



Towards
a low carbon
future

Directorate-General
for Energy
and Transport

- **European Strategic Energy Technology Plan (SET-Plan)**



WEC 2008, 6 February 2008
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Deputy Director General for Energy

● Context - Energy and climate policy

- Energy and climate change are intimately linked
- Business as usual is not sustainable
 - » Dependency is increasing
 - » GHG emission are increasing

POLICY MEASURES

- increasing EU energy efficiency
- increasing renewable energy use
- enabling clean hydrocarbons
- strengthening the EU's carbon market,
- forging an open and competitive internal energy market

TARGETS

- By 2020: 20 – 20 – 20
- By 2050: 60 to 80



● Why a SET-Plan? (1)

Technology is vital to achieve our policy objectives

Today we are falling short:

- **not on a pathway to meet our policy objectives**
- **lack of innovation drivers for the industry**
- **insufficient energy research budgets in the EU**

Intrinsic weakness in energy innovation:

- **long lead times, incumbent technologies, system inertia**
- **no natural market appetite for new energy technologies**
- **social acceptance issues and up-front integration costs**



● Why a SET-Plan? (2)

Europe should lead the world:

- growing international competition
- MSs working alone will struggle
- mastery of technology vital to competitiveness

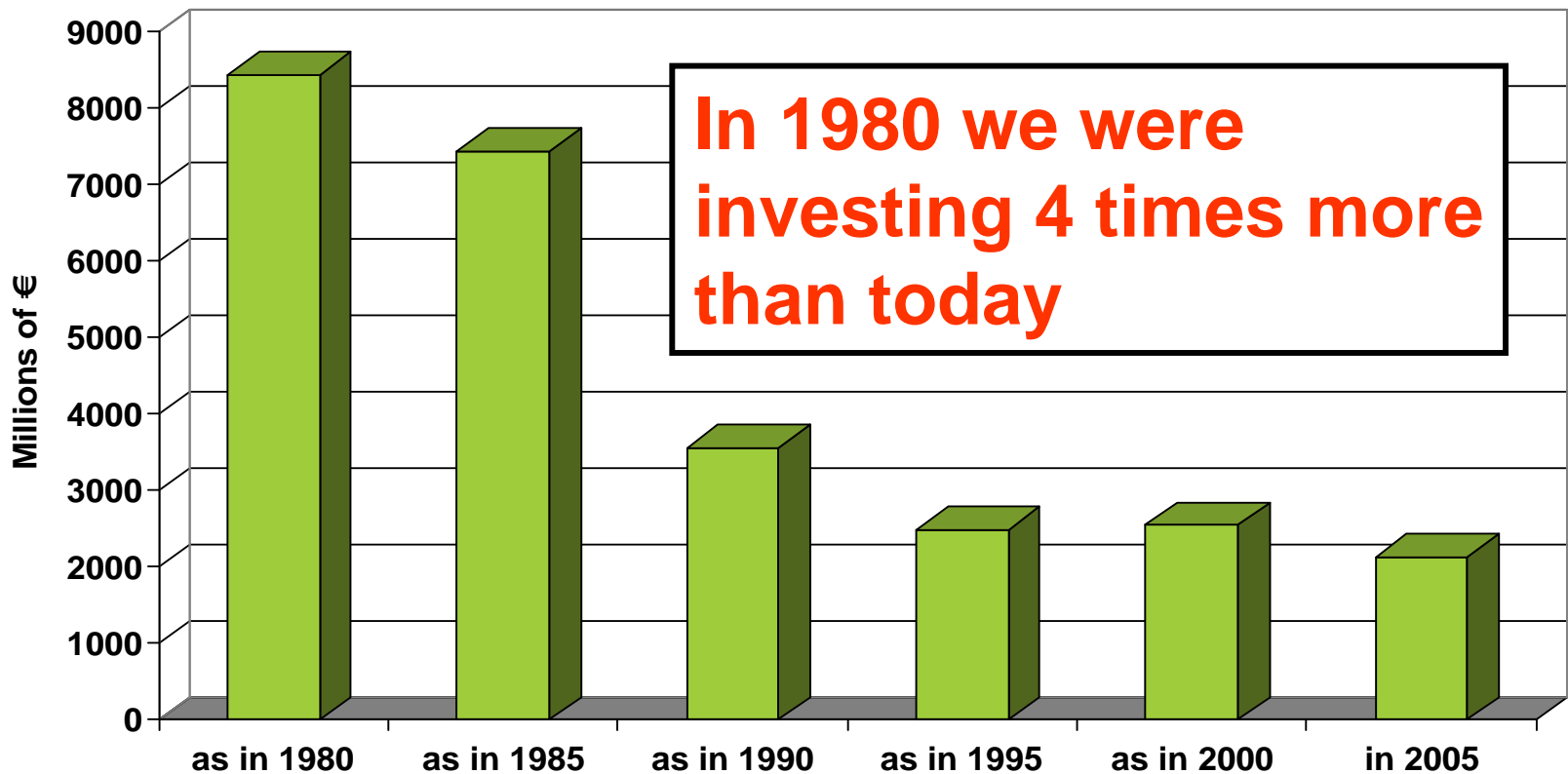
Time is of the essence:

- decisions taken now will have lasting consequences
- cost of inaction will be much higher in the long run

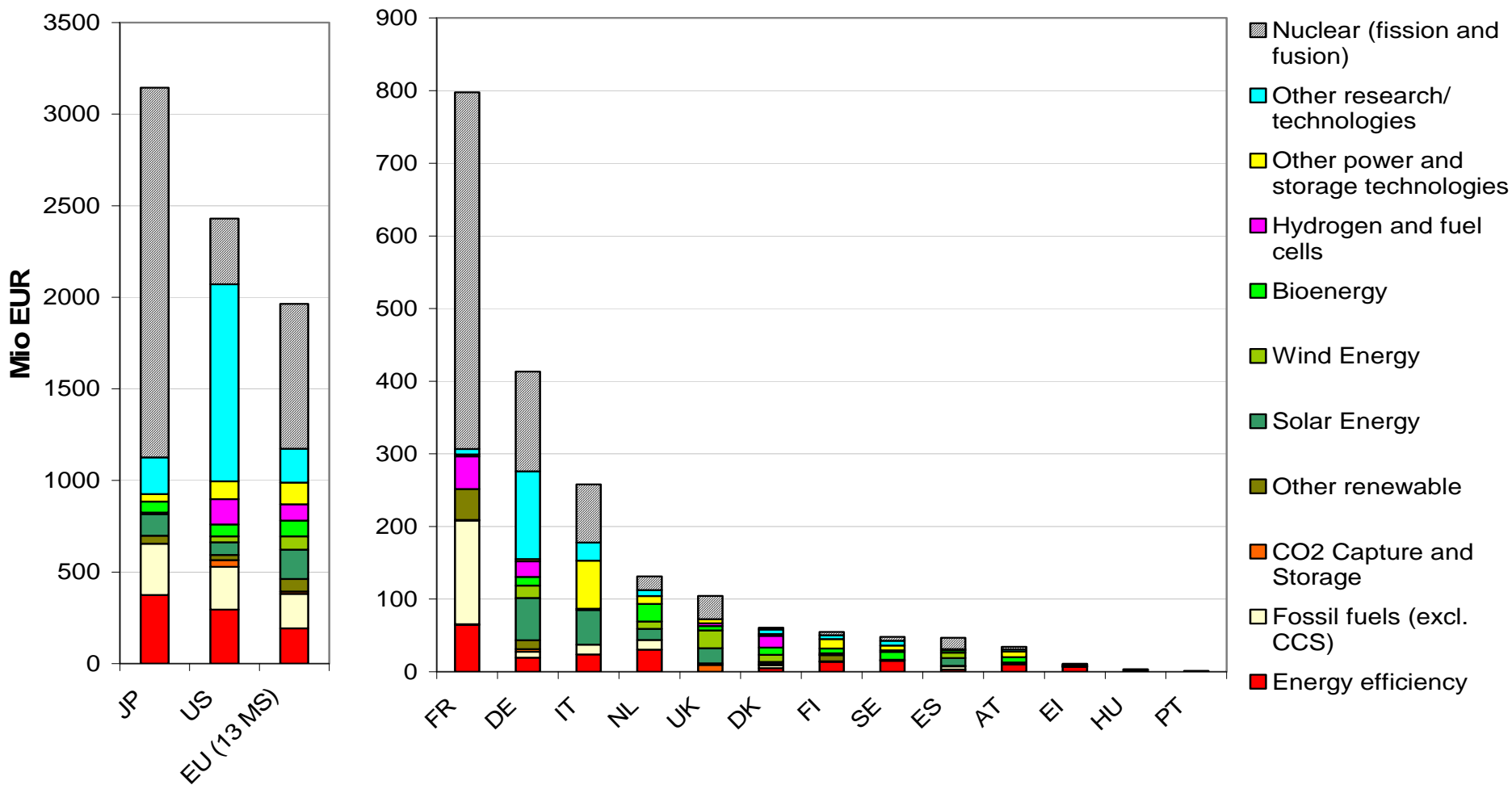
We need to use the ambition and the targets of the Energy Policy for Europe to create a new European policy for energy technology



- **Public energy RTD investment in the EU in 2005 if we were investing as in ...**



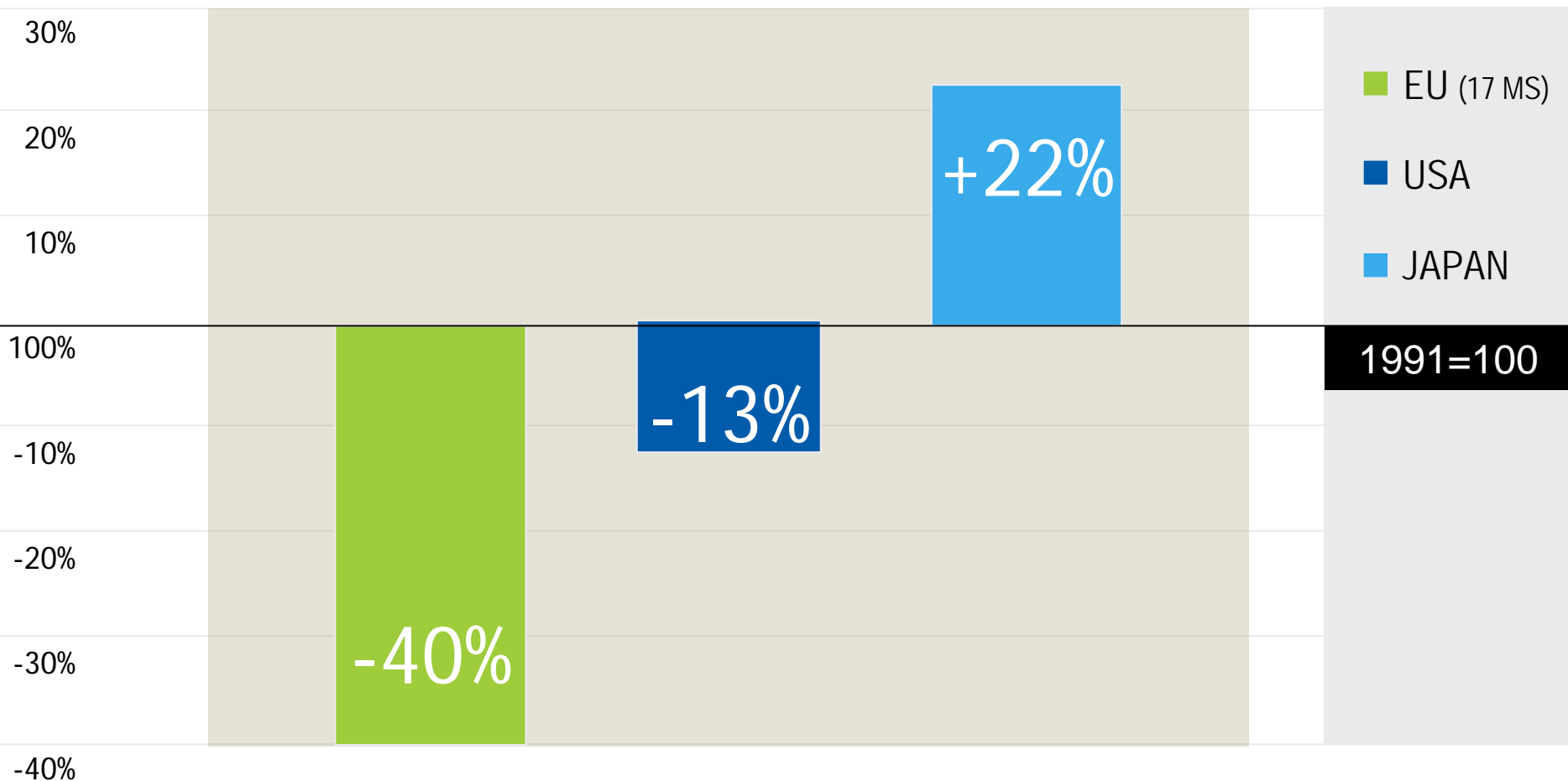
Public energy R&D expenditure in some EU Member States, Japan and USA by thematic area in 2005



2005

Source: International Energy Agency (IEA)

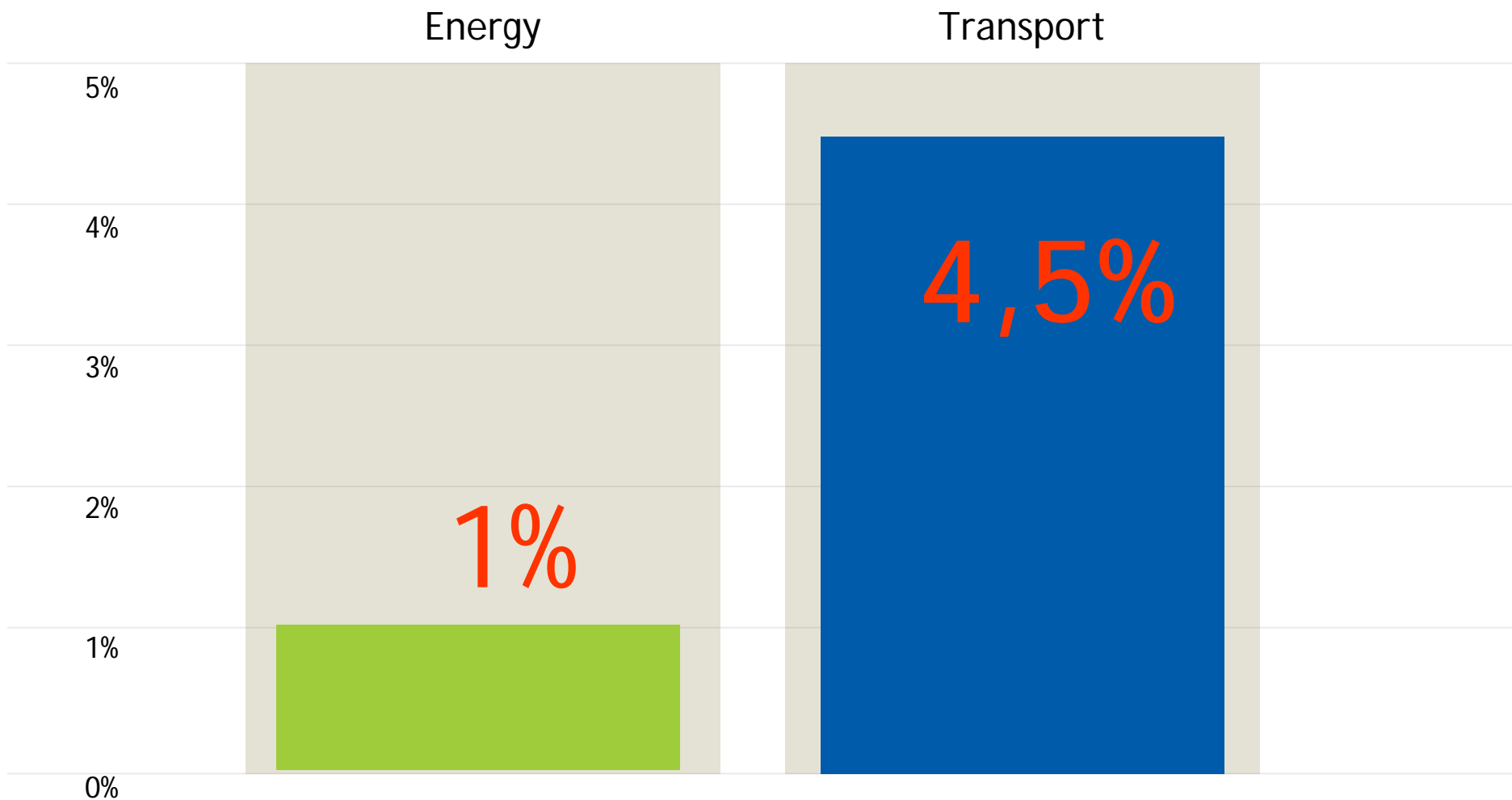
● Evolution of public energy R&D EU Member States, the USA and Japan 1991-2005



2005

Source: International Energy Agency (IEA) and own calculations

● EU industry investments in R&D



● **The Community as enabler**

Pooling of resources and sharing of risks

Strategic planning for technology and energy system

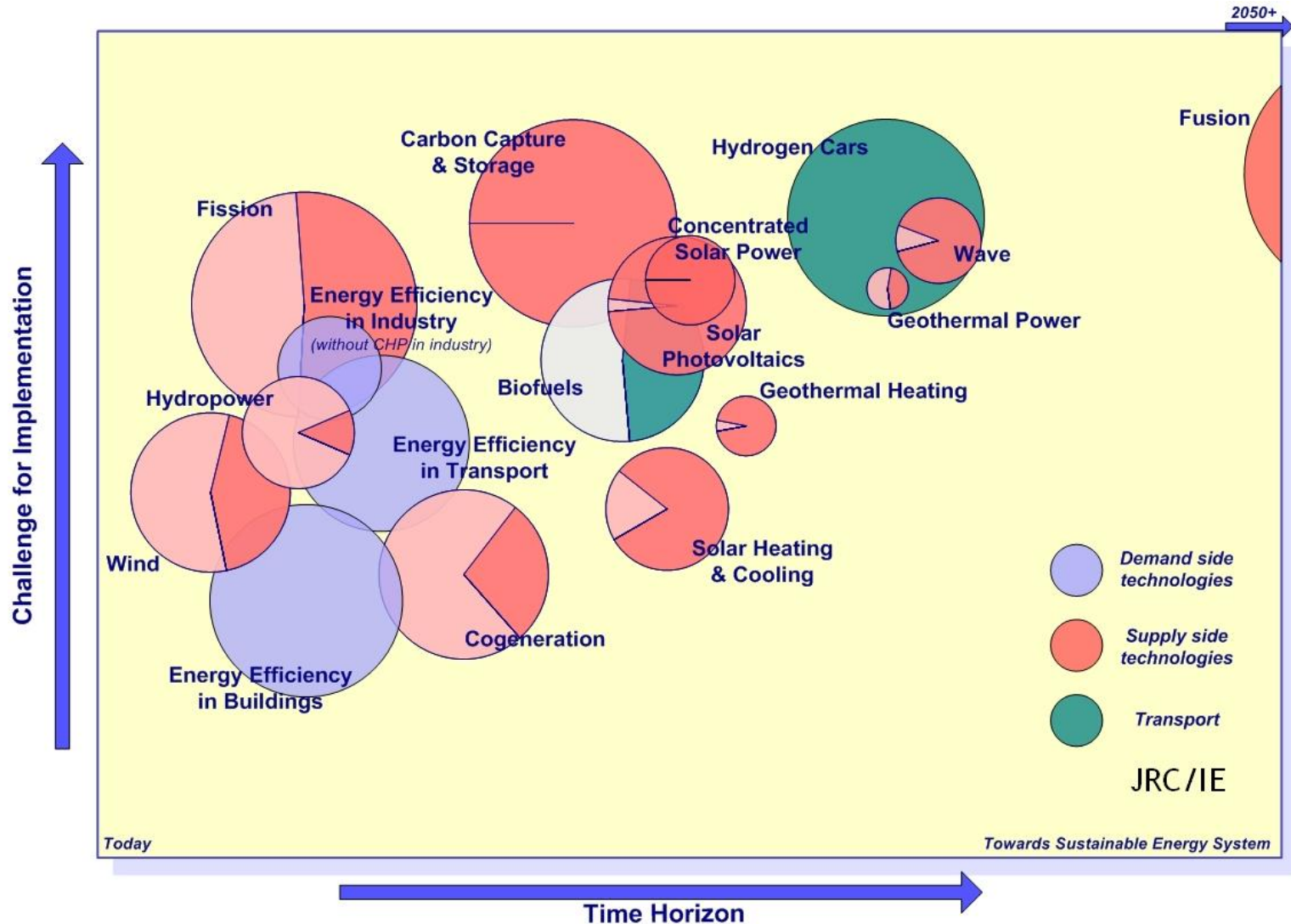
Regular and reliable data and information

Coherence and critical mass in international cooperation

Address common problems and non-technological barriers



● Technology Map for the SET-Plan



The SET-Plan (1)

Measures

- **Joint strategic planning** – Steering group + Information System
- **Effective implementation:**
 - » **European Industrial Initiatives:** strategic technology alliances.
 - » **European Energy Research Alliance**
 - » **Trans-European Energy Networks and Systems of the Future** – Transition planning
- **Increase in resources**, both financial and human.
- Reinforce **international cooperation**



● The SET-Plan (2)

Joint strategic planning

- Need for European governance
- Steering Group on Strategic Energy Technologies
- Information system
 - » Technology Map (Which tech? Potentials? Impacts? Barriers?)
 - » Capacities Map (How does what? and Internationally?)
 - » Key Performance Indicators (KPI) for Initiatives/Sectors
- **Energy Technology Summit** in the first half of 2009: to take stock, to engage industry and researchers, and internationally



The SET-Plan (3)

Effective implementation (1)

- **European Industrial Initiatives:** strategic technology alliances.
 - » **Wind**
 - » **Solar**
 - » **Bio-energy**
 - » **Smart, bi-directional Grid (incl. storage)**
 - » **Carbon Capture, Transport and Storage** (Directive and Communication last week)
 - » **Sustainable fission** (Generation IV)
 - » **Fusion** (on-going)
 - » **Fuel cells and hydrogen** (on-going)



● The SET-Plan (4)

Effective implementation (2)

- **European Energy Research Alliance**

- » Building on excellent research teams
- » Structured dialogue in 2008
- » From collaborating on projects towards implementing European programmes
- » Basic energy science, enabling and breakthrough technologies and advanced energy efficiency

- **Trans-European Energy Networks and Systems of the Future**

- » Multidisciplinary approach
- » Plan and develop future infrastructures and policies
- » E.g. Long distance electricity transmissions grids, CO₂ transport and storage and hydrogen distribution



● The SET-Plan (5)

Increase in resources both financial and human

- Better use of available resources through joint planning and initiatives
- Doubling the overall effort in the EU within three years – Lisbon
- *Communication on financing low carbon technologies* at the end of 2008
 - » Possibility of a new European mechanism/fund for the industrial-scale demonstration
- Human resources - vital



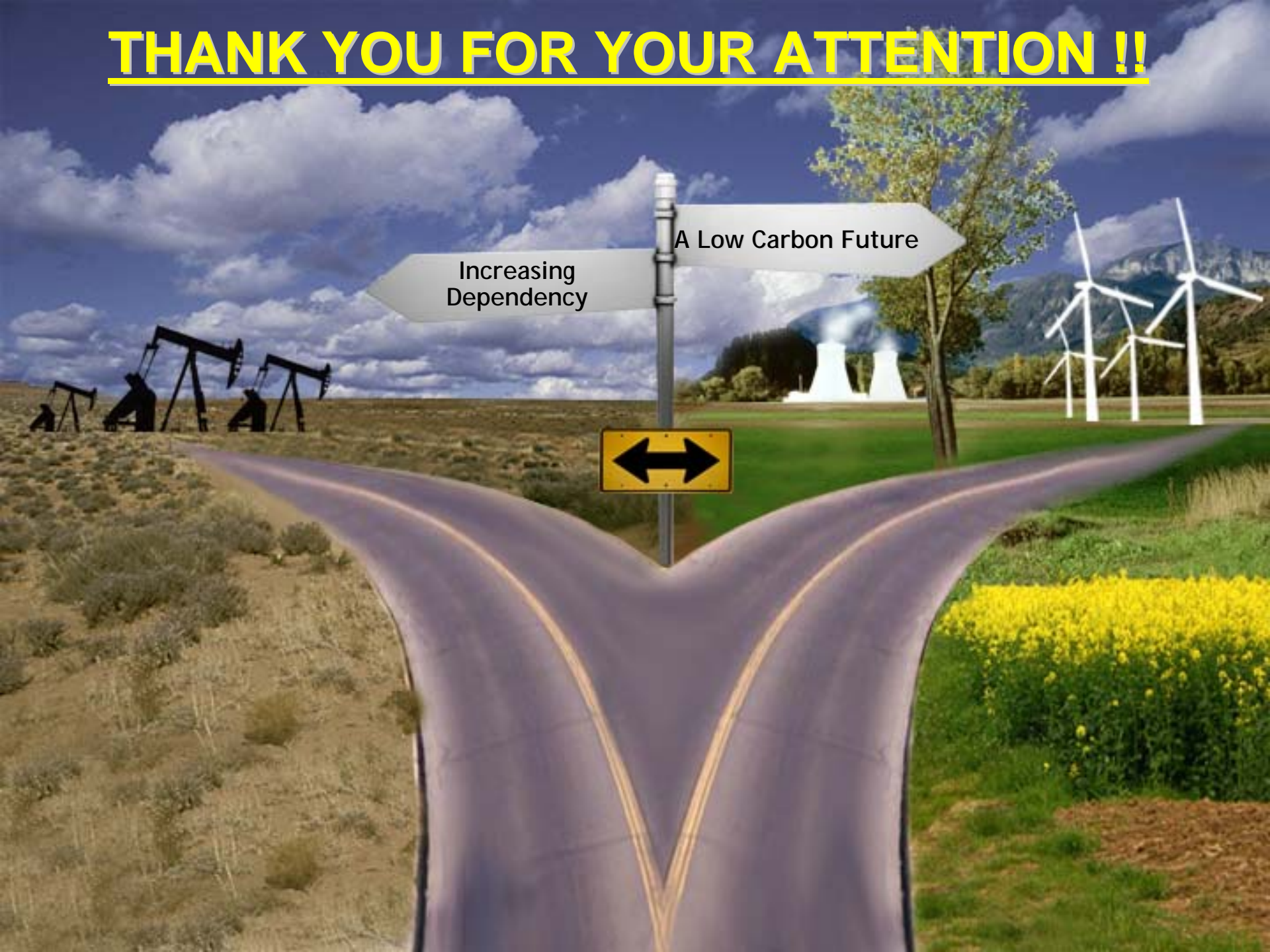
The SET-Plan (6)

International cooperation

- **Developed** countries – safety, public acceptance, longer-term frontier research
- **Developing** and **emerging** economies – helping sustainable develop and opportunities for EU industry
 - » networking energy technology centres;
 - » large-scale demonstration projects;
 - » Global Energy Efficiency and Renewable Energy Fund;
 - » Clean Development Mechanism post-2012
- EU ‘speaks with one voice’ in international fora



THANK YOU FOR YOUR ATTENTION !!



Increasing
Dependency

A Low Carbon Future

