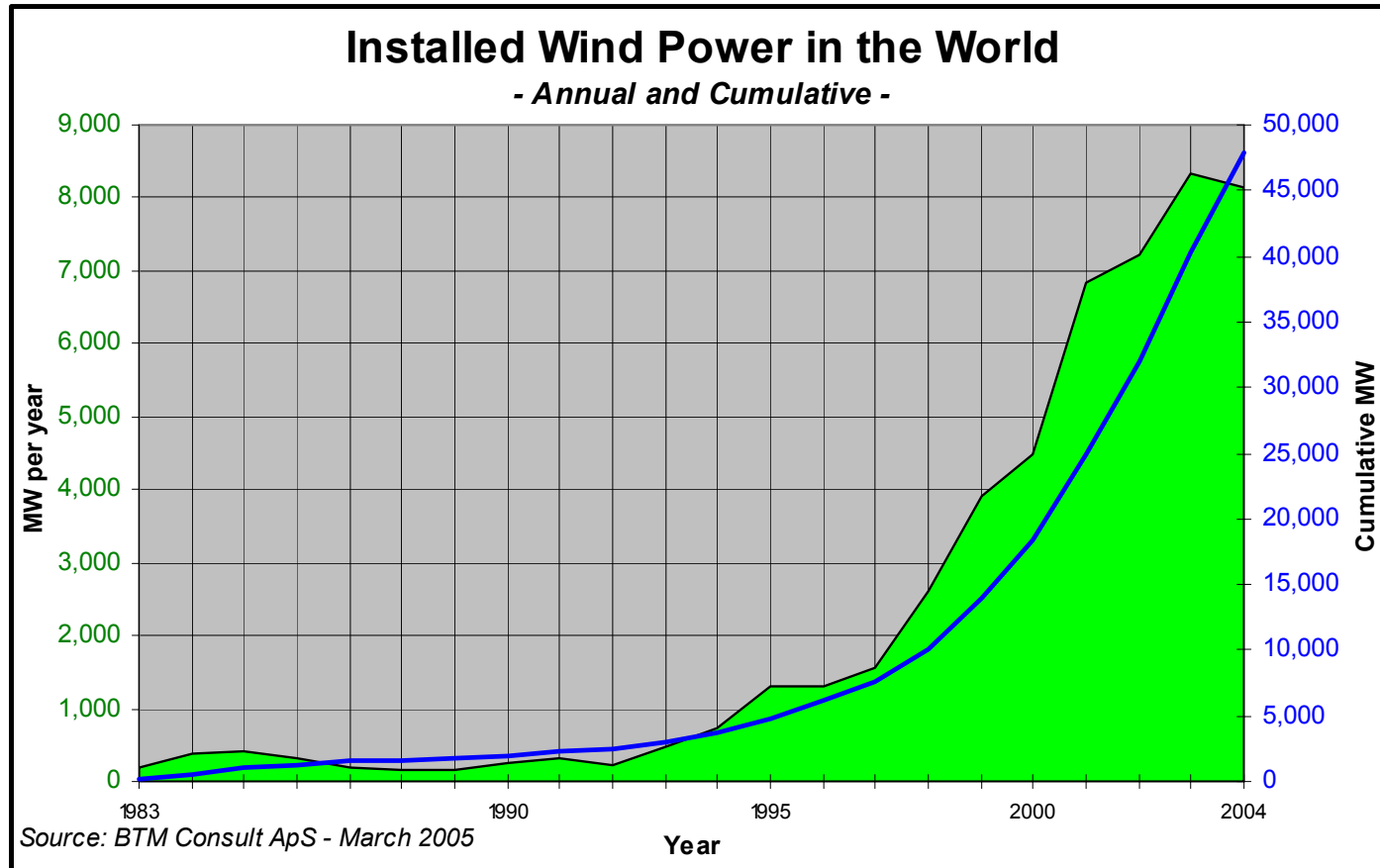
- **Consolidation and Scale**
- From Wind Turbines to Wind Power Plants
- From enthusiasts to utilities/IPP's

- Number of markets are increasing
- Number of manufacturers are reducing
- Average WTG is increasing in size
- Average project is increasing in size

- **Pioneering days are over. Wind Power Business has matured**

Average project size

- Average project has increased in size
 - 1998 Vestas made 5 announcements to Copenhagen Stock Exchange
 - 5 orders for average 34 MW
 - 2005 Vestas made 25 announcements to Copenhagen Stock Exchange
 - 25 orders for average 106 MW



The 10 largest markets by end of 2004 (cumulative MW)

- 80% of installed MW in 5 countries

Country	2002	2003	2004	Share %	Cum. Share %
Germany	11,968	14,612	16,649	34.7%	35%
Spain	5,043	6,420	8,263	17.2%	52%
USA	4,674	6,361	6,750	14.1%	66%
Denmark	2,880	3,076	3,083	6.4%	73%
India	1,702	2,125	3,000	6.3%	79%
Italy	806	922	1,261	2.6%	81%
Netherlands	727	938	1,081	2.3%	84%
Japan	486	761	991	2.1%	86%
UK	570	759	889	1.9%	88%
P.R. China	473	571	769	1.6%	89%
Total	29,329	36,545	42,735		
Percent of World	91.5%	90.7%	89.2%		

Source: BTM Consult ApS - March 2005

- Blades
- Nacelle
- Tower
- Transport/crane/erection
- Foundations
- Electrical Works
- Roads



Wind Power Plant

	Supply Contract	EPC- Contract
• Blades and nacelle	75%	57%
• Tower	15%	11%
• Transport/crane/ erection	10%	7%
• Foundations		
• Electrical works		
• Roads		25%
	<hr/> 100%	<hr/> 100%

Supply contract approx. EUR 1 mill/MW installed

EPC-contract approx. EUR 1.2-1.5 mill/MW installed

- **Investment Cost:** Front Loaded
- **Income:** Annuity style
- **Operating costs:** approx. 1.0 EURcent/kWh
(no fuel costs)

- **Bankability improved**

- DSCR: Significant positive impact
- Gearing: Higher gearing possible
- PPA: Lower power price possible

- **Feasibility improved**

- Sponsor IRR / NPV
- 10 years Strong positive impact
- 20 years Unchanged

- **Less export credits – more project finance**
 - Project finance requires tailored repayment profile
 - Maturity for annuity style loan max. 12 years
 - Local cost element in wind projects 25-75%

A photograph of several wind turbines silhouetted against a vibrant sunset sky. The sun is low on the horizon, creating a warm orange and yellow glow. The turbines are arranged in a line, receding into the distance. The overall mood is serene and clean.

Q & A

With quality and care we use the wind to create competitive, clean and renewable energy