

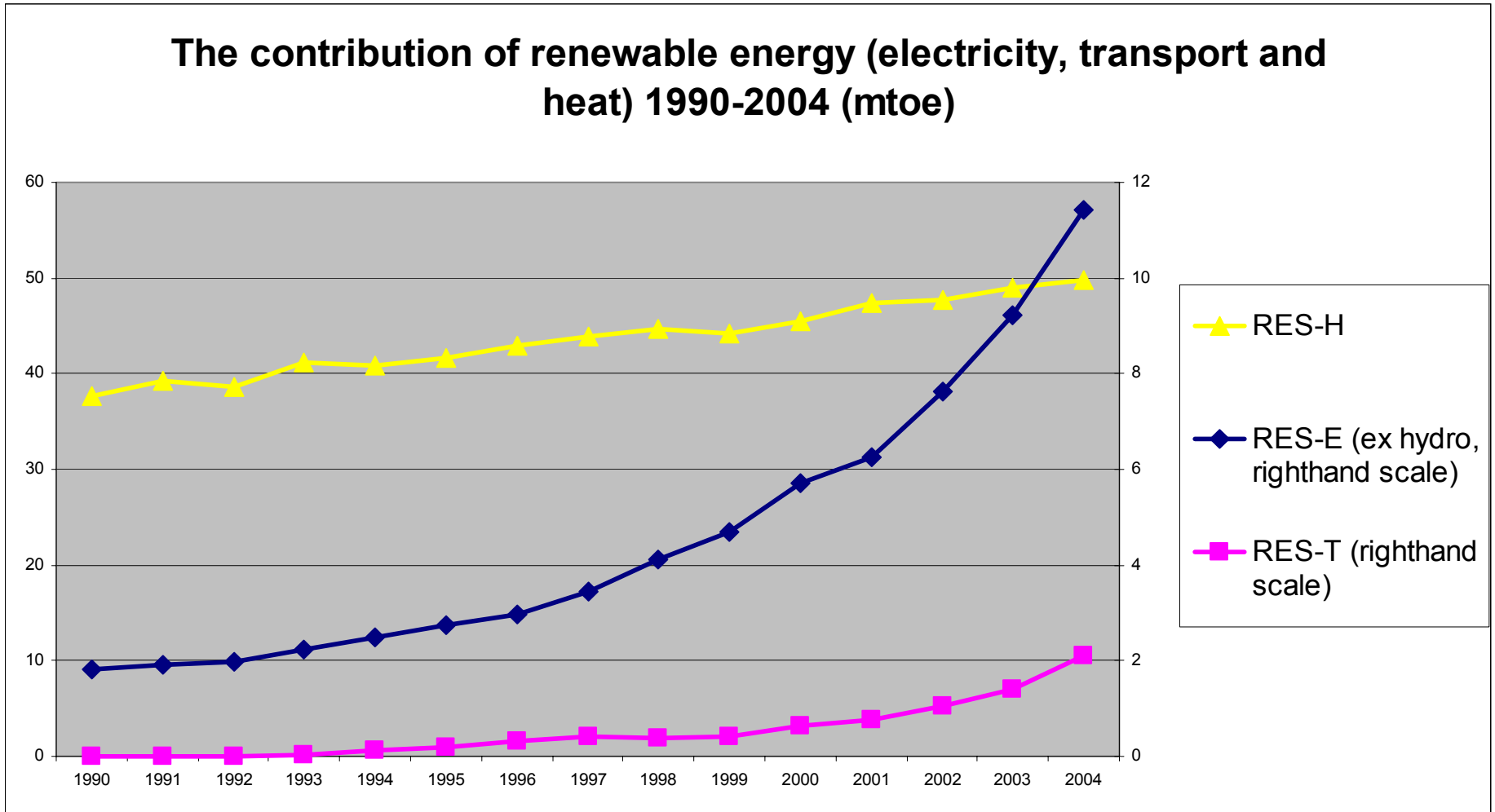


Europäische Energiepolitik: Die Renewable Energy Road Map – Hintergründe und Ziele

**Oliver Schäfer, Politikdirektor des European
Renewable Energy Council (EREC)**

What was achieved in the past?

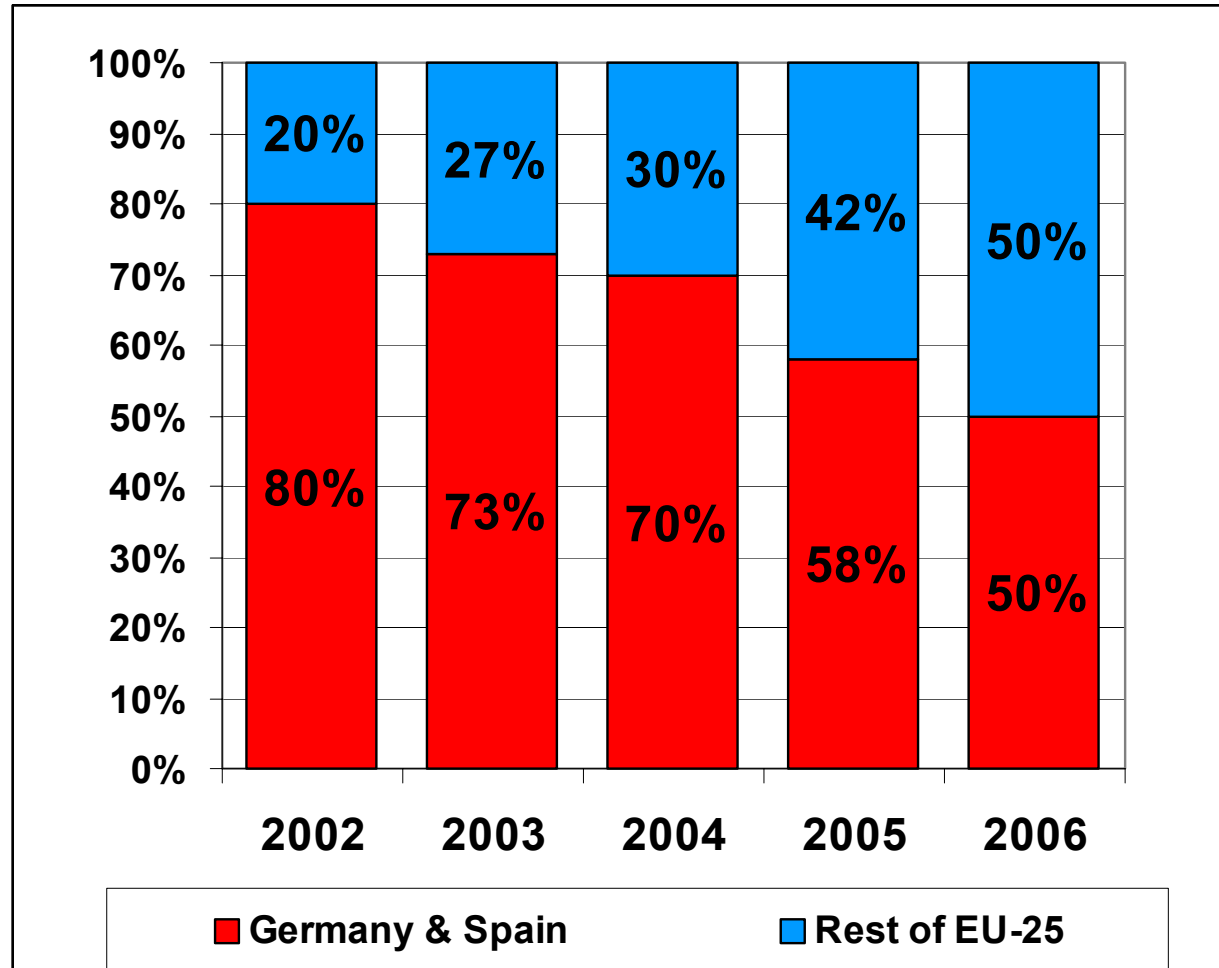
The contribution of renewable energy (electricity, transport and heat) 1990-2004 (mtoe)



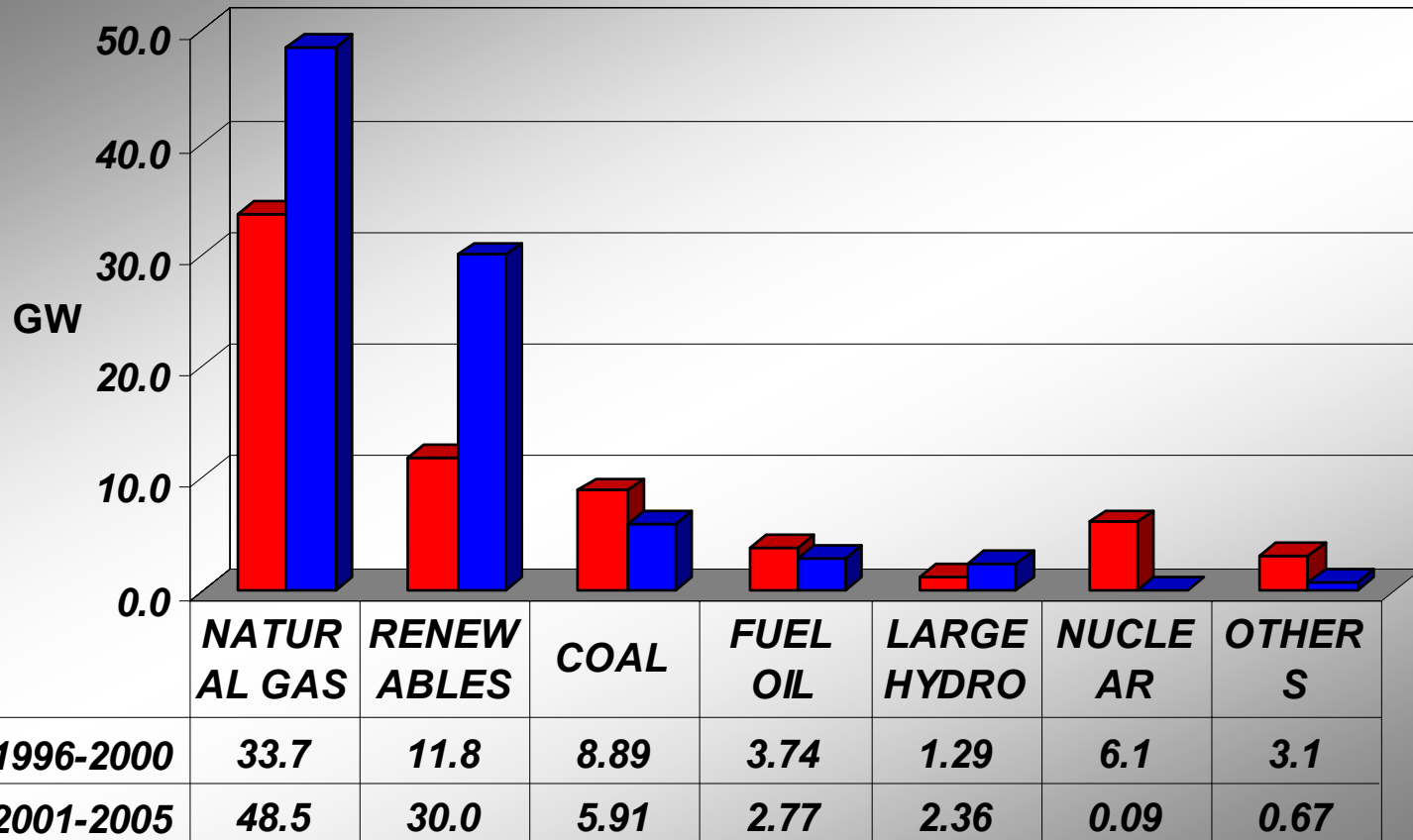
Source: EC

Am Anfang waren Deutschland und Spanien...dank der erfolgreichen EU Gesetzgebung hat sich dies gewandelt:

Neue Windkapazität:



Neue Kapazität nach Quelle EU15 (+10 ab 2005)



Source: Platts,
EWEA, EREC

Werden die Ziele der bestehenden Richtlinie erreicht (Strom)?

TYPE OF ENERGY	2000 EUROSTAT TWh	2004 EUROSTAT TWh	AGR 2000-2004 %	DIRECTIVE TARGET 2010 TWh	AGR NEEDED 2004-2010 %
1. Bioelectricity	39.5	67.9	14.5		
2. Wind	22.2	58.5	27.5		
3. Photovoltaics	0.13	0.74	54.5		
4. Geothermal	4.8	5.5	3.5		
Total R.E. without hydro	66.6	132.6	18.8	373	18.8
5. Hydro	337.3	303.8	-2.6	352	2.5
Total R.Energies	403.9	436.4	2.0	725	8.8
Total electricity	2,928	3,179	2.1	3,456	1.4
Renewables' Share Without hydro%	2.3	4.2	-	10.8	
Renewables' Share %	13.8	13.7	-	21	

Das Ziel 20% bis 2020

**Was tragen die verschiedenen
Sektoren bei?**

Contribution of Renewables to Electricity Production (2004-2020)

	2004 Eurostat TWh	2010 Projections TWh	2020 Projections TWh
Wind	58.5	179	510
PV	0.74	9	62
Bioelectricity	67.9	150	300
Hydro	303.8	356	384
Geothermal	5.5	7	14
Solar thermal elect.	-	2	9
Ocean	-	3	15
TOTAL RES	435.9	706	1294
Total Electricity Generation EU25 (Trends to 2030-Baseline) (Combined RES and EE)	3178.6	3483 3314	4006 3250
Share of RES	13.7%	20.3-21.3%	32.3-39.8%

Biofuels Contribution



	2000 EUROSTAT	2004 EUROSTAT	Projection 2010	Projection 2020
	Mtoe	Mtoe	Mtoe	Mtoe
Transportation Biofuels	0.63	2.1	18.0	40.0
Gasoline and oil demand (Trends to 2030-Baseline) (Combined RES and EE)	277.3	290	313 311.5	332 312
Biofuels' Share %	0.2	0.72	5.75	12.0-12.8

Contribution of Renewables to Heat Production (1995-2020)

	2004 Eurostat Mtoe	2010 Projections Mtoe	2020 Projections Mtoe
Biomass for heat	48.4	65	105
Solar thermal	0.68	2	12
Geothermal	1.5	4	8
TOTAL RES HEAT	50.6	81	125
Total Heat Generation (Trends to 2030)	440	467	488
Share of RES	11.5%	17.3%	25.6%

Contribution of RES to Total Primary Energy Supply

Eurostat Convention (Mtoe)



EREC

	2004		PROJECTIONS 2010		TARGETS 2020	
TYPE OF ENERGY	Eurostat Convention	% of total	Eurostat Convention	% of total	Eurostat Convention	% of total
Total Gross Inland Consumption	1,747		1,761 (Combined RES and EE)		1,633 (Combined RES and EE)	
1. Wind	5.03	0.29	15.4	0.87	43.9	2.69
2. Hydro	26.13	1.50	30.6	1.74	33	2.02
3. Photovoltaics	0.06		0.8	0.05	5.3	0.32
4. Biomass	71.9	4.11	125	7.10	235	14.4
5. Geothermal	5.36	0.31	8.2	0.46	16.4	1.00
6. Solar Thermal	0.68	0.04	2	0.11	12	0.73
7. Solar Power	0		0.2	0.01	0.8	0.05
8. Ocean			0.25	0.01	1.3	0.08
Total Renewable Energies	109.16	6.25	182.4	10.4	348	21.3

Roadmap – Die Herausforderungen

- ◆ Aufteilung der Ziele (Burden-Sharing?)
- ◆ Statistik
- ◆ Wachstum in allen Sektoren gewährleisten
- ◆ Bestehende Gesetzgebung erhalten
- ◆ Nationale Aktionspläne
- ◆ Fördermechanismen

„Lastenteilung“

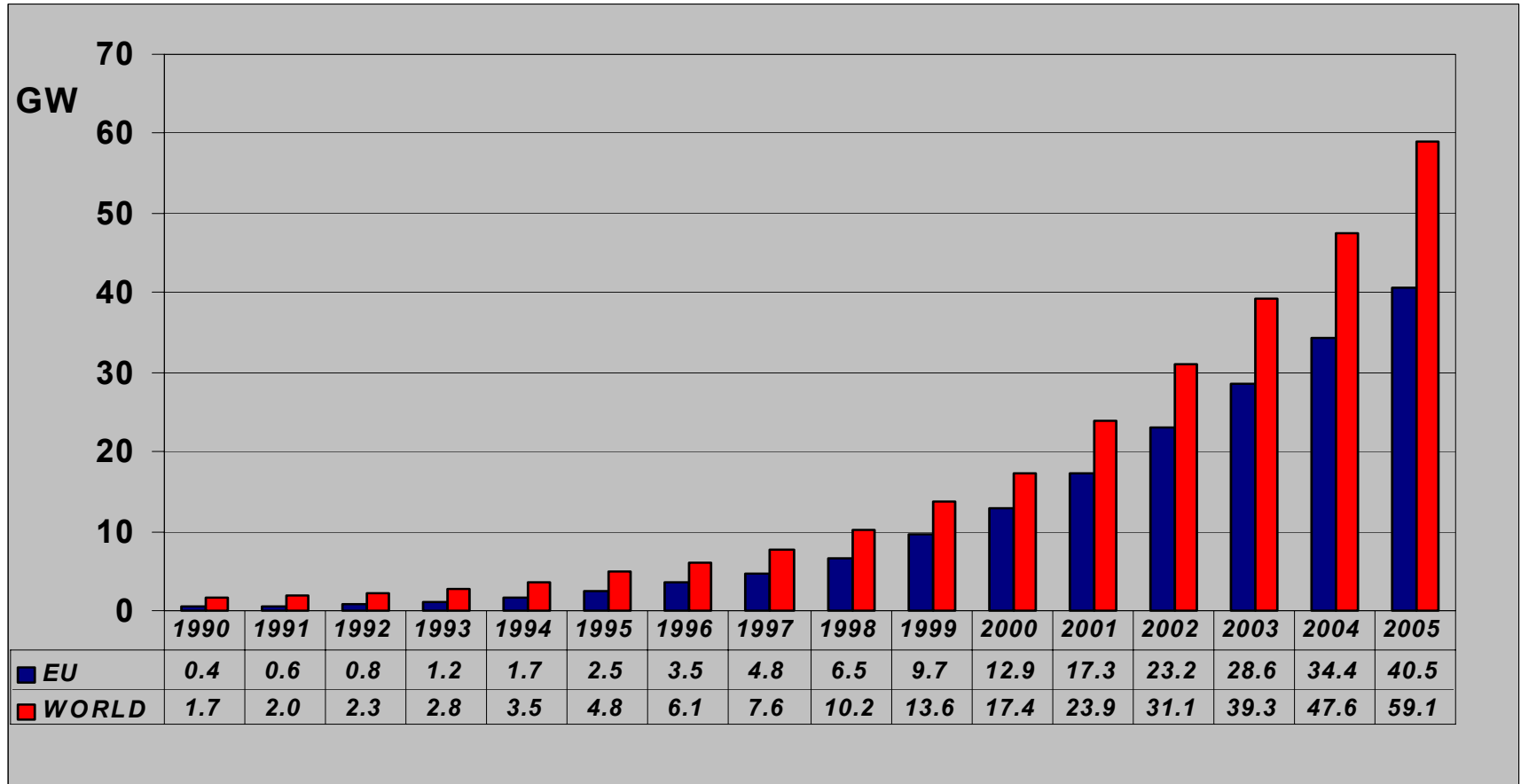
oder

Chancenverteilung ?

Cumulative Wind Energy Installed Capacity



The EU White Paper Target has been achieved 5 years earlier

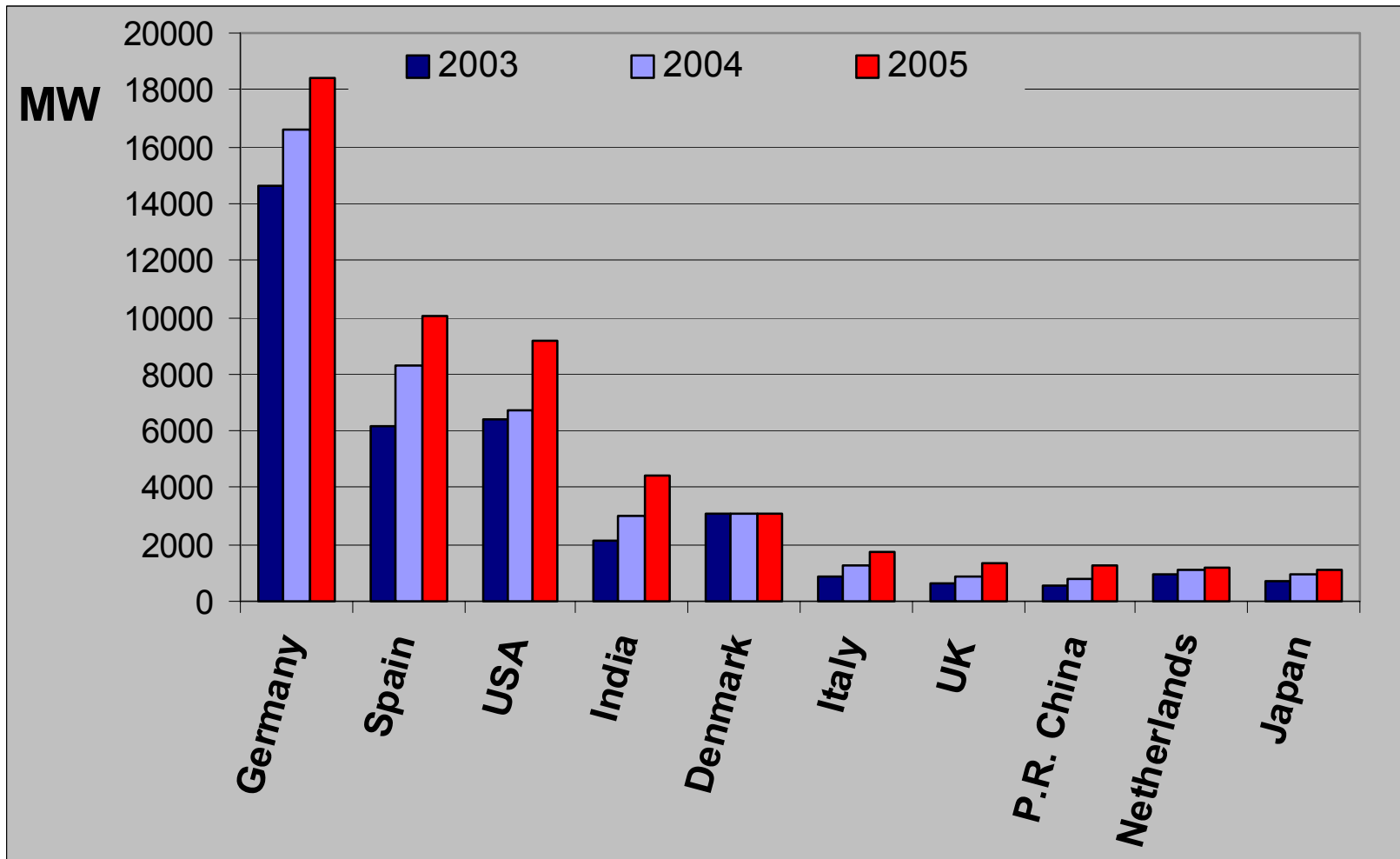


Average Annual Growth Rates
 Europe 1995-2000 38.8%,
 2000-2005 25.7%

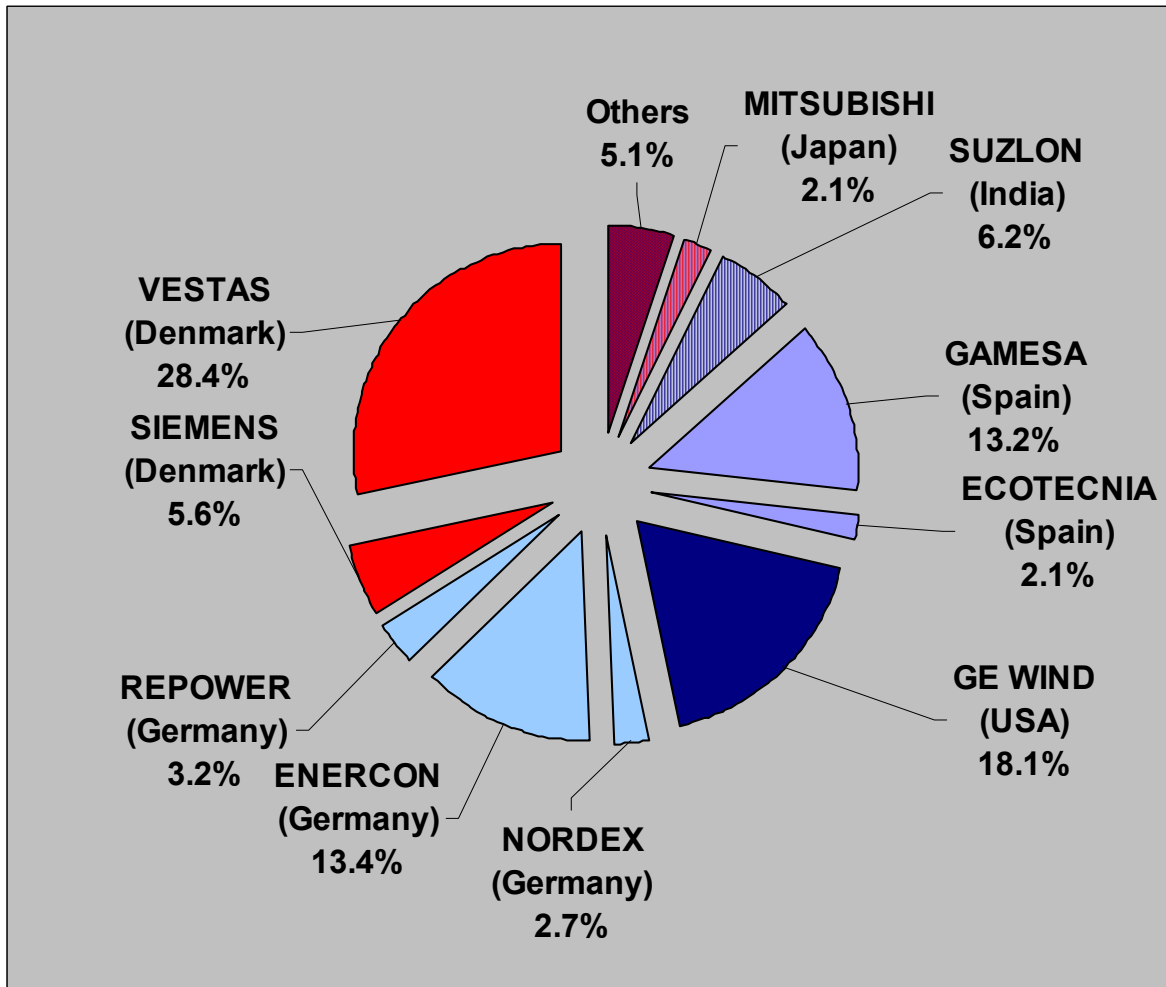
World 1995-2000 29.4%,
 2000-2005 27.8%

Source: EWEA, GWEC

The Top-10 Markets in the World



The Top 10 Suppliers in the World



Source: BTM Consult

Die Statistik

Eurostat Convention (Mtoe)

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Substitution Principle (Mtoe)

	2004		TARGETS 2010		TARGETS 2020	
TYPE OF ENERGY	Substitution Principle	% of total	Substitution Principle	% of total	Substitution Principle	% of total
Total Gross Inland Consumption	1,793		1,833 (Combined RES and EE)		1,760 (Combined RES and EE)	
1. Wind	12.9	0.72	42.7	2.33	116.6	6.63
2. Hydro	66.9	3.73	78.3	4.27	84.5	4.80
3. Photovoltaics	0.15	0.01	1.3	0.07	10.6	0.60
4. Biomass	71.9	4.01	120	6.55	220	12.5
5. Geothermal	2.7	0.15	4.7	0.26	10.9	0.62
6. Solar Thermal	0.68	0.04	2	0.11	12	0.68
7. Solar Power			0.4	0.02	2.0	0.11
8. Ocean			0.6	0.03	3.3	0.19
Total Renewable Energies	155.23	8.66	250	13.6	459.9	<u>26.1</u>

World - 2004

	TWh	% electricity	Mtoe	% primary energy
Nuclear	2.740	16%	714	6%
Hydro	2.809	16%	242	2%

Source: IEA

European Union - 2004				
	TWh	% electricity	Mtoe	% primary energy
Nuclear	988	31%	257	14.6%
Hydro	300	10%	26	1.48%

Source: IEA

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Thank you for your attention!

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