20 % renewable energy by 2020

Challenges for the Renewable Energy sector in Europe – adressing the north sea region

Oliver Schaefer, Policy Director

European Renewable Energy Council

EREC – European Renewable Energy Council

Umbrella organisation representing all RES sectors:

✓ **AEBIOM**	European Biomass Association
✓ **EBIO**	European Bioethanol Industry 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

Associate members:

✓ **EU-OEA**	European Ocean Energy Association
✓ **EREF**	European Renewable Energy Federation
✓ **ESTELA**	European Solar Thermal Electricity Association

Representation of European RES industry, trade & research

EU Renewable Energy industry

- ✓ **Europe is global leader in RES development**
- ✓ **350.000 jobs in Europe already now**
- ✓ **Annual turnover of 40 billion € already now**
- ✓ **Innovative Business Sector**
- ✓ **Economic growth and regional development**

Renewable energy – 2005 baseline year

- About 14% of all EU electricity supply is generated by renewable energy sources
- About 11% of heat demand is supplied by renewable energy sources
- About 1% of transport fuel demand by renewable energy sources

2005 Total: 8,5 %

2006 Total: 9,2%

EU Energy Policy

From

Coal&Steel

and

Nuclear

To

Security of Supply

Competitiveness

Sustainability

A unique opportunity!

Renewables have predictable cost and by that increase Europe's competitiveness

Renewables reduce import dependency

Renewables offer a carbon-free energy supply

Renewables create jobs in Europe

A change in perception and policy

EREC

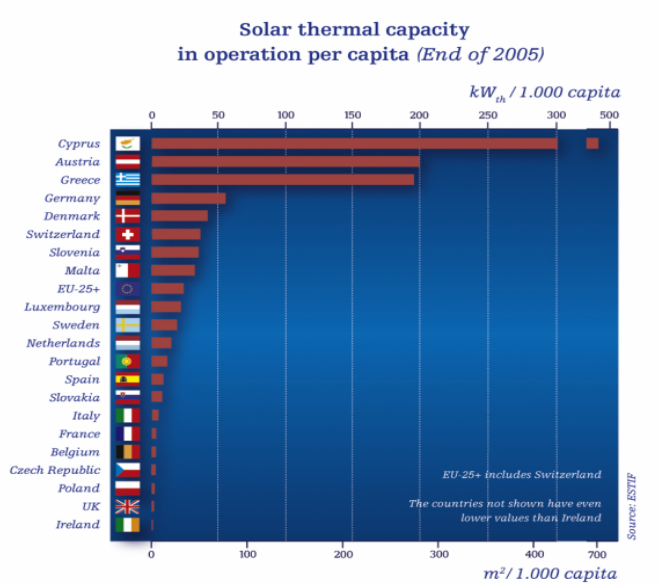
Jack,
age 6,
UK.

EREC

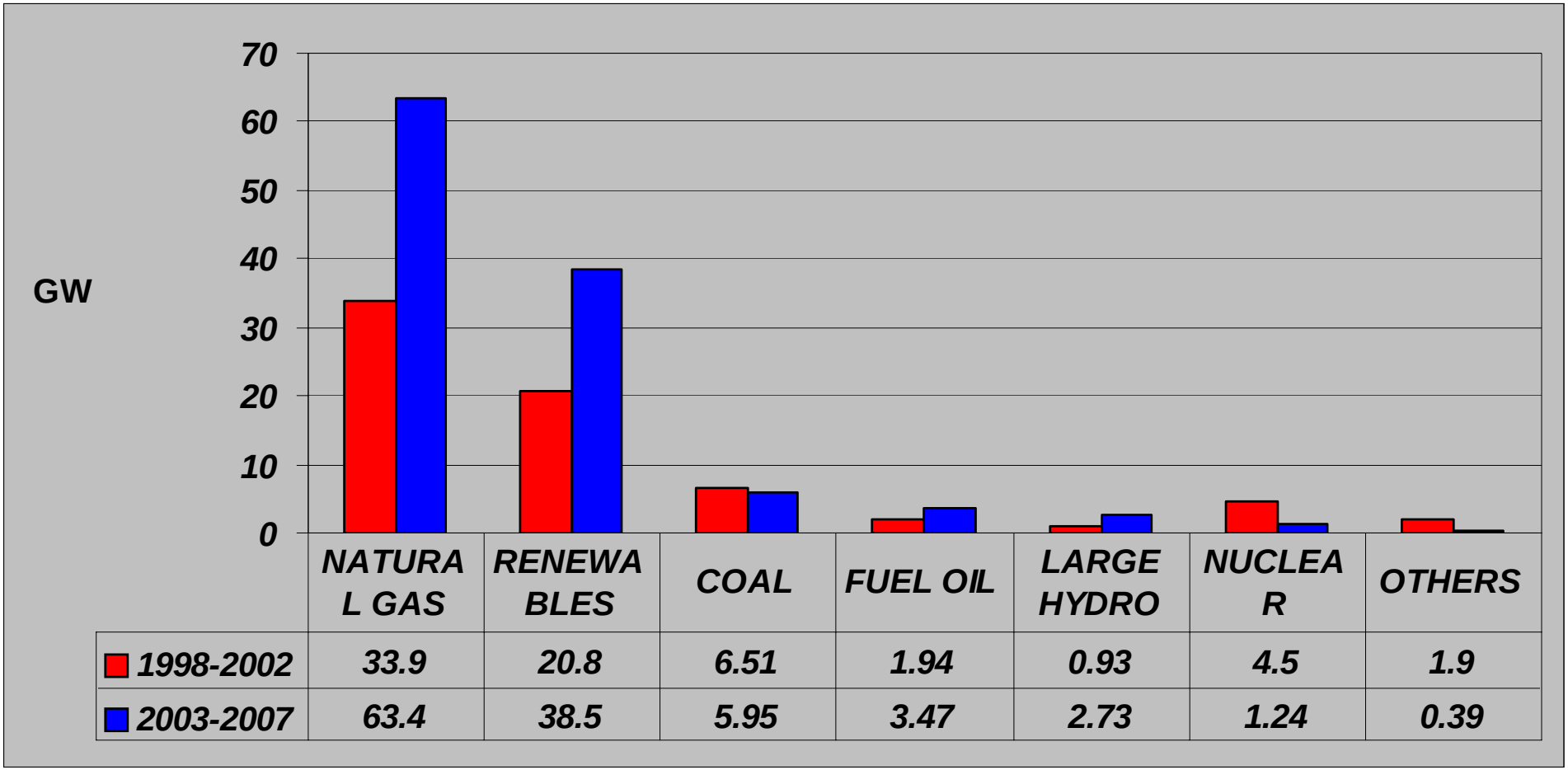
Alexandros,
age 7,
Cyprus.

Policy is making the change

- **Uneven growth among EU Member States which cannot be explained by distribution of natural resources!**
  - Why should Austria‘s solar capacity per capita be 30 times larger than Italy‘s?
  - Why are 70 % of all geothermal heat pumps installed in 3 EU countries?
  - Why has biomass heating taken off in Austria and the Nordic countries and other countries only follow slowly?



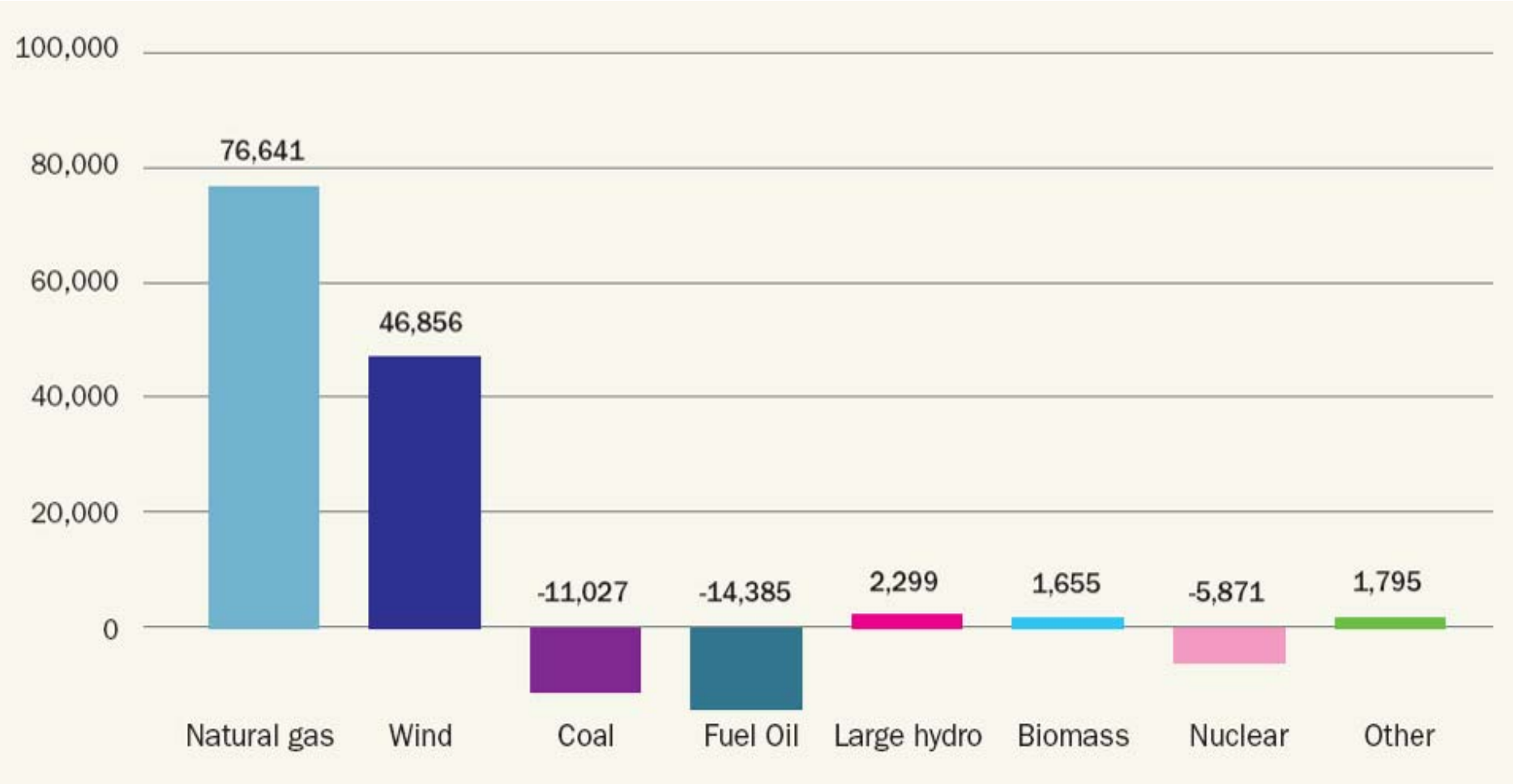
New Capacity Installed by Fuel in EU27 (1998-2007)



	NATURAL GAS	RENEWABLES	COAL	FUEL OIL	LARGE HYDRO	NUCLEAR	OTHERS
1998-2002	33.9	20.8	6.51	1.94	0.93	4.5	1.9
2003-2007	63.4	38.5	5.95	3.47	2.73	1.24	0.39

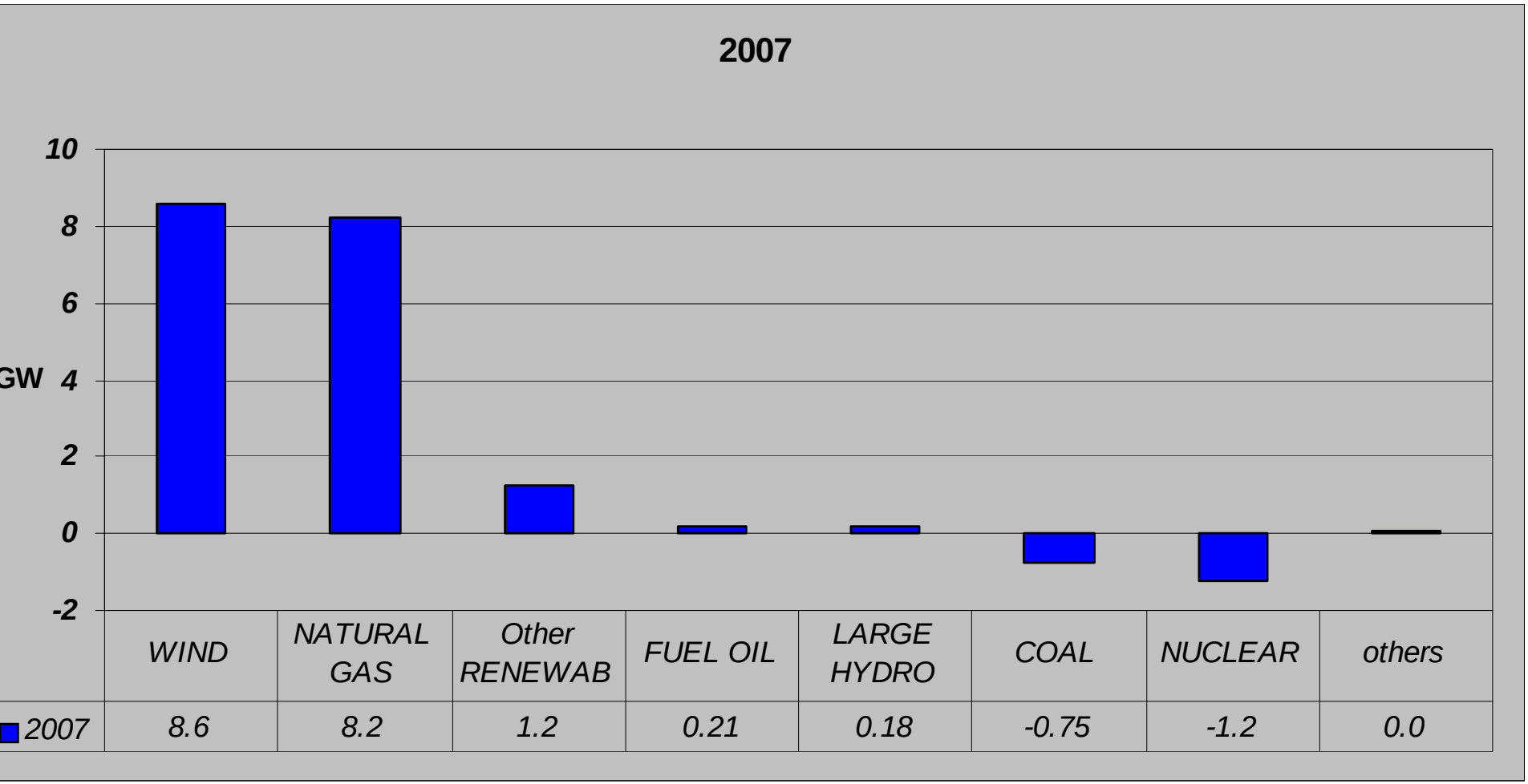
Source: Platts, EWEA

Net Increase/Decrease in Power Capacity EU 2000-2007 (in MW)



Source: EWEA and Platts PowerVision

Net Increase/Decrease in Power Capacity EU 2007 (in MW)



	WIND	NATURAL GAS	Other RENEWAB	FUEL OIL	LARGE HYDRO	COAL	NUCLEAR	others
2007	8.6	8.2	1.2	0.21	0.18	-0.75	-1.2	0.0

The Commission Proposal

1. Sets mandatory national targets for renewable energy shares, including 10% biofuels share, in 2020 (*Articles 3 and 5)*

2. Requires national action plans *(Article 4)*

3. Standardises “guarantees of origin” (certifying the renewable origin of electricity or heat) and enables the transfer of these to provide flexibility to Member States *(Articles 6, 7, 8, 9 & 10)*

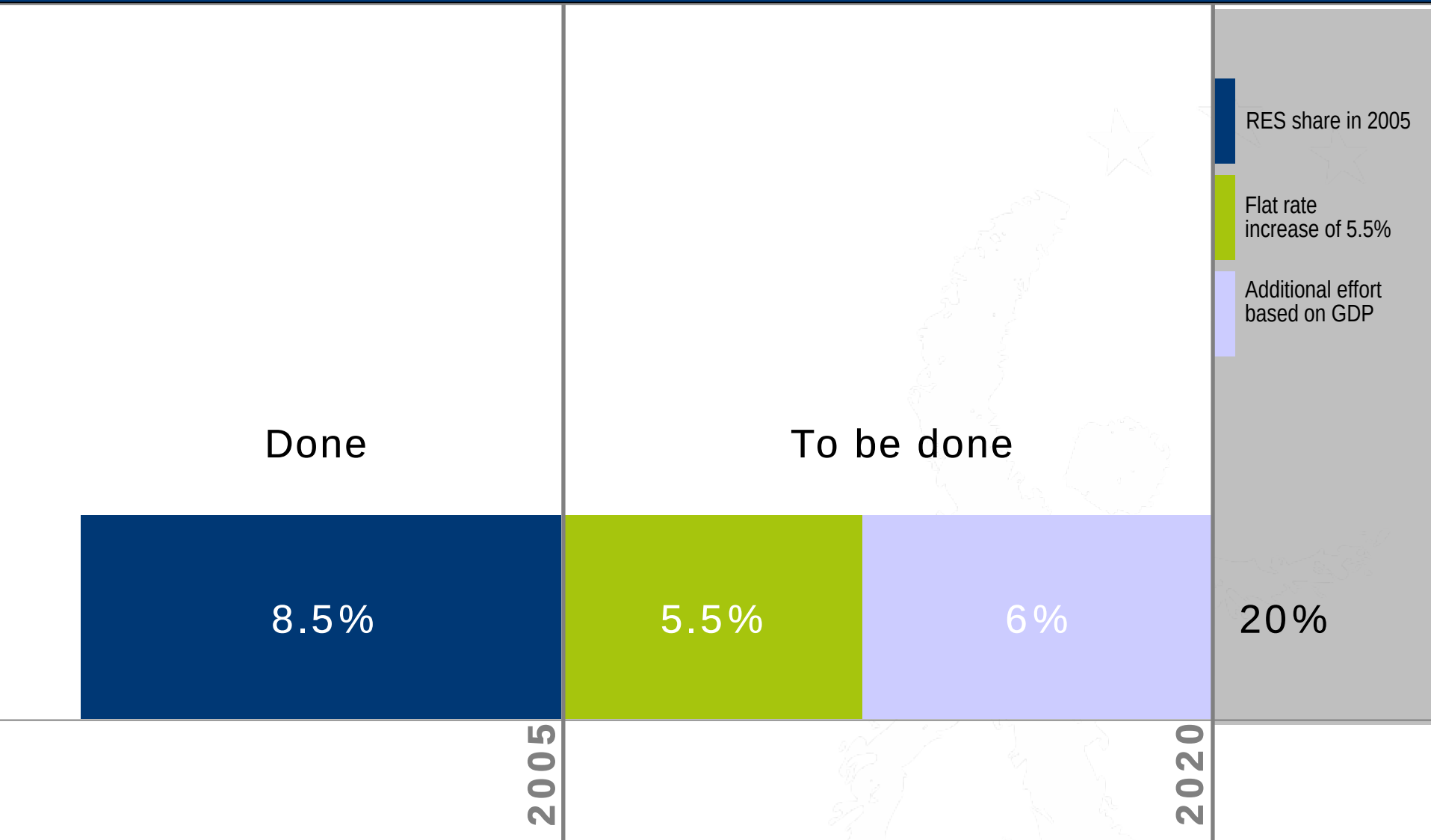
4. Requires reduction of administrative and regulatory barriers to the growth of renewable energy *(Article 12),* improvements in provision of information and training *(Article 13)* and improves renewables’ access to the electricity grid *(Article 14)*

5. Creates a sustainability regime for biofuels *(Articles 15-18)*

Directorate-General for Energy and Transport

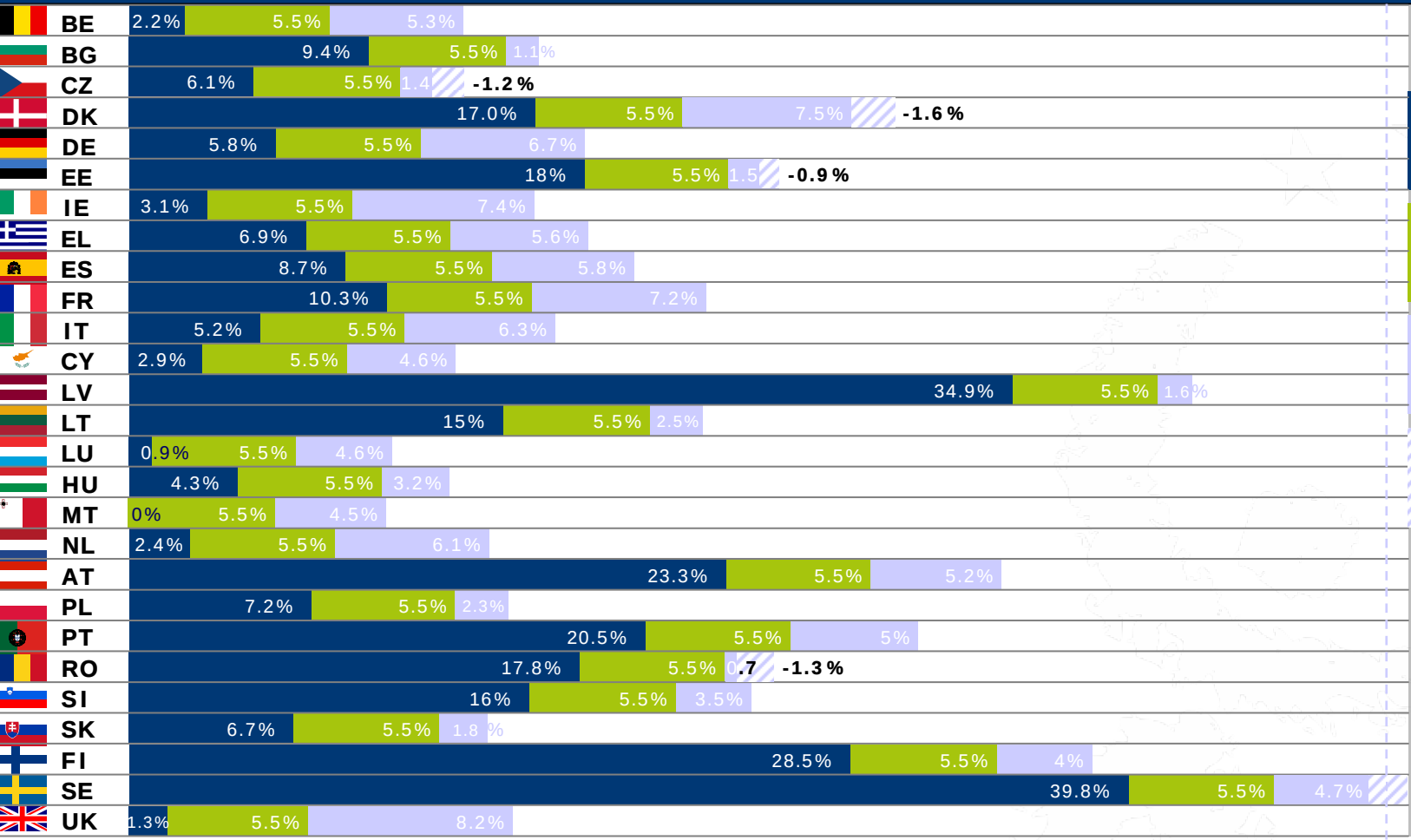
Climate Action
Energy for a Changing World

EU-27 efforts in Renewables
Policy targets



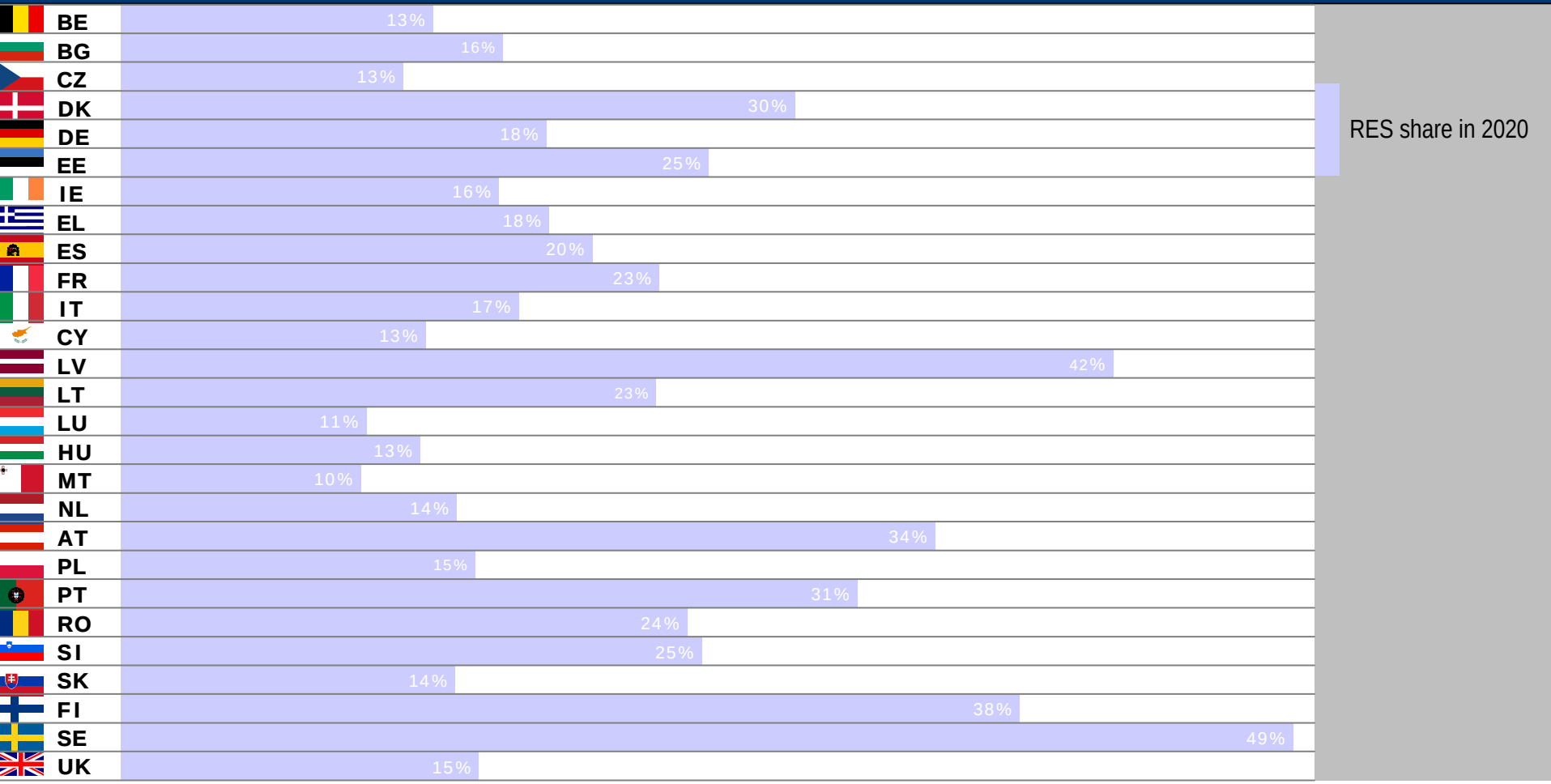
Climate Action
Energy for a Changing World

EU-27 efforts in Renewables
Early starter bonus and cap



Climate Action
Energy for a Changing World

EU-27 efforts in Renewables
RES share in 2020



EU-27

Timing is crucial

The 20% by 2020 EU target will only be met if legislation is adopted timely.

The Directive should be in force as soon as possible in order to avoid market instability around 2010 (ending of RES-E & Biofuels Directives)

Timely adoption of the energy-climate package is crucial in view of the end of the mandate of the European Commission and elections of the European Parliament in June 2009.

RES industry targets 2020

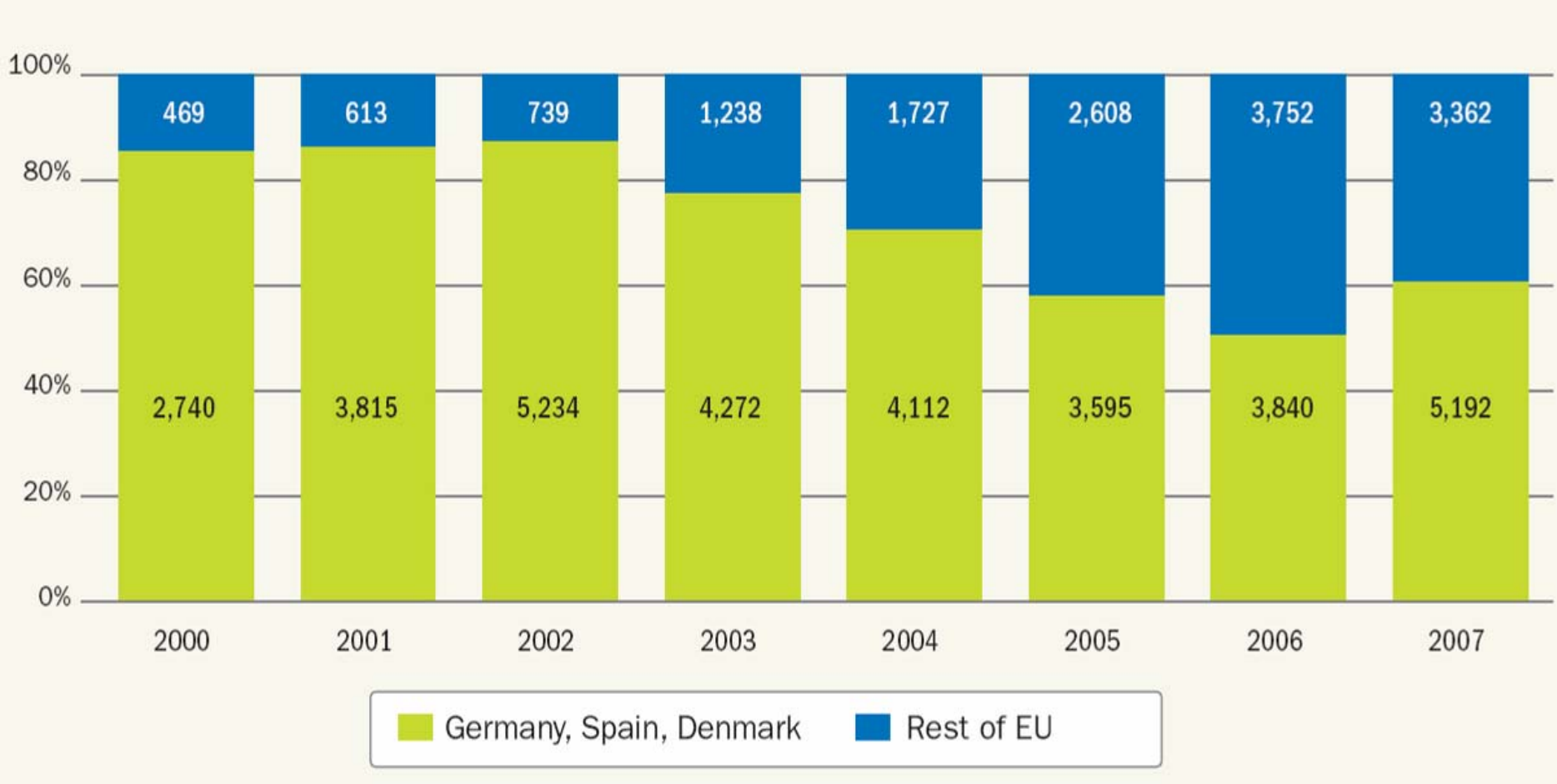
- **The contribution of RES to electricity production will be around 35 % in 2020**

- **The contribution of RES to heat production will be around 25 % in 2020.**

- **The contribution of biofuels can be more than 10% in 2020.**

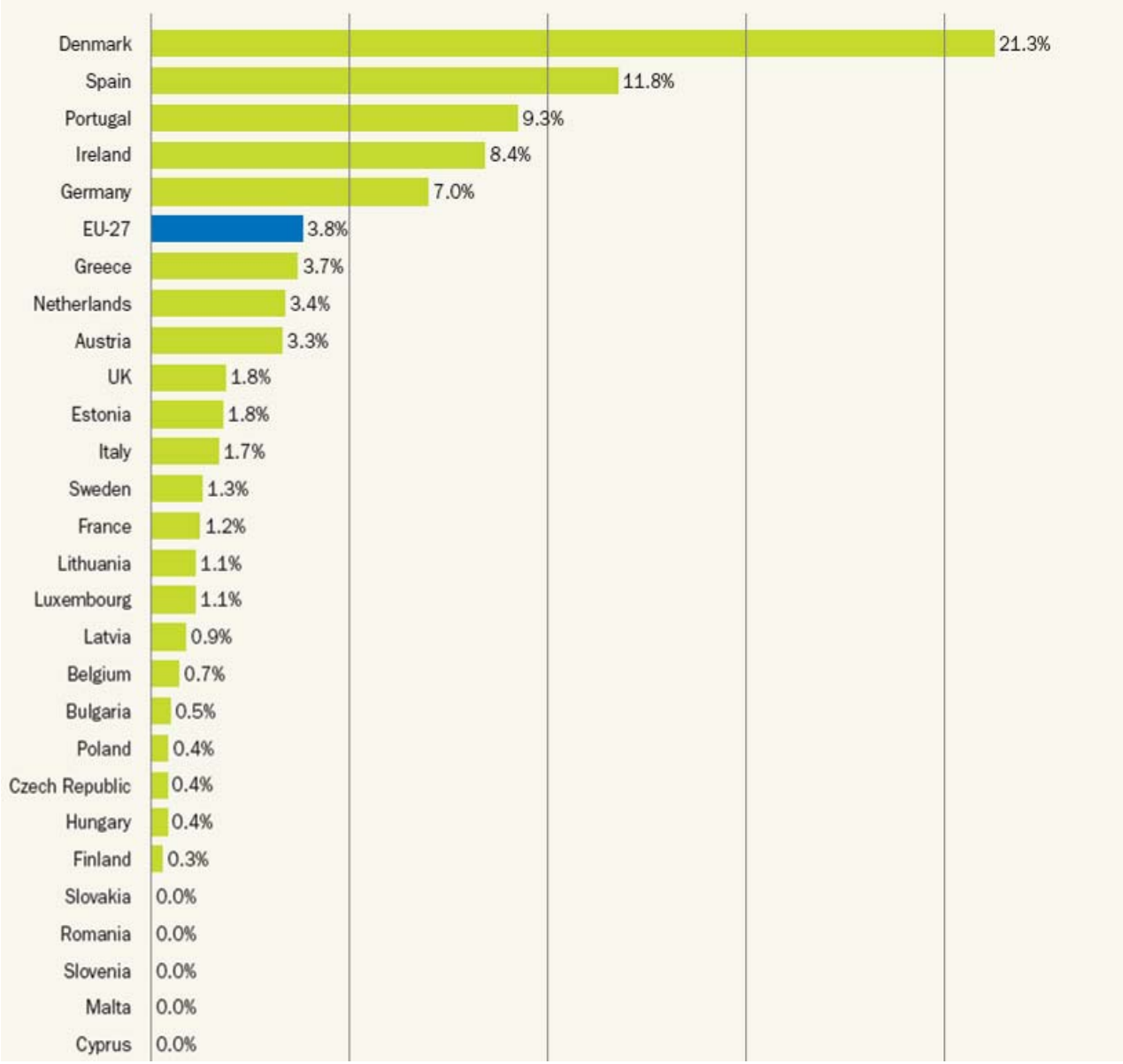
Total: 20 %

GERMANY, SPAIN AND DENMARK'S SHARE OF EU MARKET 2000-2007 (IN MW)



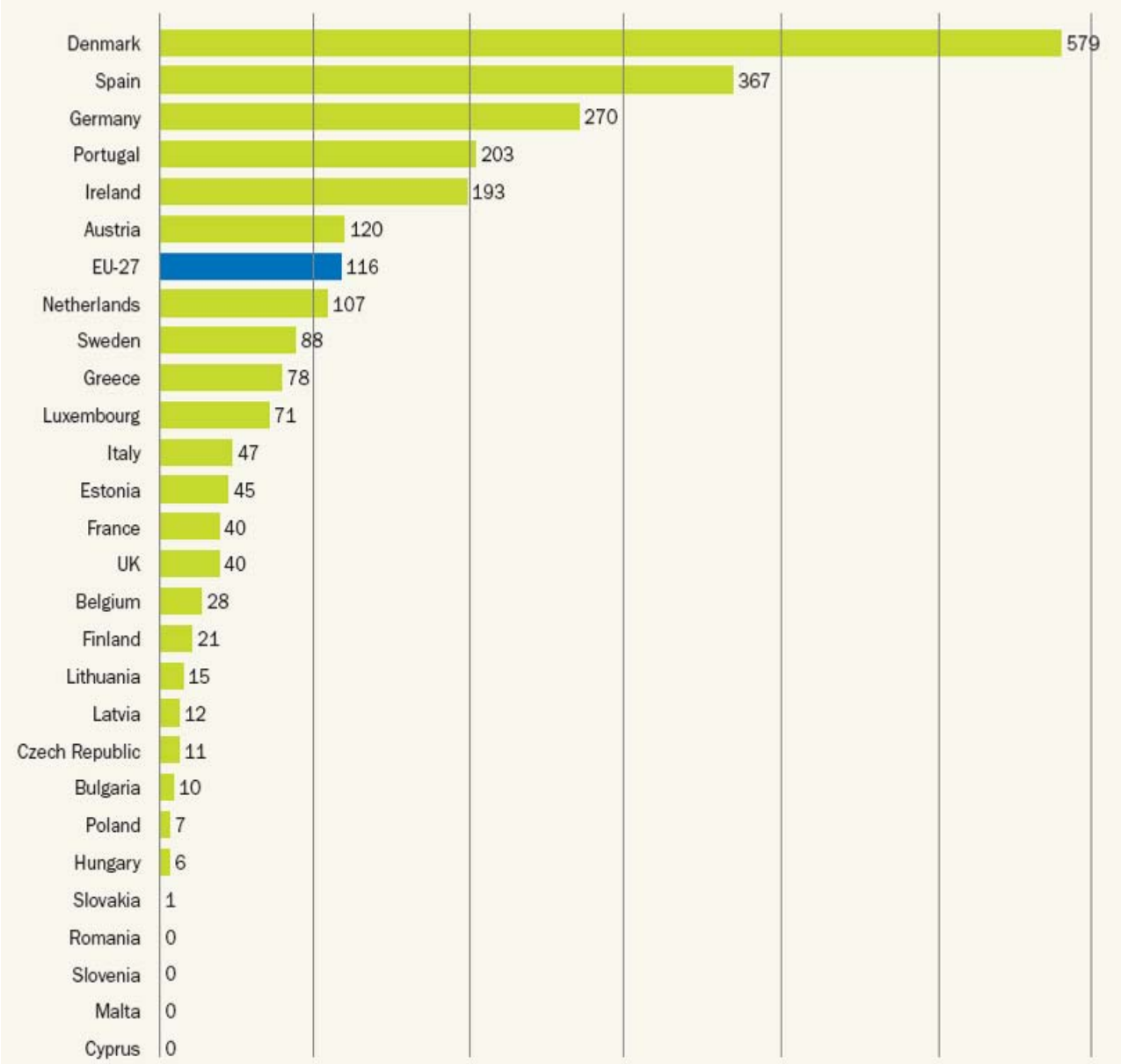
Source: EWEA

WIND POWER'S SHARE OF ELECTRICITY DEMAND



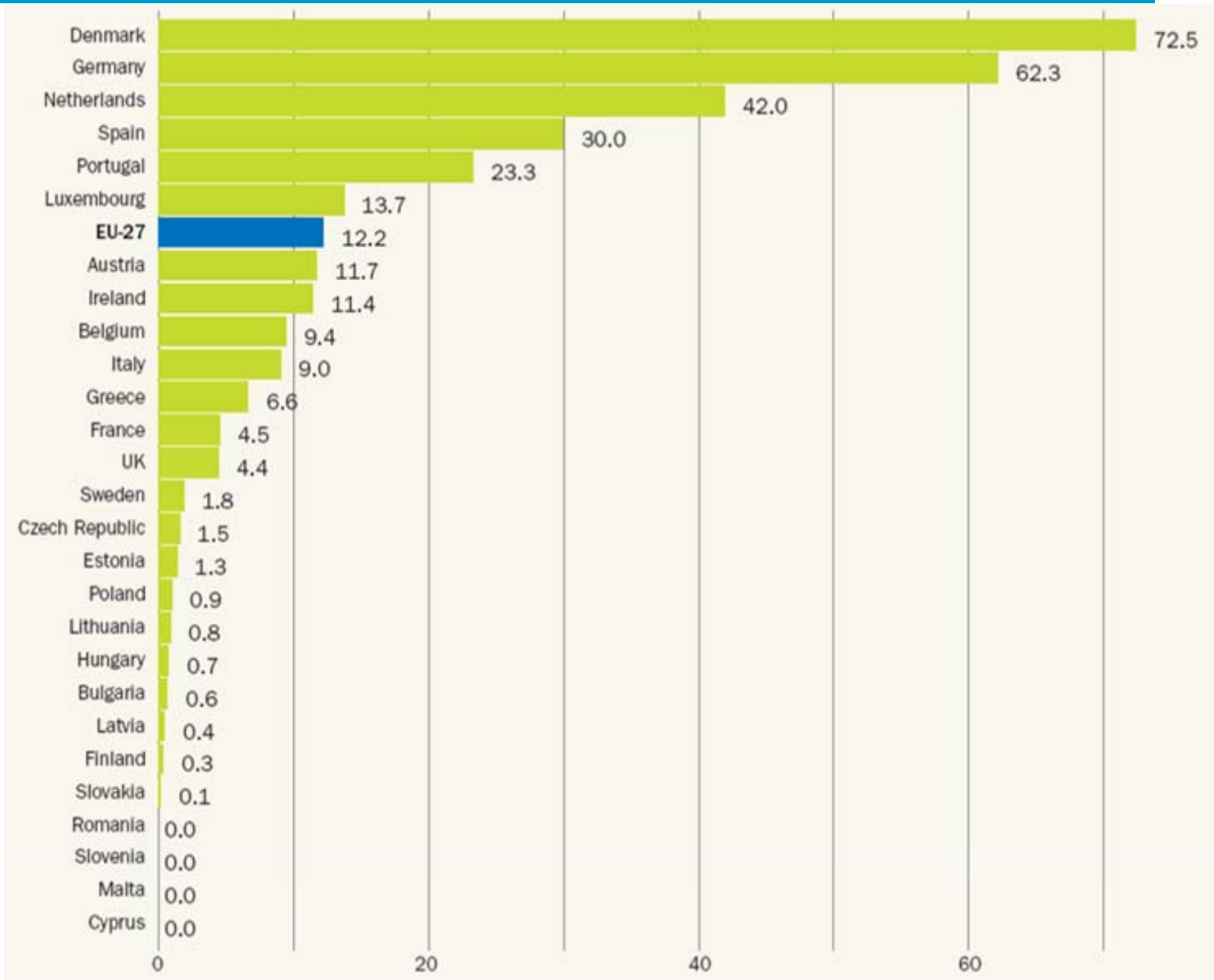
Source: EWEA

INSTALLED WIND CAPACITY – KW/1,000 PEOPLE



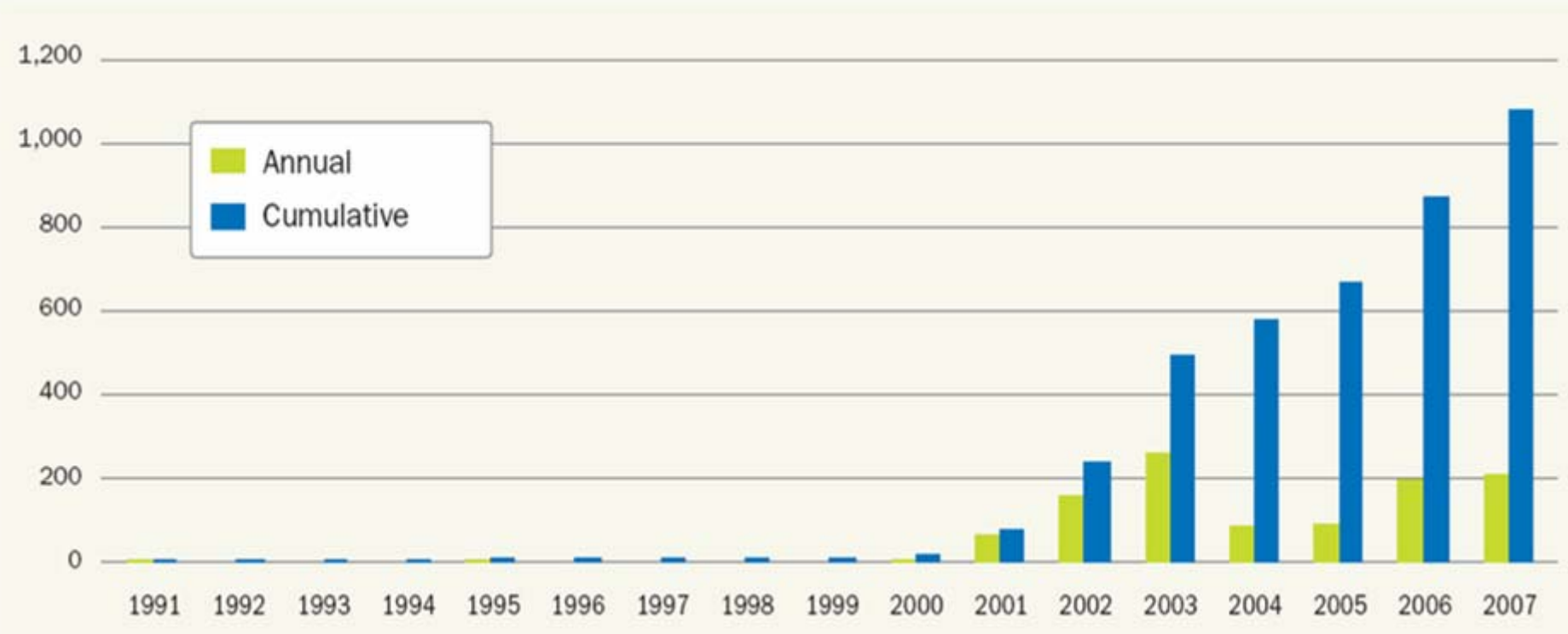
Source: EWEA

WIND INSTALLATION MW/1,000 KM²



Source: EWEA

OFFSHORE WIND IN THE EU (MW)



Source: EWEA

OFFSHORE WIND IN THE EU (MW)

Country	Total installed by end 2007	Installed in 2007
Denmark	409.15	0
United kingdom	404	100
Sweden	133.25	110
Netherlands	108	0
Ireland	25.2	0
TOTAL	1079.6	210

Source: EWEA

OFFSHORE WIND – THE CHALLENGE

Both in terms of offshore infrastructure and technology development, offshore wind energy should be seen as a strategic resource that Europe needs to develop if we are ever to achieve

- competitive electricity markets in Europe;
- reach a larger degree of energy independence;
- reduce risk exposure to unpredictable fuel prices;
- ensure low and predictable energy costs;
- while reducing the environmental impact of energy production.

THE EUROPEAN COMMISSION

"Wind could contribute 12% of EU electricity by 2020. One third of this will more than likely come from offshore installations"

(Commission's Energy Package 10 January 2007)

EU POLICY NEEDED TO REACH TARGETS

- **A renewable energy offshore policy for Europe, including offshore infrastructure (wind, tidal, wave)**
- **Grid extensions and upgrades financed by – ownership unbundled – TSOs (grids are natural monopolies)**
- **Removal of administrative barriers (one-stop-shop approach)**
- **Removal of grid access barriers including excessive technical requirements**
- **Increased cooperation on interconnectors**
- **Dramatic refocus of R&D spending, taking into account historic levels of funding**

OFFSHORE WIND IN NORTHERN EUROPE

EWEA
THE EUROPEAN WIND ENERGY ASSOCIATION

Operational offshore wind farms • ***Offshore wind projects to be built in 2008-2009***

Source: EWEA 2007 report - Delivering Offshore Wind Power in Europe

TURN THE CLIMATE AND ENERGY CHALLENGE INTO AN OPPORTUNITY IN THE 21ST CENTURY ENERGY BATTLE

EWEA
THE EUROPEAN WIND ENERGY ASSOCIATION

Follow a strategy of developing, deploying and exporting renewable energy technology to a world that, few years from now, cannot afford to live without it.

Environmental benefits

- With a renewable energy share of 20%, the equivalent figure would be 600-900 Mt CO_2. This is equal to a saving of about 12%-14% of total CO_2 emissions compared to 1990 levels.
- Combined with 20% efficiency by 2020 an additional saving of 780 Mt CO_2 by 2020 could be reached.

This together would be a saving of about 24% compared to 1990

Climate Change Mitigation Options to 2020

- To prevent the worst ravages of climate change, we must get global emissions to peak and begin to decline before 2020;
- According to the IPPC this will require emission reductions of at least 30% by 2020 from industrialized countries.
- The power sector is the largest single source of emissions
- The options for reducing emissions between now and 2020 in the power sector are: efficiency; fuel switching from coal to gas; and renewable energy
- Other technologies often discussed, such as carbon capture and storage and new nuclear may play a role in the future, but not a substantial role before 2020.

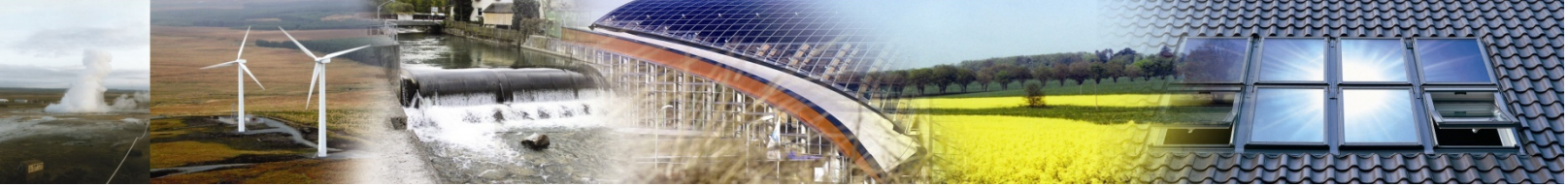
Security of Supply and Competitiveness

- 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

Turn the energy challenge into an opportunity for Europe

- 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.
- The economic future of Europe can be planned on the basis of known and predictable cost of energy, derived from indigenous energy sources free of all the security, political, economic and environmental disadvantages associated with the current energy supply structure.
- 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.



EU Presidency Renewable Energy Policy Forum

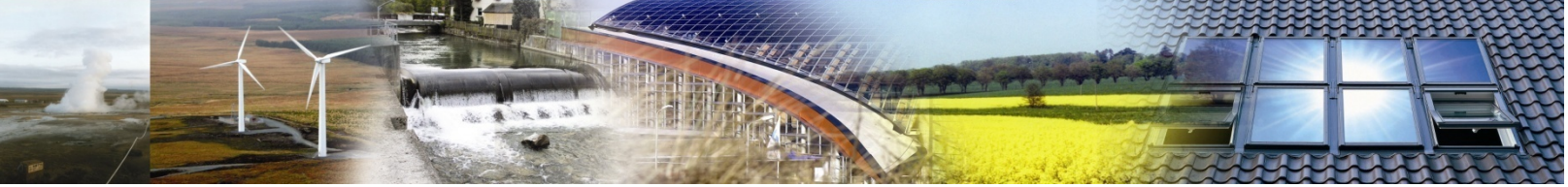
17 November 2008, Paris

ADEME
Agence de l'Environnement et de la Maîtrise de l'Energie

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE
Ministère de l'Écologie, de l'Énergie, du Développement durable et de l'Aménagement du territoire

Further information: www.erec.org

énergie : changeons d'ère !
SEMAINE DES ÉNERGIES RENOUVELABLES, DU BÂTIMENT ET DE LA MAÎTRISE DE LA DEMANDE D'ÉNERGIE



Further information:

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