



# Overview of the EU Policies in Energy and Energy Research

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## Structure of the Presentation

- + Introduction
- + A Few Facts
- + Energy Policies
- + Research Policy
- + Non-nuclear Energy Research



# Introduction 1/2

- ✚ Energy fuels the economic development.
  - ✚ Is de-coupling feasible ?
  - ✚ Energy intensities (energy usage / GDP) decrease with time.
  - ✚ However, energy consumption increases with time.
- > Energy usage must be sustainable.



## Introduction 2/2

- + Energy industries are capital-intensive.
  - + Energy investments have long lead-times and lives.
- > Energy policies must ensure a smooth transition to sustainability.



## Facts 1/2

### Current projections indicate that:

- + World energy consumption up 2% per annum to 2020.
- + World energy intensity down 1.4% per annum to 2020.
- + World dependence on fossil fuels still 90% by 2020.
- + Natural gas expected to grow rapidly in some regions.



## Facts 2/2

- ✦ **EU energy consumption up by 2.5%per annum to 2020.**
- ✦ **EU energy intensity down by 1.5%per annum to 2020.**
- ✦ **EU dependence on imported fuels up from 50% to over 65% by 2020.**
- ✦ **EU coal largest decrease, EU natural gas largest increase.**



# Energy policies 1/5

## Climate change

- ✚ EU set to decrease its GHG emission by 8% in 2008-2012 compared to 1990 under the Kyoto Protocol.
- ✚ Burden sharing agreement between Member States.
- ✚ On track so far, but target likely to be missed.
- ✚ European Climate Change Programme to identify most promising and cheapest routes.



# Energy Policies 2/5

## Security of Supply

- † Green paper has been issued.
- † Diversification is the key.
- † No single option is the solution.
- † No option should be ruled out.



## Development of RES

- ✚ Directive to go from 6% to 12% by 2010 (and share in electricity from 14% to 22% by 2010).
- ✚ Proposed directive to promote biofuels (2% by 2005, 5.75% by 2010).



# Energy Policies 4/5

## Energy Efficiency

- ✚ Aims at de-coupling energy use from economic growth.
- ✚ One of the elements of security of supply.
- ✚ Communication calling for a 18% improvement for 1995 to 2010.
- ✚ Proposal for a directive on CHP.



# Energy Policies 5/5

## Integration/Opening of Energy Markets

- ✦ On-going process.
- ✦ Framework for other policies.
- ✦ Communication in 2001 on how to complete the process.
- ✦ Can have some adverse effects on other policies.



# Research Policy 1/2

## European Research Area

- ✦ EU research is too fragmented.
- ✦ 1.9% of GDP versus 2.6 for US and 2.9 for Japan
- ✦ EU exploitation of R&D results is sometimes inadequate.



# Research Policy 2/2

## ERA

### + **New support instruments:**

- *NoEs*
- *IPs*

### + **Concentration on selected priority topics:**

- *Including sustainable energy systems, transport and the environment.*

### + **Co-ordination of Member States activities:**

- *Art. 169*
- *Bloc III*



# Non-nuclear Energy Research 1/2

## Short Term

- ✚ **Clean energy, in particular renewable energy sources and their integration in the energy system, including storage, distribution and use.**
- ✚ **Energy savings and energy efficiency, including those to be achieved through the use of renewable raw materials.**
- ✚ **Alternative motor fuels.**



# Non-nuclear Energy Research 2/2

## Long Term

- ✦ Fuel cells, including their applications.
- ✦ New technologies for energy carriers/transport and storage, in particular hydrogen.
- ✦ New and advanced concepts in renewable energy technologies, in particular biomass and photovoltaics.
- ✦ Capture and sequestration of CO<sub>2</sub> associated with cleaner fossil fuel plants.



# Sources

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- † ECCP Report, June 2001, EC DG Environment.
- † COM (2000) 6 - Towards a European Research Area.
- † Decision no 2002/xxx/ec of the European parliament and of the Council concerning the sixth framework programme of the European community for research, technological development and demonstration activities, contributing to the creation of the European research area and to innovation (2002-2006).
- † FP6 – Proposal for the specific programmes, EC DG RTD