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# **PUBLIC HEARING**

**on**

# **"Towards a Common Energy Policy for Europe"**

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President of EREC

# EREC - European Renewable Energy Council

**Umbrella organisation representing all RES sectors:**

- ✓ **AEBIOM** European Biomass Association
- ✓ **EGEC** European Geothermal Energy Council
- ✓ **EPIA** European Photovoltaic Industry Association
- ✓ **ESHA** European Small Hydropower Association
- ✓ **ESTIF** European Solar Thermal Industry Federation
- ✓ **EUBIA** European Biomass Industry Association
- ✓ **EWEA** European Wind Energy Association
- ✓ **EUREC Agency** European Renewable Energy Research Centres Agency

# The Root of the Energy Problem for the EU

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- We are going to import an ever growing share of our energy at unpredictable (but most likely higher) prices in competition with the rest of the world and at unbelievable environmental cost.
- Regardless of whether we are successful in energy diplomacy or not, we have no idea about the future cost of energy we will be paying to maintain current supply

# Turn the energy challenge into an opportunity for Europe

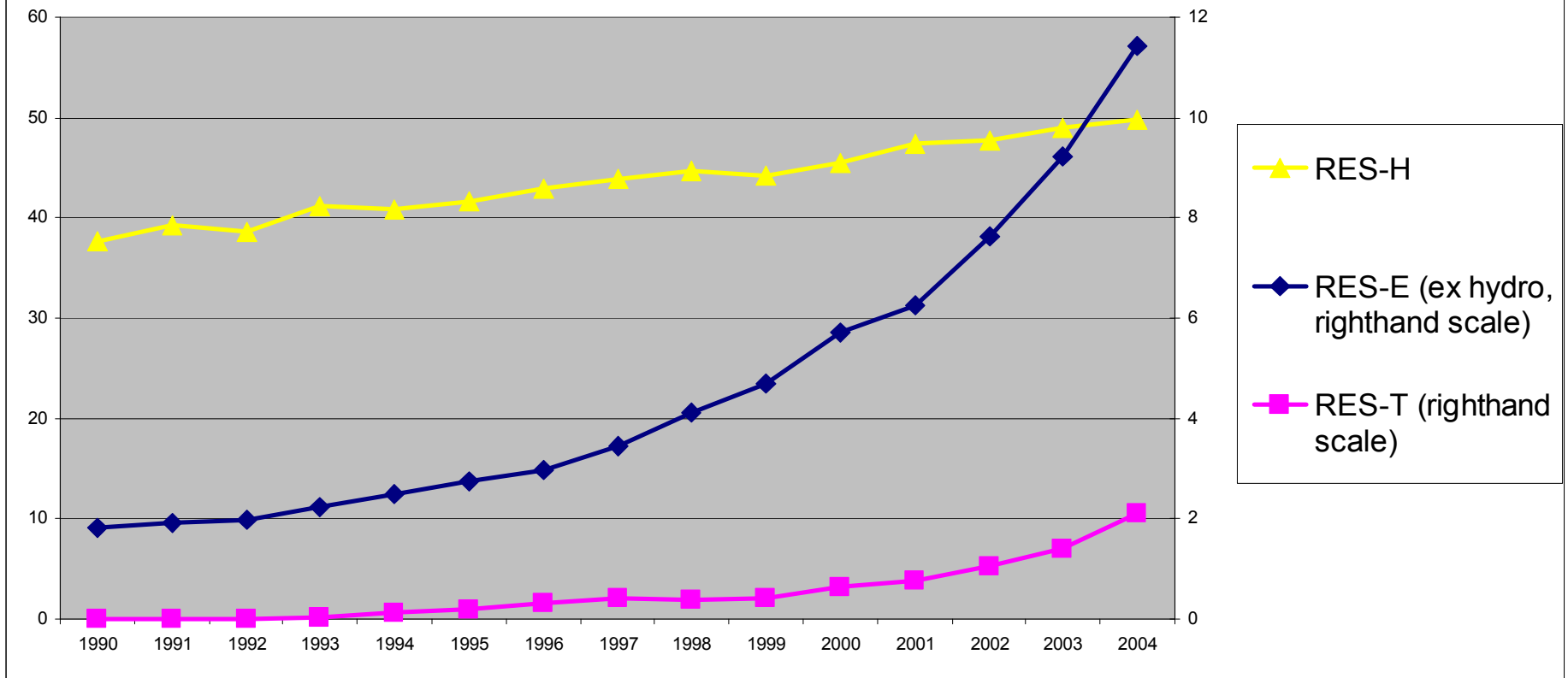
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- If we are to shape our energy future, we need to shift direction and start developing the indigenous clean resources that are available at our doorstep – forever.
- We must seize the opportunity created by the large turnover in generating capacity in the next two decades to secure a truly indigenous energy supply while dealing with a looming crisis and the threat of climate change.
- Using the energy efficiency potential, together with a major shift towards renewables, the EU could become the most energy import independent region in the world.

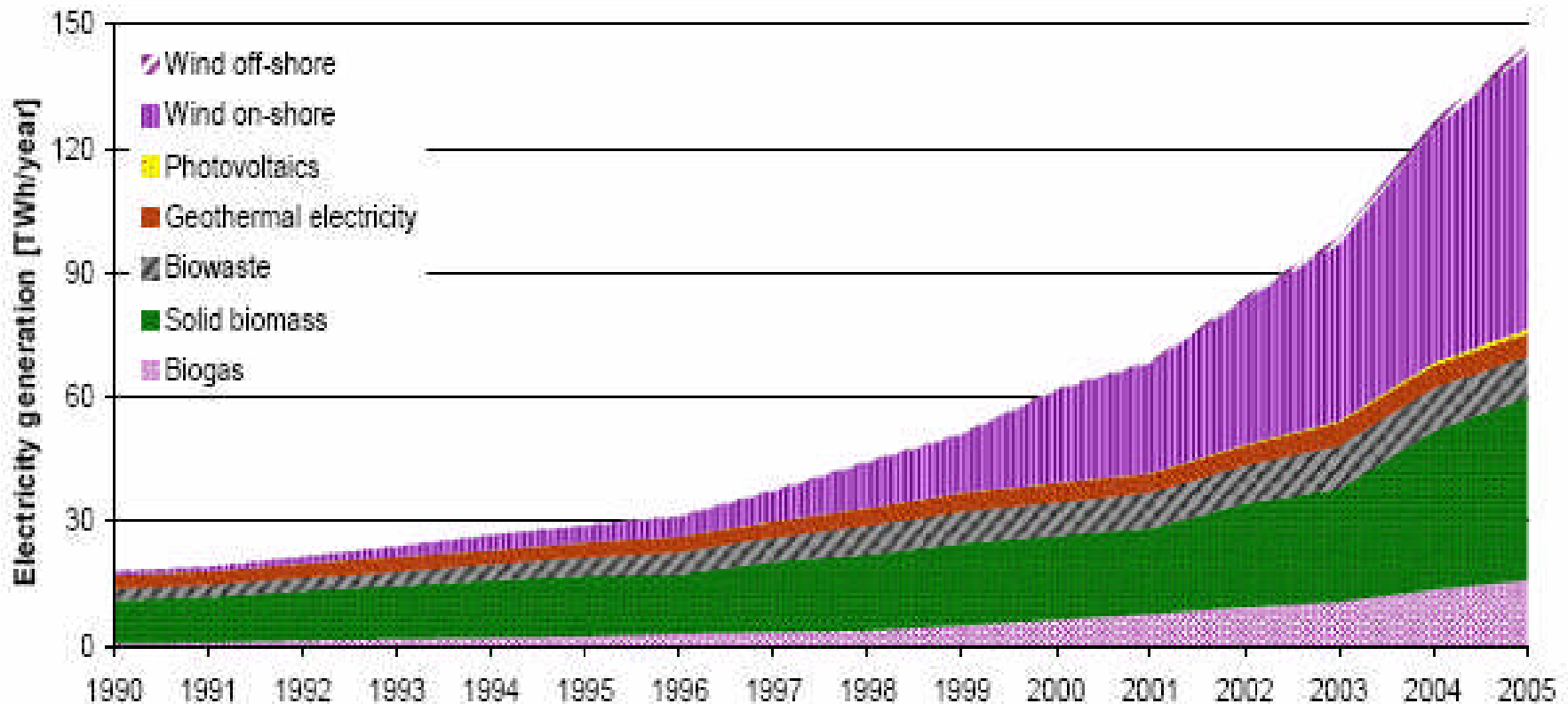
# What was achieved in the past?

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



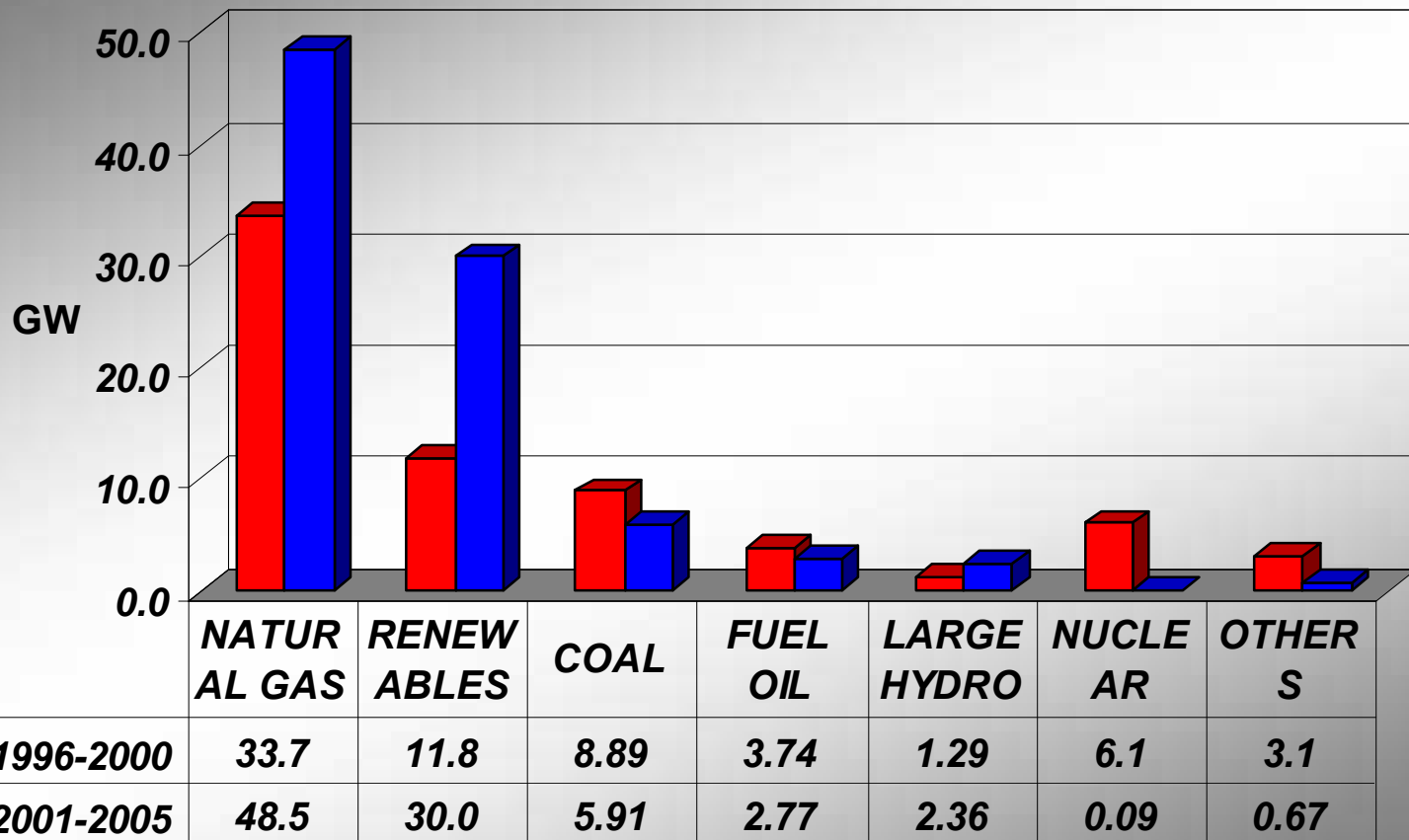
Source: EC

**Where are we? Production of 'new' RES-E (without hydropower) in 2005 is more than the combined overall electricity production in Denmark, Portugal and Slovak Republic.**



Source: EC

# New Capacity Installed by Fuel in EU15 (+10 from 2005)



Source: Platts, EWEA

# Will the RES Electricity Directive Targets be Achieved for EU-25?

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

# 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
<b>TOTAL RES</b>	<b>435.9</b>	<b>706</b>	<b>1294</b>
Total Electricity Generation EU25 (Trends to 2030-Baseline) (Combined RES and EE)	3178.6	3483 3314	4006 3250
<b>Share of RES</b>	<b>13.7%</b>	<b>20.3-21.3%</b>	<b>32.3-39.8%</b>

# Biofuels Contribution

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

# Contribution of Renewables to Heat Production (1995-2020)

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

# Contribution of RES to Total Primary Energy Supply

## Eurostat Convention (Mtoe)



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

# Environmental benefits

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- ◆ With a renewable energy share of 20%, annual savings of 600-900 Mt. of CO<sub>2</sub> would be the result. This equals to a saving of about 12%-14% of total CO<sub>2</sub> emissions compared to 1990 levels
- ◆ Combined with 20% efficiency by 2020 an additional saving of 780 Mt CO<sub>2</sub> by 2020 could be reached



**This together would be three times the Kyoto target of the EU – and already more than the proposed 20% savings!**

# Security of Supply and Competitiveness

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- ◆ Decrease the dependency of imports and the negative effects of increasing (and volatile) oil and gas prices
- ◆ Avoided fuels in 2020 from increasing the share of renewable energy range from around 234-300 Mtoe/year of which approximately 200Mtoe/year would be imported. **This reduces imports by about 20%**
- ◆ An active renewable energy policy also creates potential for European manufacturers to export this technology. This export potential is greatest for innovative technologies, but also exists for well-established technologies

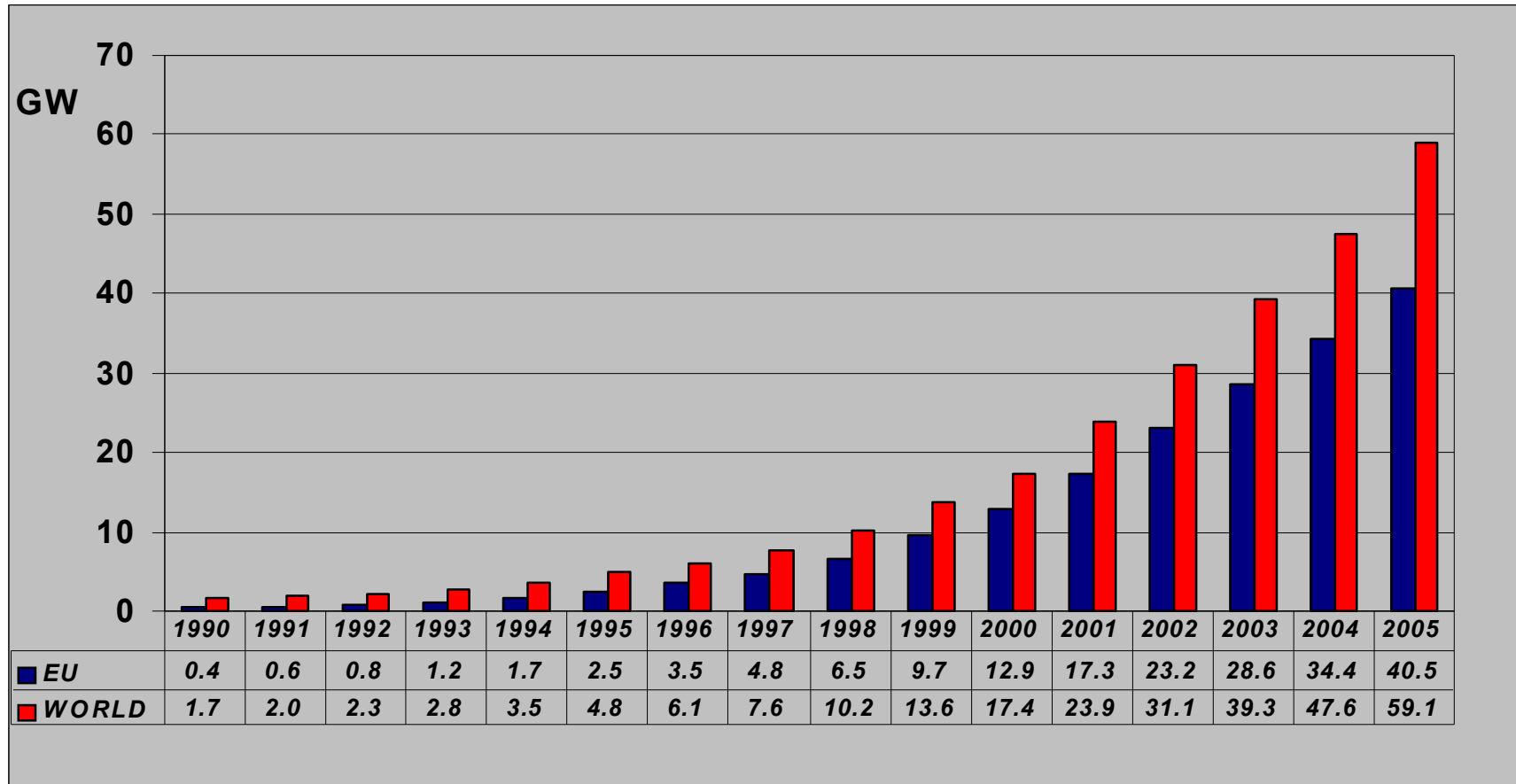


**Strengthening the competitiveness of our economy and facilitating the creation of as many as two million jobs in Europe**

# Cumulative Wind Energy Installed Capacity



The EU White Paper Target has been achieved 5 years earlier

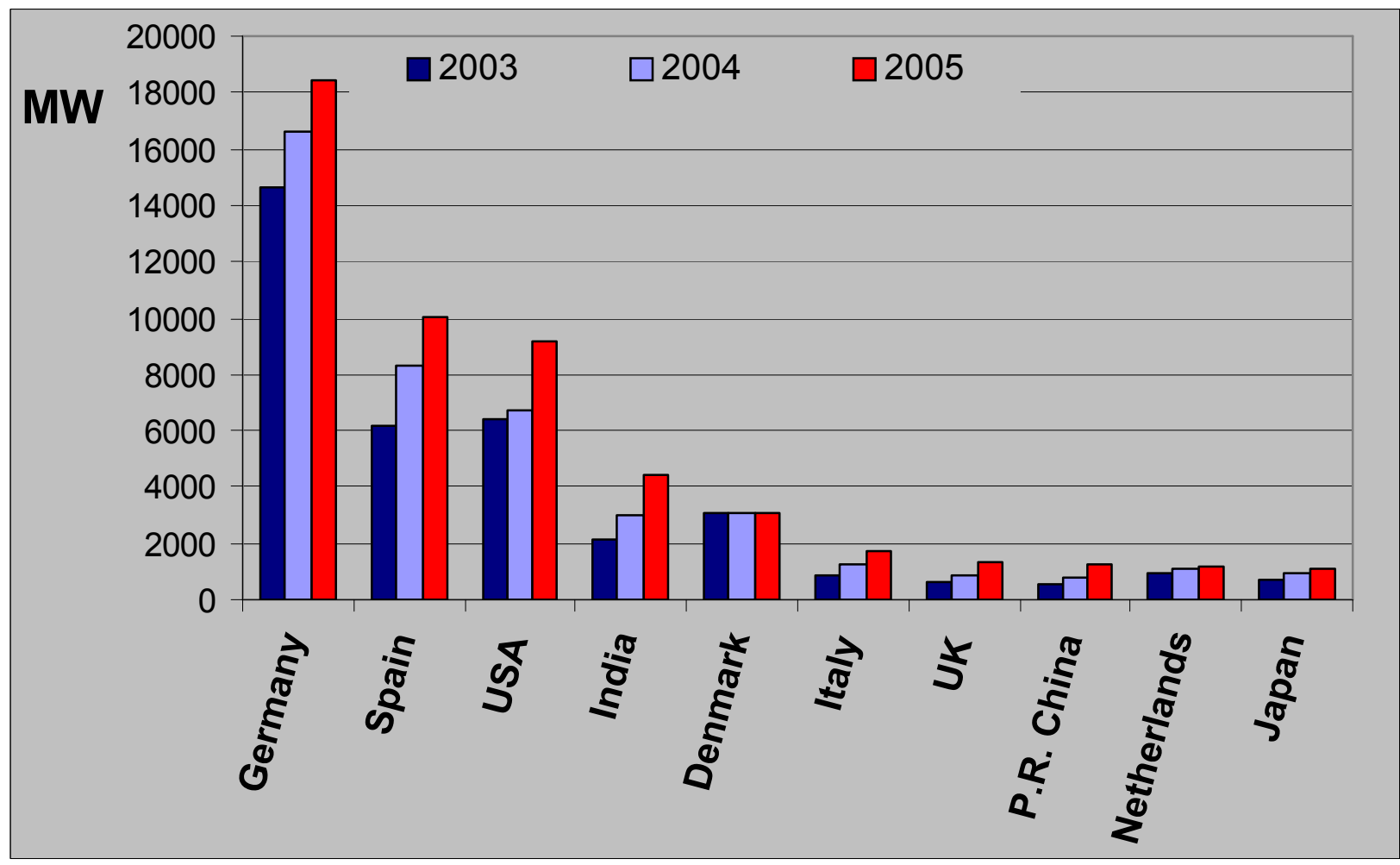


Average Annual Growth Rates  
 Europe 1995-2000 38.8%,  
 2000-2005 25.7%

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

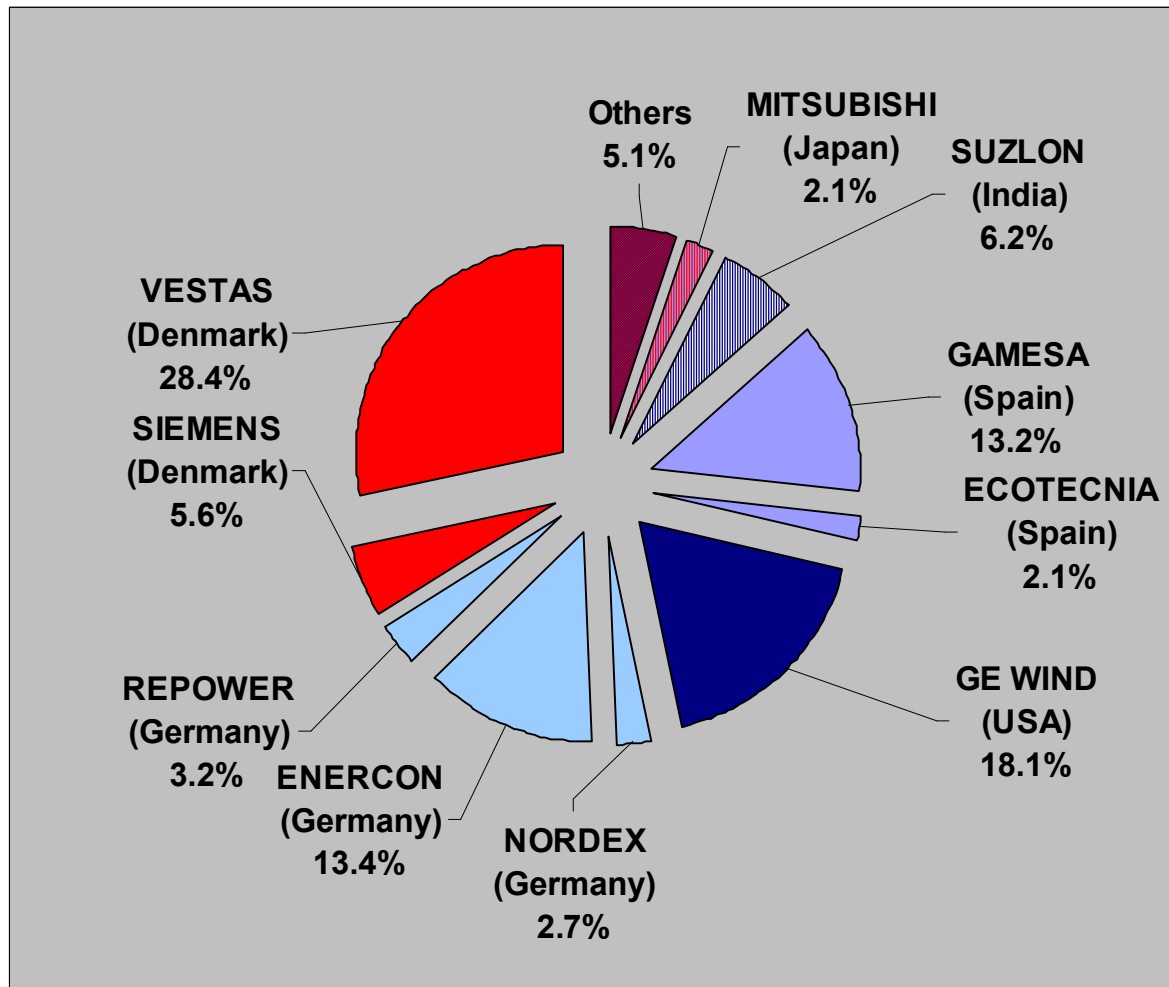
Source: EWEA, GWEC

# The Top-10 Markets in the World



# The Top 10 Suppliers in the World

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Source: BTM Consult

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**Thank you for your attention!**

**For more information please visit:**

**[www.erec.org](http://www.erec.org)**

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**World - 2004**

	<b>TWh</b>	<b>% electricity</b>	<b>Mtoe</b>	<b>% primary energy</b>
<b>Nuclear</b>	<b>2.740</b>	<b>16%</b>	<b>714</b>	<b>6%</b>
<b>Hydro</b>	<b>2.809</b>	<b>16%</b>	<b>242</b>	<b>2%</b>

**Source: IEA**

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

**Source: IEA**