



WWEA

世界风能协会

Всемирная Ассоциация по Ветроэнергетике

The World Wind Energy Association  
www.wwindea.org

# EU harmonisation of renewable energy support and tariff schemes – based on the most successful principles?

*European Energy Policy Seminar  
INFORSE – EREF – EUFORES  
Brussels, 15 June 2005*



- 0. The World Wind Energy Association**
- 1. What are the most successful principles?**
- 2. Should/could a EU wide framework be based on the most successful principles?**
- 3. Conclusion – what to do**



## World Wind Energy Association

**Founded in July 2001 in Copenhagen, Denmark**

### **The Members:**

National associations, scientific institutes, companies, public bodies and individuals from currently 70 countries on all continents, including many developing countries

### **The Aims:**

Promoting the worldwide utilisation of wind energy by



being a communication platform for all wind energy actors world-wide



influencing national and international policies in favour of wind energy



providing international technology transfer

### **The Activities:**



World Wind Energy Conferences (WVEC 2005 in Melbourne/Australia)



Several working groups (sustainability guidelines, repowering, hybrid)



Advising governments, international organisations, etc.

**Head office since July 2003 in Bonn, Germany**



### Cooperation with international organisations:

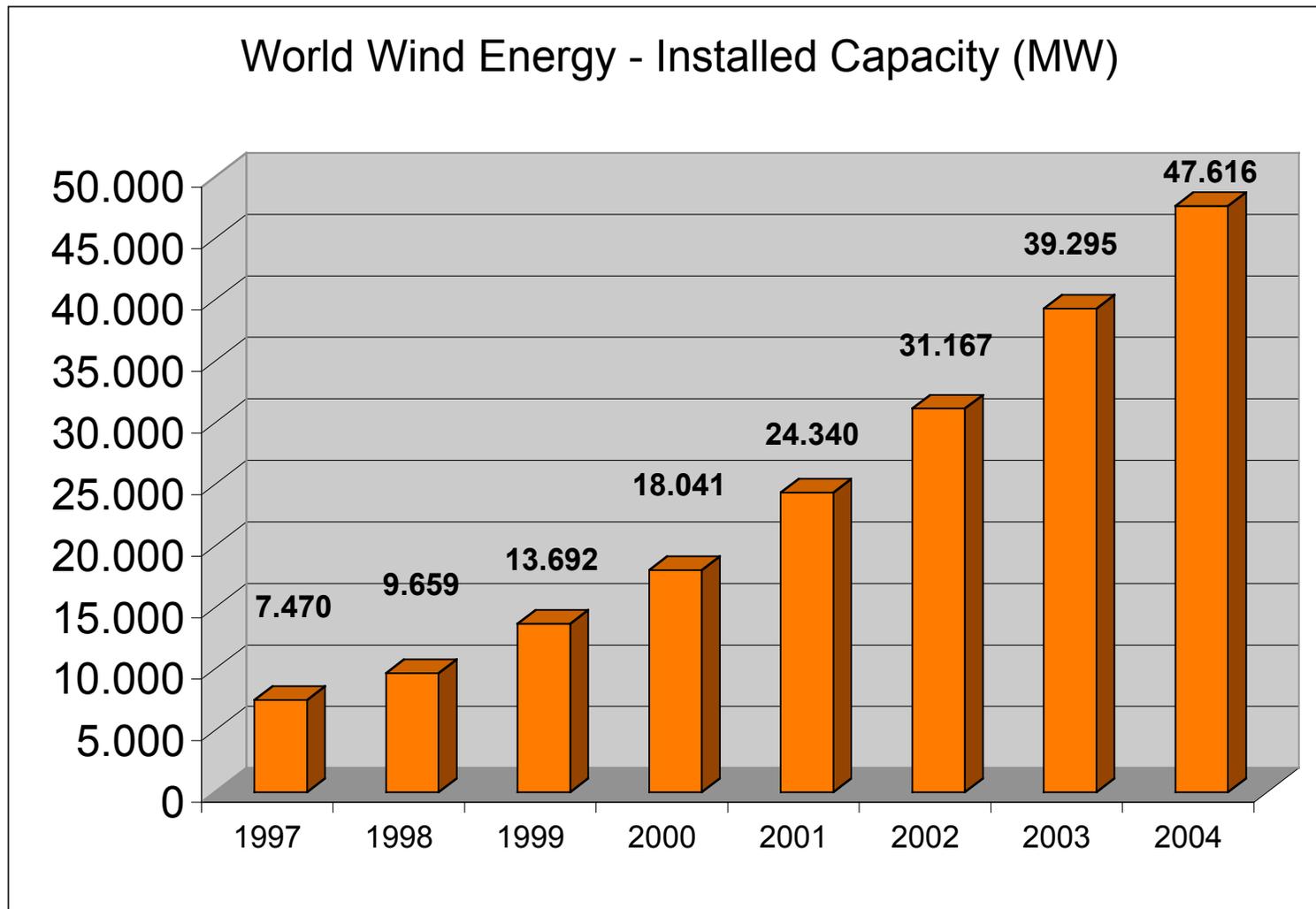
-  WWEA is accredited at the UNFCCC
-  WWEA cooperates with further international organisations like UNEP, UNESCO, IEA, etc
-  WWEA was member of *Renewables 2004* International Steering Committee and is member of REN21 Steering Committee

### Cooperation with non-governmental organisations:

-  WWEA is member of the World Council for Renewable Energies
-  WWEA has formed an international renewable energy alliance with the International Solar Energy Society and the International Hydropower Association
-  WWEA is open for cooperation with all like-minded national, continental, international renewable energy associations/institutes etc.



## Global Installation 1997-2004

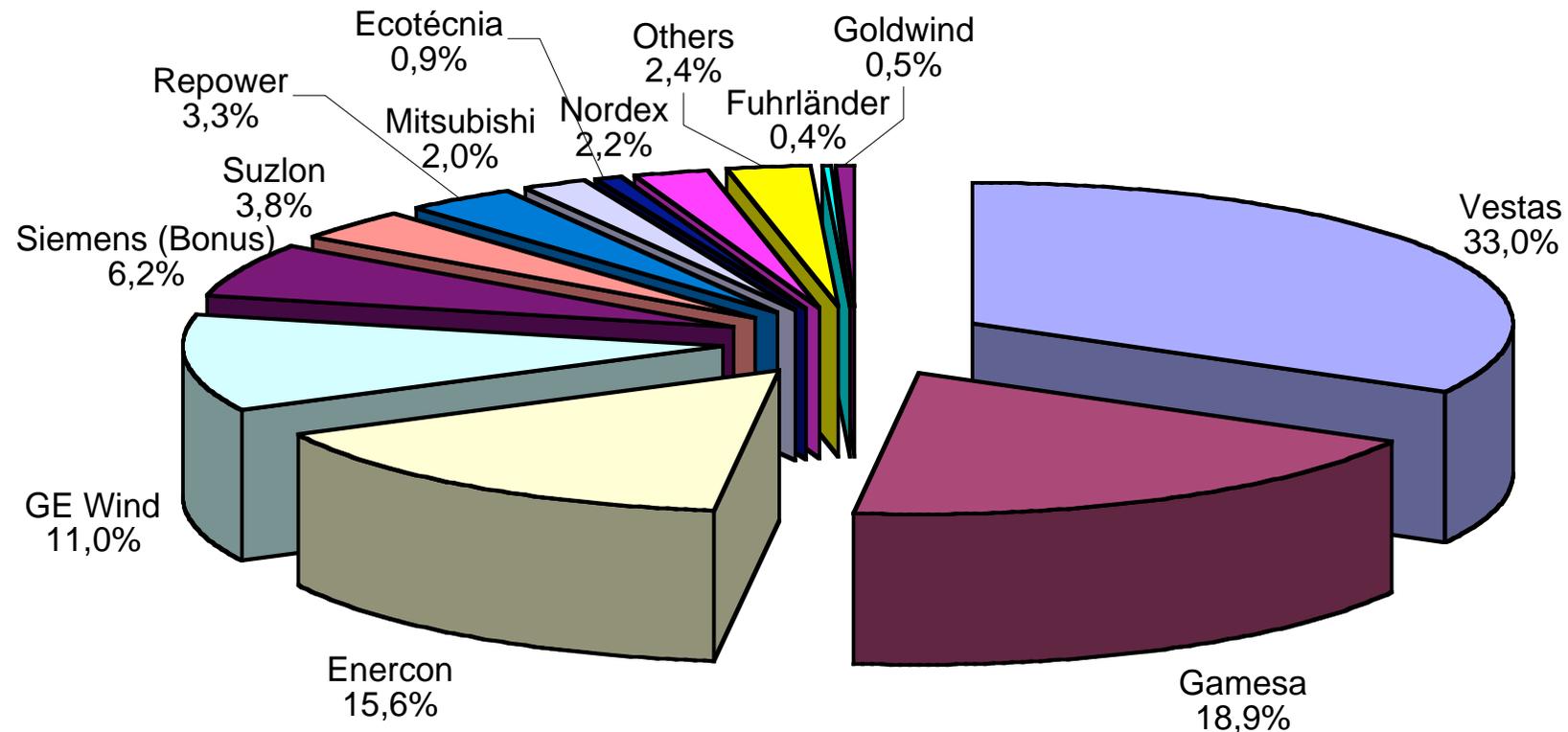




## Leading Wind Energy Markets 2004

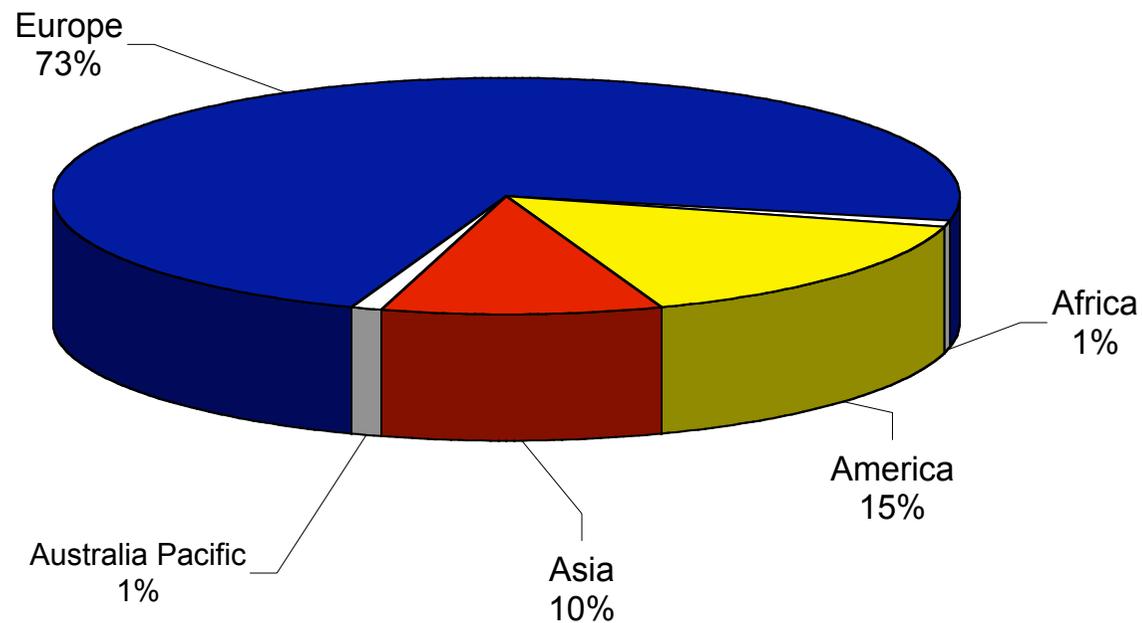
Country	Additional Capacity	Rate of growth	Total capacity
Germany	2019,7	13,8	16.628,8
Spain	2061,0	33,2	8.263,0
USA	370,0	5,8	6.740,0
Denmark	7,0	0,2	3.117,0
India	875,0	41,5	2.985,0
Italy	221,0	24,4	1.125,0
The Netherlands	170,0	18,7	1.078,0
Japan	390,2	77,1	896,2
United Kingdom	240,0	37,0	888,0
China	197,0	34,7	764,0
Austria	191,0	46,0	606,0
Portugal	223,0	74,6	522,0
Greece	124,0	34,0	489,0
Canada	122,0	37,9	444,0
Sweden	43,0	10,8	442,0
France	138,0	55,6	386,0
Australia	181,8	92,2	379,0
Ireland	152,9	82,2	338,9

## Manufacturers World Market Shares 2004



## Wind Energy by Continent

### Wind Energy - Installed Capacity 2004 (total: 47,6 GW)





## **What are the most successful principles?**

### **What are the criteria for the most successful principles?**

Compliance with specific characteristics of renewable energy

Effectiveness for rapid and sustainable market development

Efficiency for cost reduction



## **Wind energy investments – what is characteristic?**

## The price gap: No level playing field

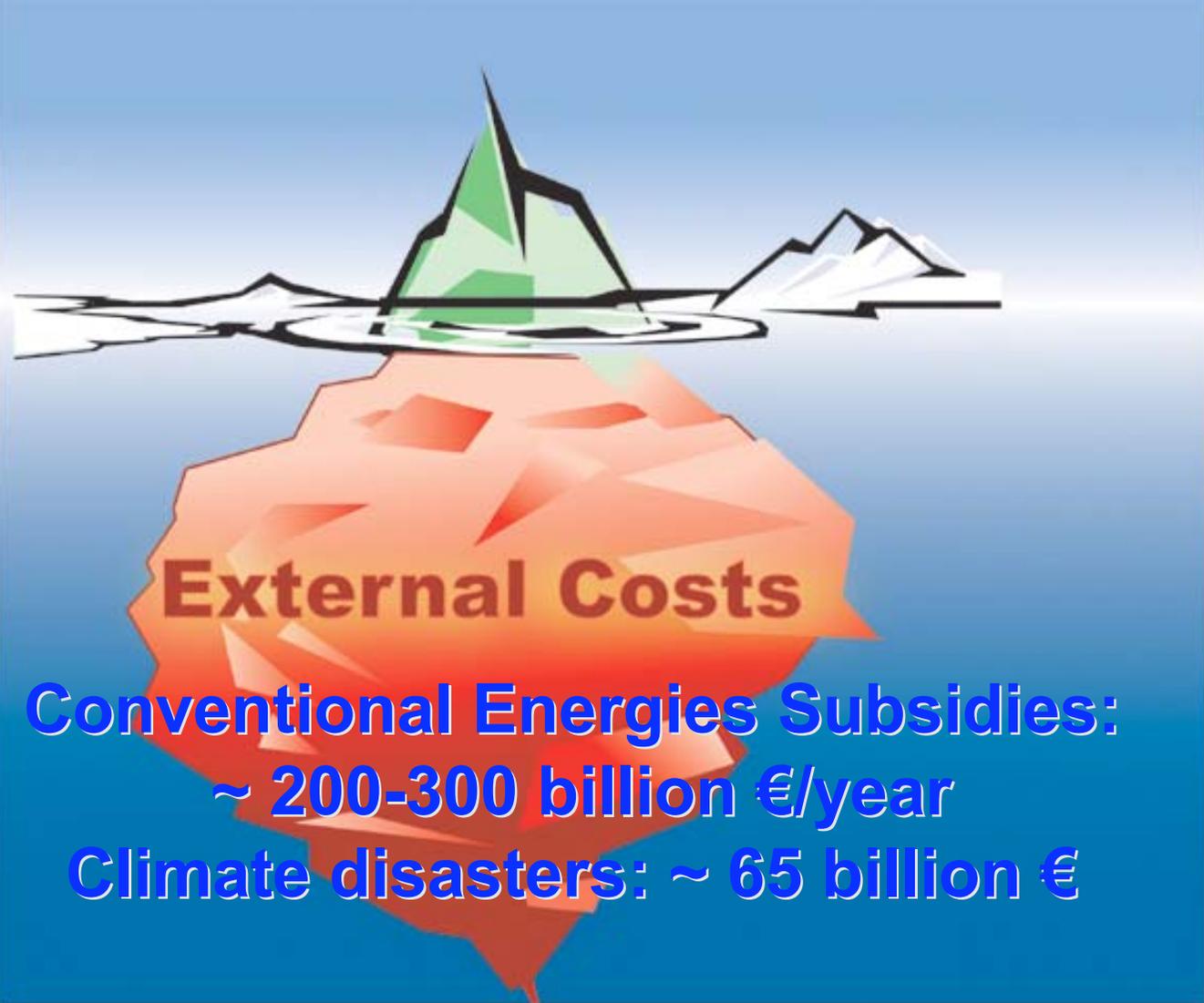
### Who pays?

**Consumer**  
(Power Prices)

**General Public**

Taxes,  
Insurance,  
Social Security

**Global Loss of  
Life Quality**

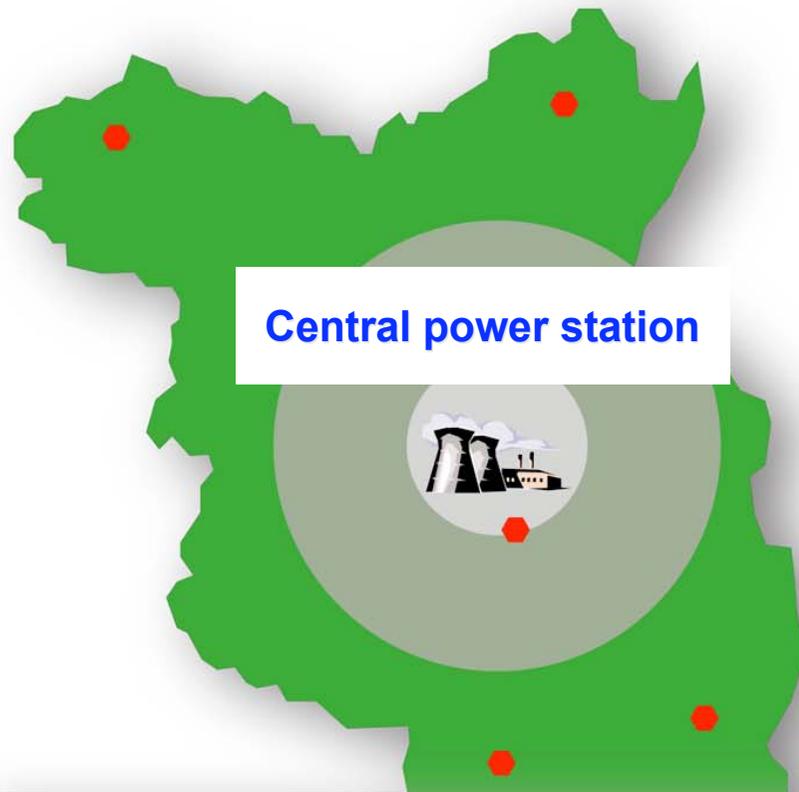


**External Costs**

**Conventional Energies Subsidies:**  
~ 200-300 billion €/year

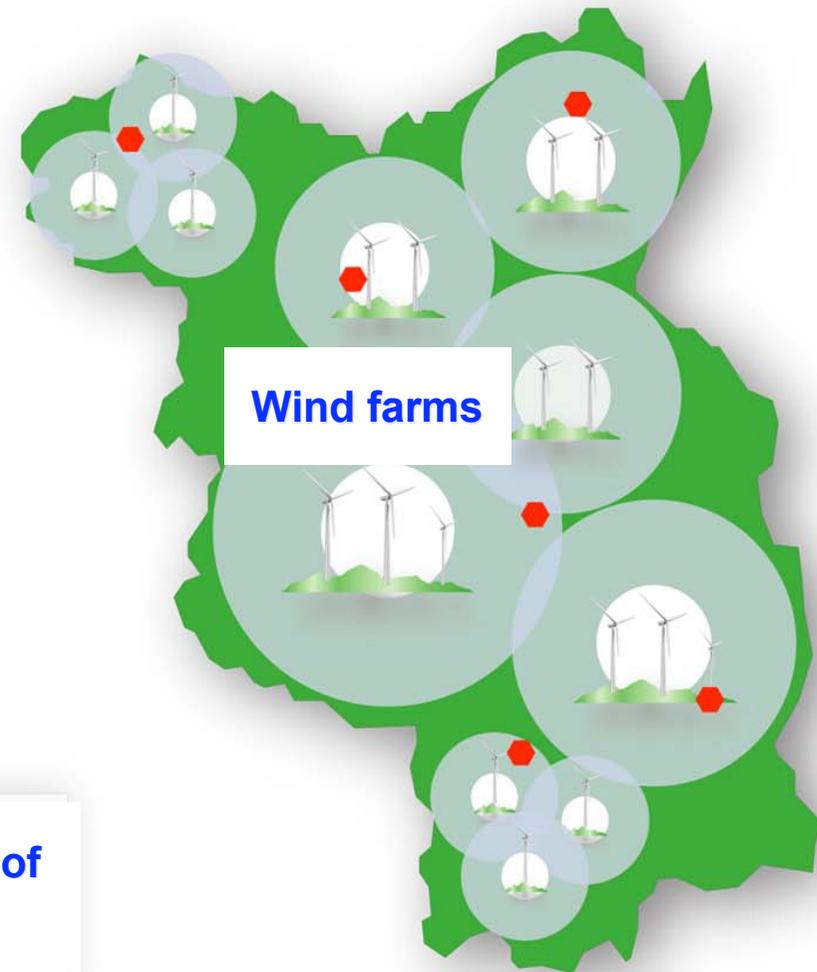
**Climate disasters: ~ 65 billion €**

## Decentralised renewable energy utilisation



**Central power station**

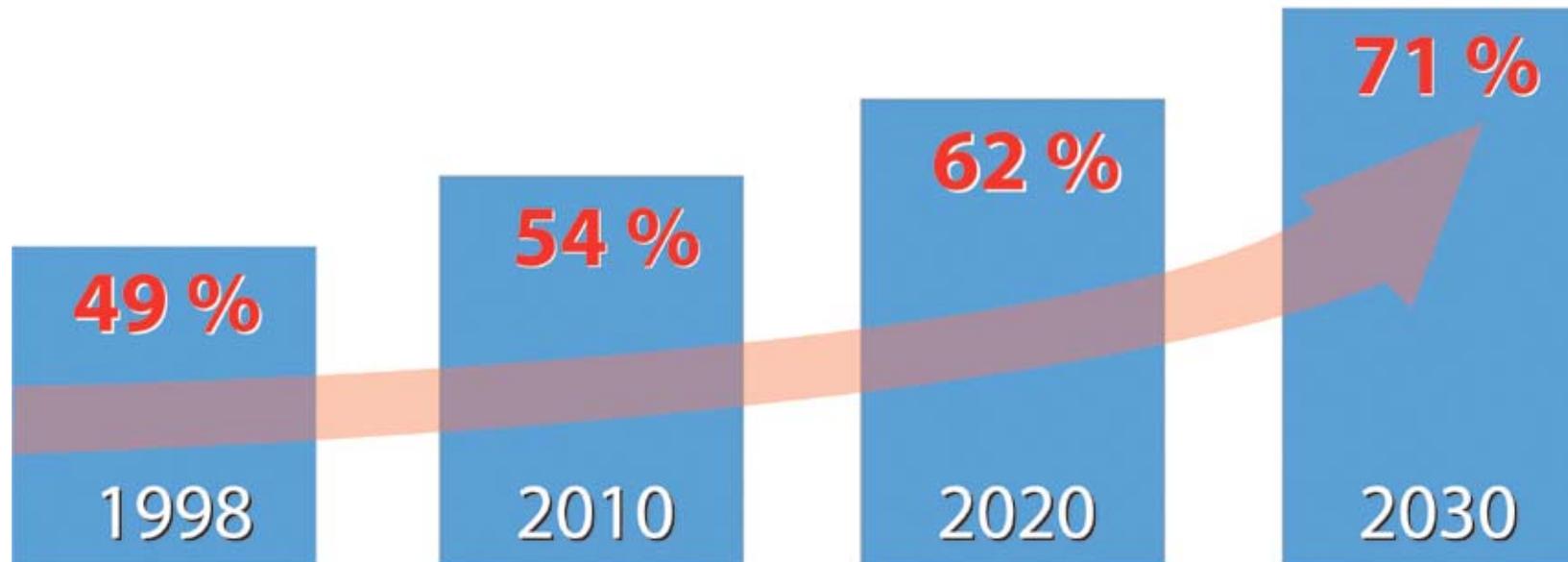
**Regionally added value through utilisation of wind energy**



**Wind farms**

## The case of security of energy supply

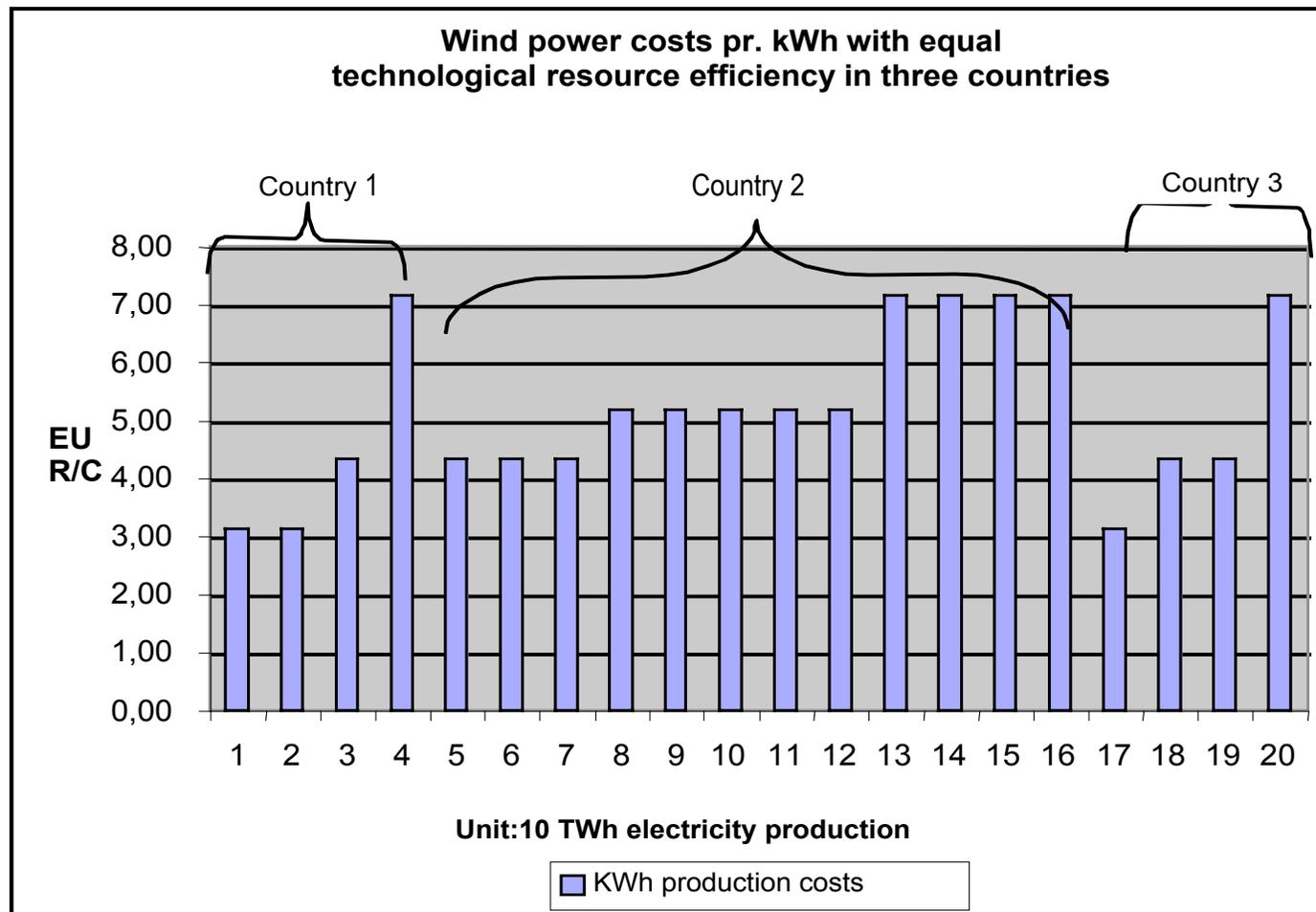
# Projected Import Dependence on Raw Materials for Energy Production in the European Union



The Dependence on Raw Material Imports will increase dramatically in Europe if current modes of Power Production are retained.

Source: European Commission

## Different Local Production Costs





## Specific investment structure:

high share of initially fixed cost (~80 %)  
& low share of operating cost

**==> Capital cost (interest rates, different risks to be covered)  
are decisive for BANKABILITY**

**Hardly any relevant economic optimisation can be made  
after a project has been realised  
==> Focus on equipment market**



## Wind energy investment – what is characteristic?

- 1. Price gap due to lack of level playing field – externalities and subsidies favouring fossil and nuclear**
- 2. De-central and domestic energy supply**
- 3. Different local resources at different generation cost**
- 4. Specific investment structure – high share of initially fixed cost**
- 5. Specific barriers as newcomer technology – new capacities to be created & integration required**



## The responses: Successful principles

- 1. Close price gap:**  
Successful promotion schemes offer sufficient compensation to market distortions (sufficient and guaranteed price or premium).
- 2. Make benefits of de-central energy supply become effective:**  
Local population to benefit directly from projects by high level of involvement, investment opportunities/community ownership in order to obtain local acceptance  
Create opportunities for successful small and medium sized enterprises
- 3. Provide sufficient investment security and focus on equipment market**  
Competition on equipment side by bigger number of actors.
- 4. Provide an efficient promotion scheme including site efficiency**  
Differentiated remuneration schemes.
- 5. Provide access to market arena for newcomers and independent power producers:** Access to grid, smooth administrative procedures, human and industrial capacities, R&D funds



## Successful principles and promotion schemes

	<b>Tradable certificate schemes</b>	<b>Guaranteed price schemes</b>
<b>Closed price gap</b>	Achievable	Achievable
<b>De-central benefits to be effective</b>	Difficult to achieve	Easy to achieve
<b>Investment security/focus on equipment market</b>	Very difficult to achieve	Easy to achieve
<b>Site efficiency</b>	Difficult to achieve	Easy to achieve
<b>New actors' access to market</b>	Difficult to achieve	Easy to achieve



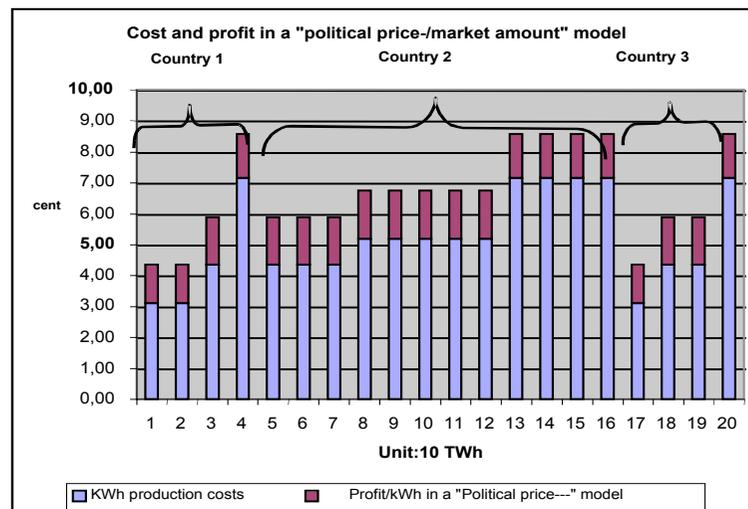
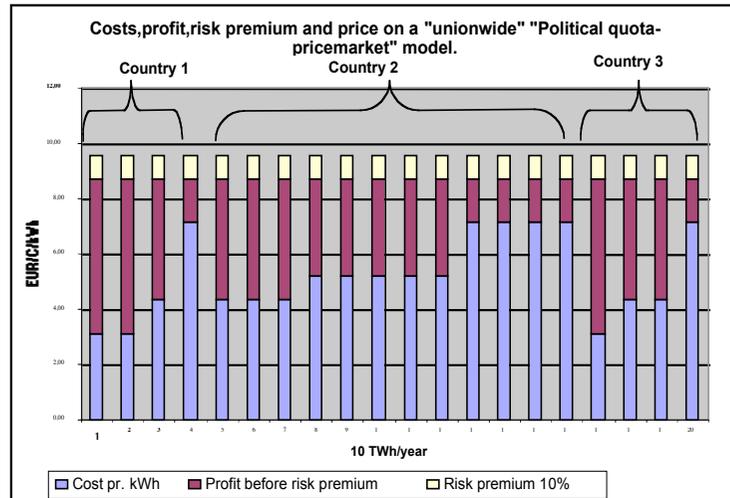
## Effectiveness: Installation figures

**Additional installations under guaranteed price schemes in EU in 2004:**

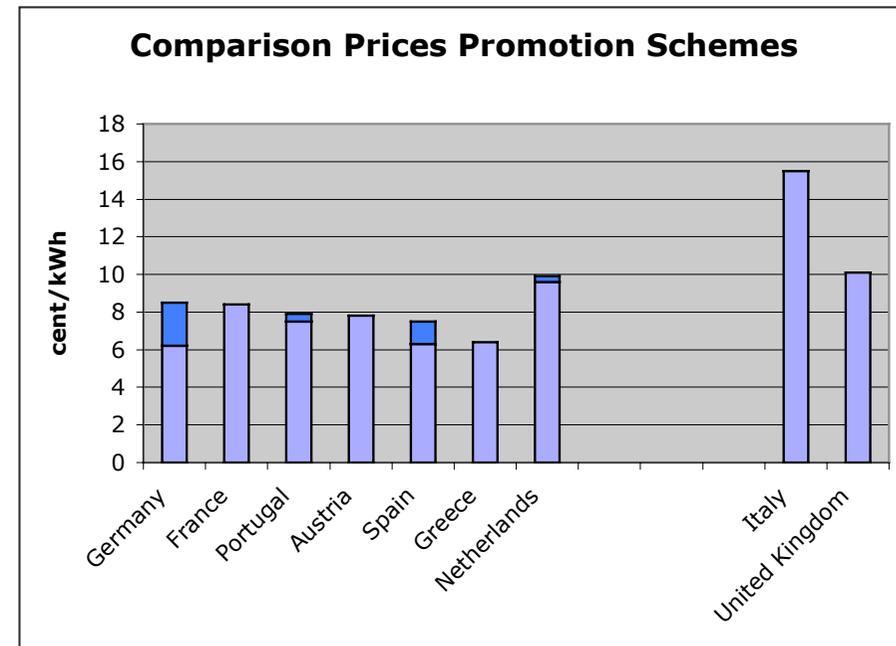
**5000 MW out of 5900 MW = 85 %**

## Efficiency: Overall cost under different promotion schemes

Frede Hvelplund, Aalborg University, 2001:



Wind energy prices 2004:





## **EU harmonisation to be based on successful principles?**

### **Should/could the EU harmonisation be based on the most successful principles?**

1. Is rapid renewable energy development the aim?
2. Are there (external) strategic arguments against implementation of successful principles? (impact on free market, decision making procedures, etc.)



## **EU harmonisation to be based on successful principles?**

### **Conclusion – proposal for a joint approach**

1. EU harmonisation, if at all, must be based on EU-wide feed-in scheme
2. Detailed proposal for EU feed-in directive for renewable energy to be worked out (could be based in principle on successful national schemes)
3. Least-best option: EU-wide quota/certificate scheme has to be avoided



**Thank you very much for your attention!**