



EUROPEAN
COMMISSION

Community Research

Energy RTD in Europe

SESSA Conference

“Investment for sustainability”

Comillas, Madrid, 19-20 May 2005

Domenico Rossetti di Valdalbero

European Commission, DG Research

Tel.: +32-2-296.28.11

Fax: +32-2-299.49.91

E-mail: domenico.rossetti-di-valdalbero@cec.eu.int

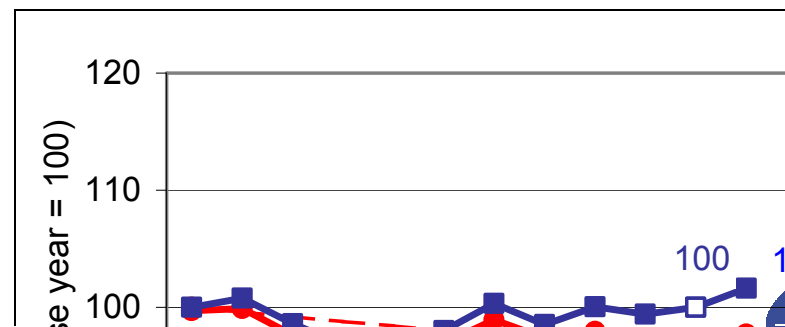




ROLE OF PUBLIC AUTHORITIES

1) Fixing EU ambitious targets

The example of Kyoto





ROLE OF PUBLIC AUTHORITIES

2) Internalisation of external costs

To preserve collective goods (air quality, climate,...)

- **Fiscal instruments**

“To ensure that those who cause injury to human health or cause damage to the environment are held responsible for their actions”

- **Subsidies**

“Principle that prices should incorporate the external costs”





ROLE OF PUBLIC AUTHORITIES

3) Stimulate technological change

- **Fixed price schemes or Quota based mechanisms for renewables**
- **Research and Technological Development**
EU RTD Framework Programme





EU RESEARCH - CONTEXT

- **EU specific system: 25 Member States and EU**
- ***European Research Area* is not obvious: large differences among MS and RTD priorities**
- **RTD Framework Programme: a genuine « EU choice »: proposal from the Commission and *co-decision* from the EP and the Council (MS)**
- **RTD: third largest EU policy in budgetary terms with more than € 4 billion/year**
- **FP6 represents about 6% of EU public (civilian) research budget**
- **EU research covers scientific, technological and socio-economic issues**





EU RTD DRIVING FORCES

- **Lisbon Strategy**

Europe has to become the most competitive economy in 2010

- **European Research Area**

Europe should better structure its Research (no 25+1)

- **Barcelona Summit**

Europe has the objective of achieving 3% of GDP dedicated to RTD by 2010 (less than 2% today)

- **Gothenburg Summit**

Europe puts sustainable development as a key policy driver

- **EU financial perspectives 2007-2013**

Europe should double its research budget

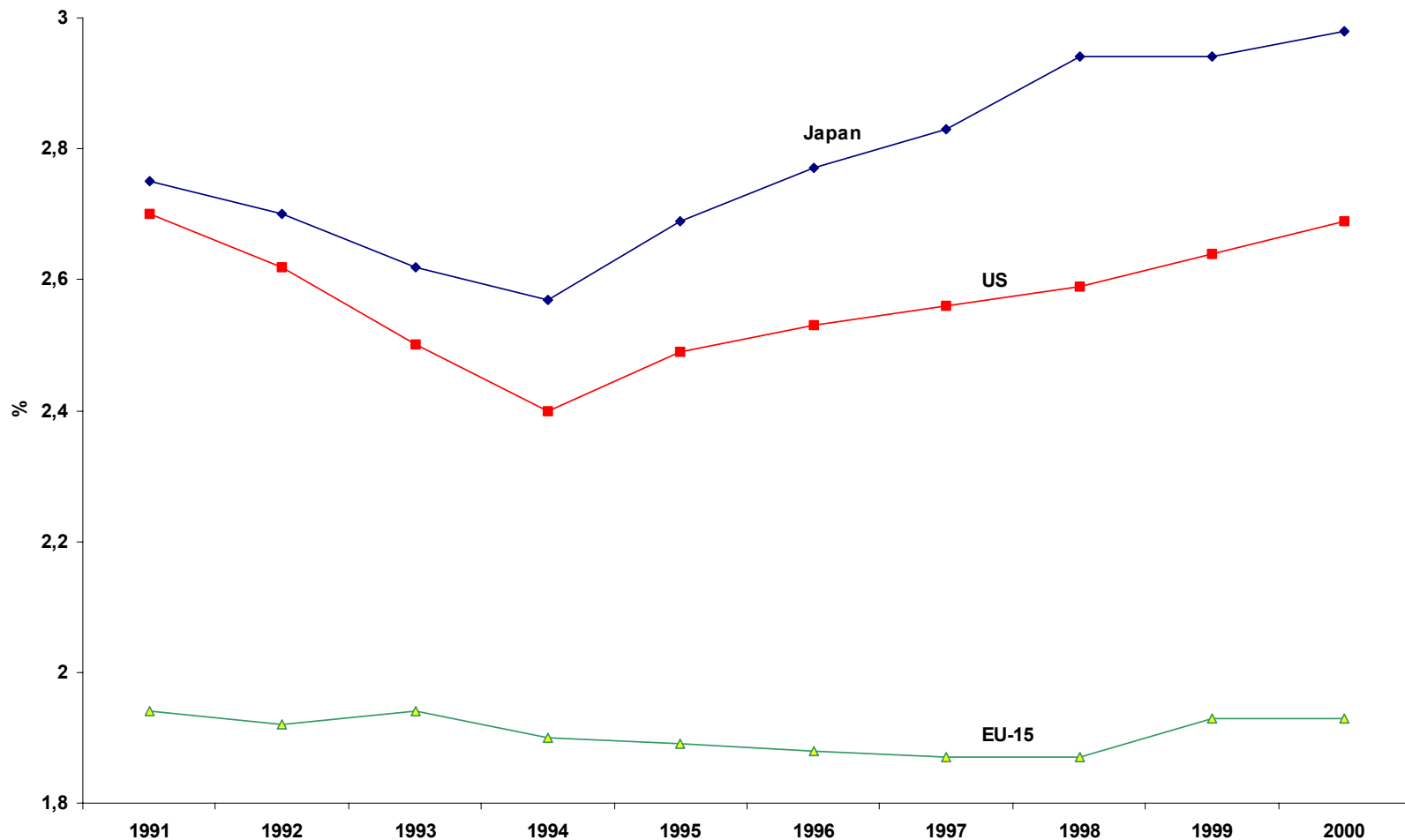




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RTD INTENSITY



Sustainable Energy Systems

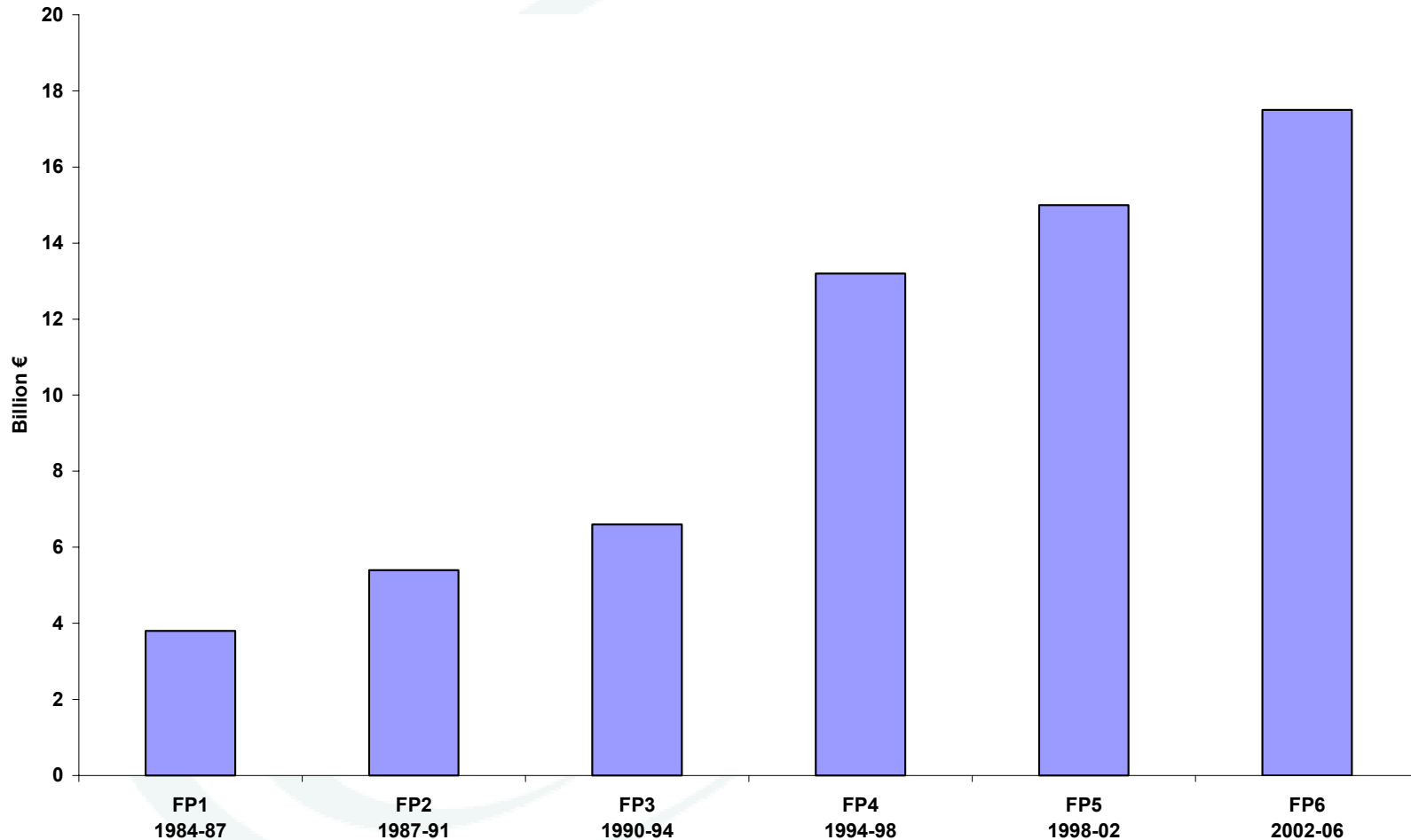




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EU FRAMEWORK PROGRAMMES



Sustainable Energy Systems





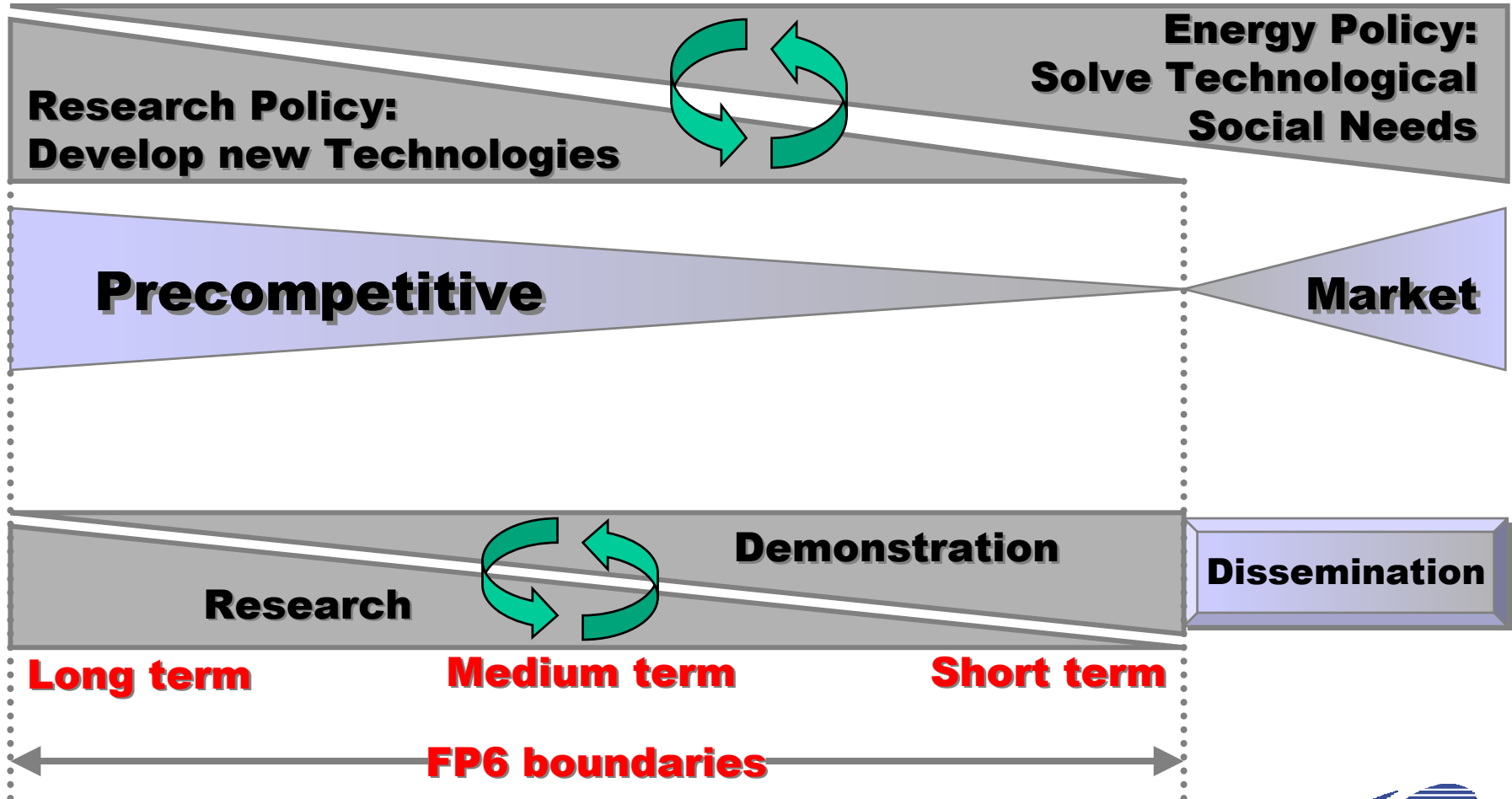
EU RESEARCH IN ENERGY

- **The EU research activities born in the energy field:**
 - **the ECSC (1951) covers the coal research**
 - **the EURATOM - EAEC - (1957) covers the nuclear research**
 - **The initial non sectorial research were launched in 1974 (Council resolutions)**
- **The first European RTD framework Programme born in 1984**



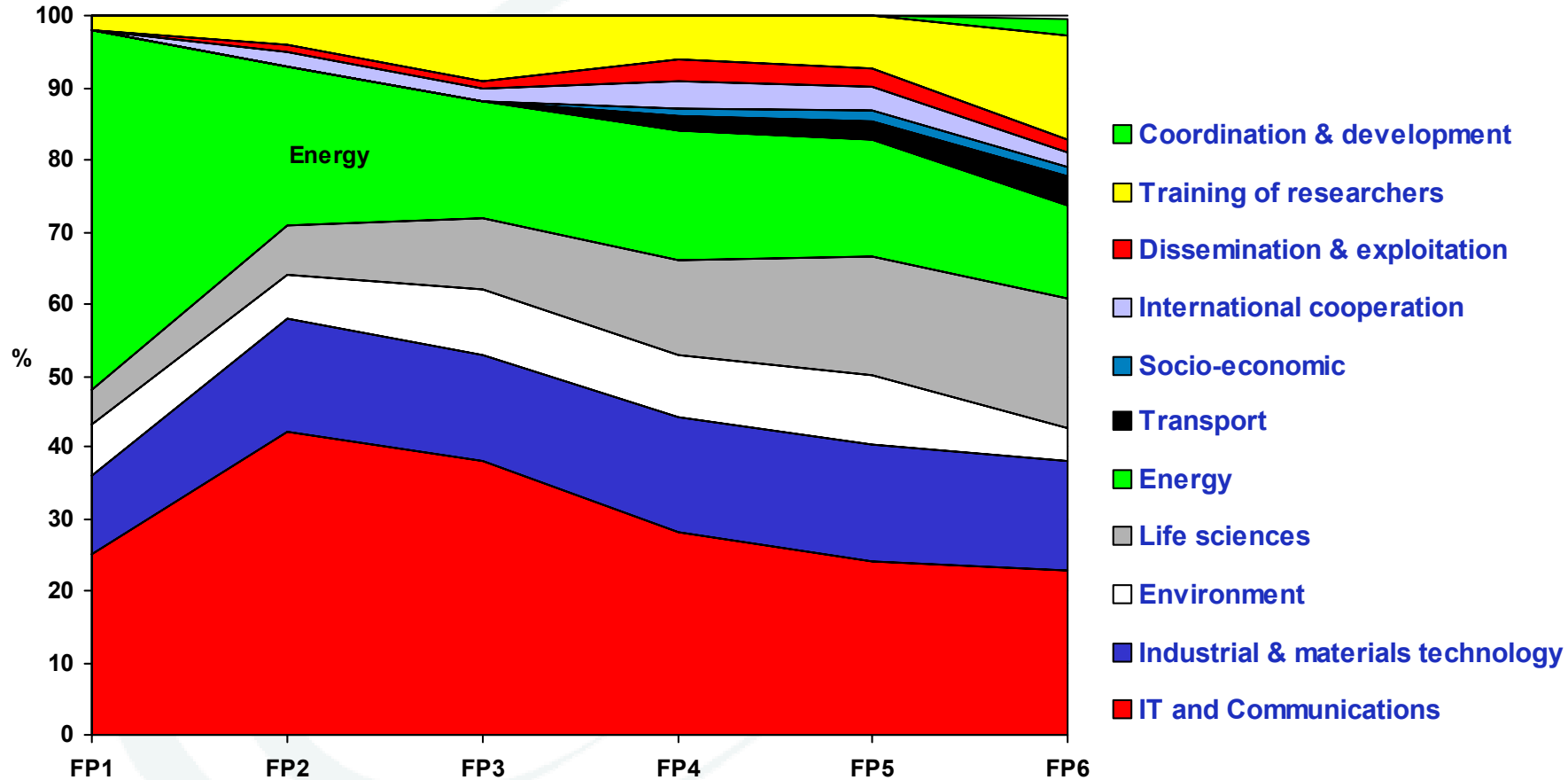


INTERACTION BETWEEN RTD AND POLICIES THE EXAMPLE OF ENERGY



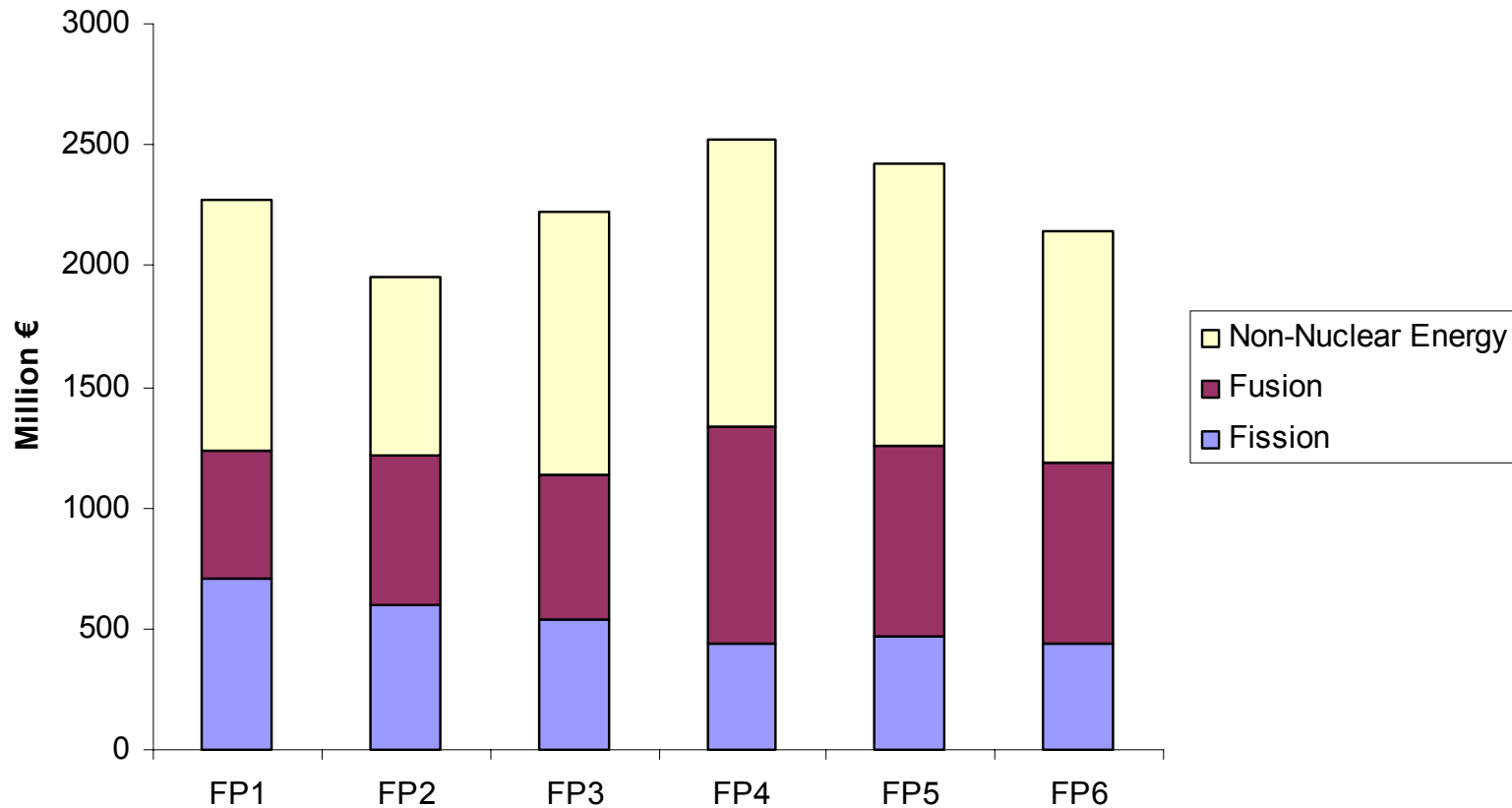


EU RTD PRIORITIES



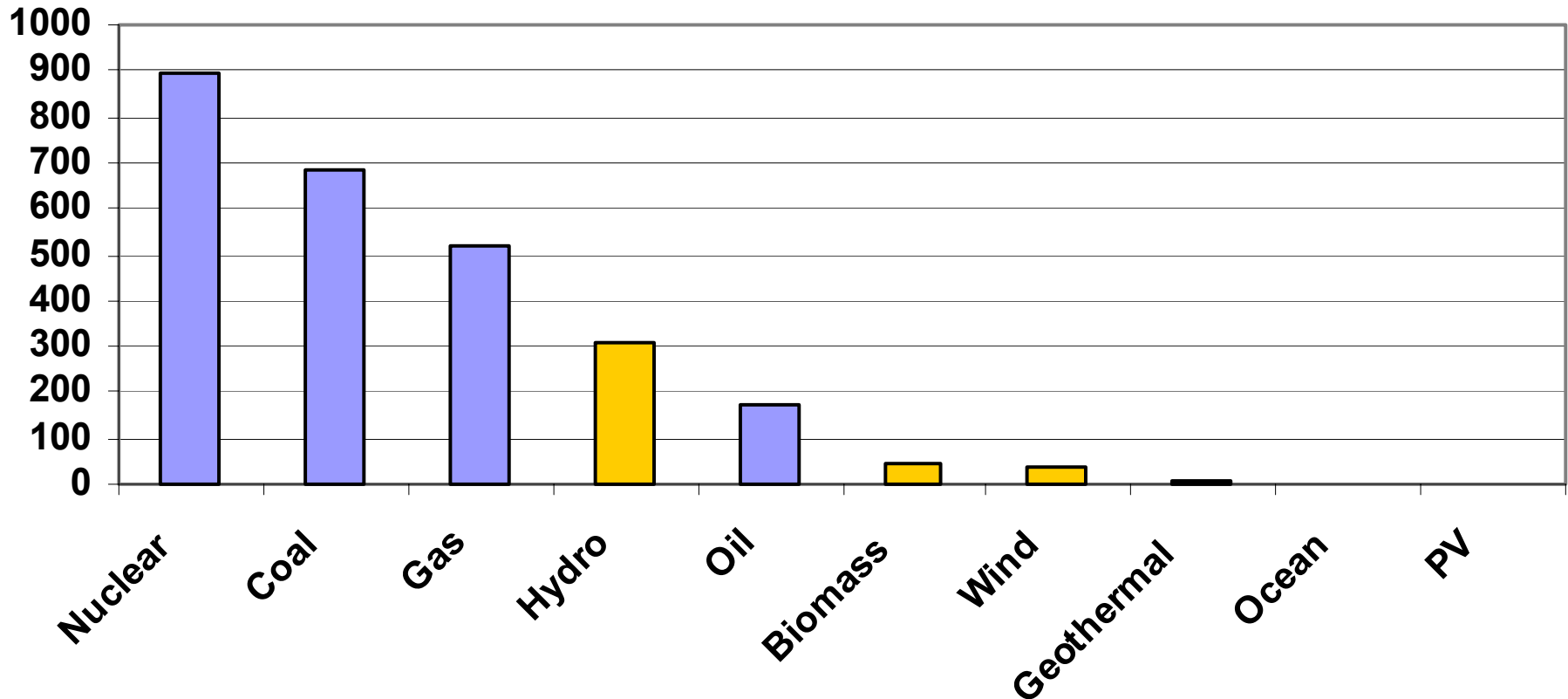


TOTAL EU ENERGY RTD&D IN THE SIX FP



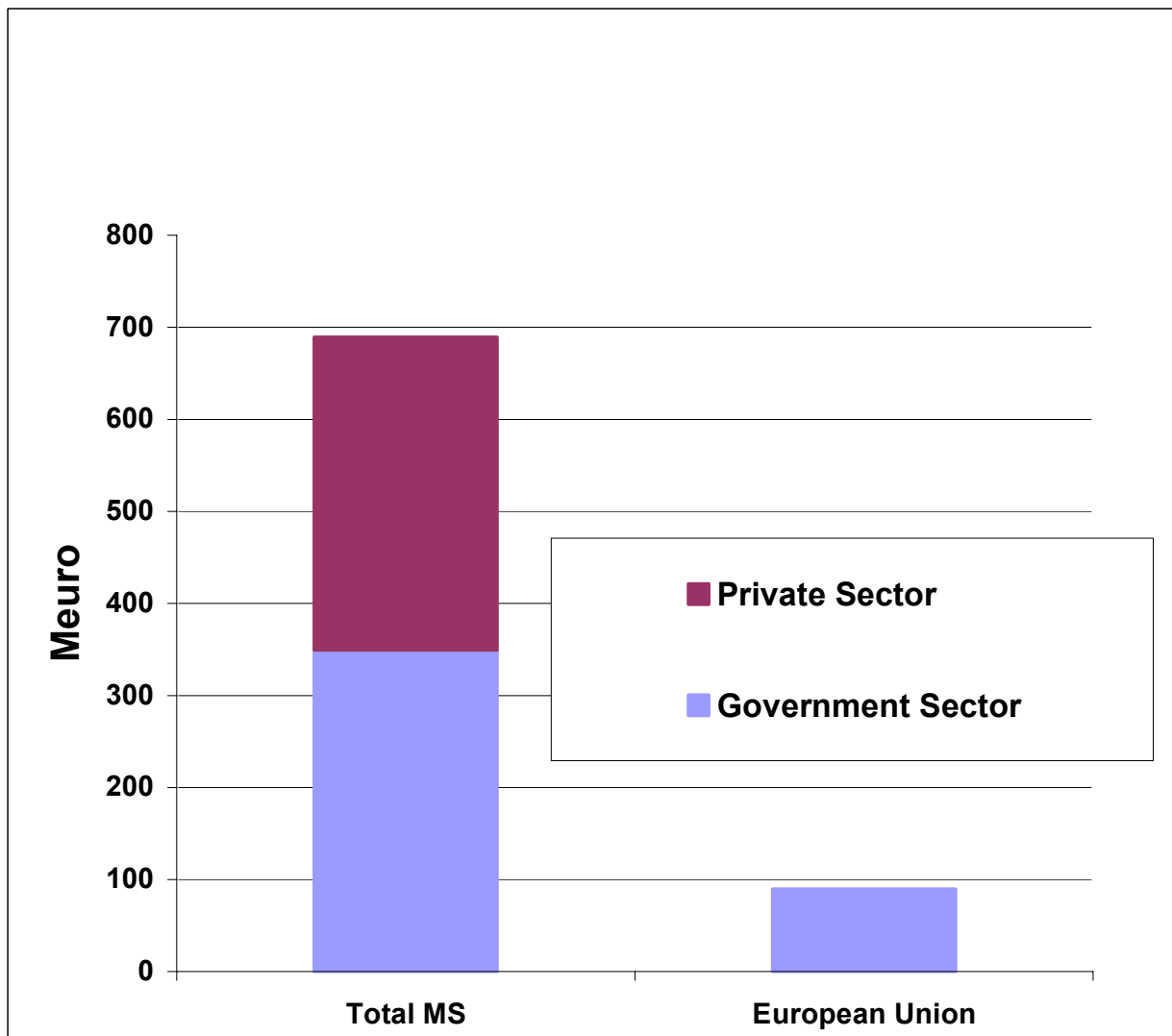


EU-15 GROSS ELECTRICITY GENERATION IN 2002 (in TWh)





EU ANNUAL RESEARCH SPENDING FOR RES (in M€)





FP7 (2007 – 2013) SPECIFIC PROGRAMMES

Cooperation – Collaborative research

Ideas – Frontier Research

People – Human Potential

Capacities – Research Capacity

+

JRC (non-nuclear)

JRC (nuclear)

Euratom



FP7 (2007-2013) COOPERATION BUDGET

I. Cooperation

Budget
(€ million, 2004
constant prices)

1. Health	7 325
2. Biotechnology, food and agriculture	2 163
3. Information society	11 159
4. Nanotechnologies, materials and production	4 256
5. Energy	2 581
6. Environment	2 232
7. Transport	5 232
8. Socio-economic research	698
9. Security and space	3 488

Total **39 134***

* Not including non-nuclear activities of the Joint Research Centre: €1 617 million





ENERGY RTD IN FP7 KEY CHALLENGES

- **Global energy demand predicted to increase by 60% over the next 30 years**
- **EU energy dependence could rise from 50% to 70% by 2030; damaging volatility of oil prices and geopolitical instability**
- **Over 90% of EU CO₂ emissions, causing climate change, are attributable to energy**
- **Global energy investments of €12 trillion required up to 2030 – huge market potential, but EU under severe threat from global competitors**





ENERGY RTD IN FP7 PRIORITIES

Hydrogen and fuel cells

Energy savings and energy efficiency

Renewable electricity generation

CO2 capture and storage technologies for zero emission power generation

Renewable fuel production

Clean coal technologies

Renewables for heating and cooling

Smart energy networks

Knowledge for energy policy making



CONCLUSIONS

- **Some important initiatives (EU directives, World recommendations, etc.) exist but strong efforts are still needed to achieve “sustainability” and a particular attention should be given to RTD (to achieve 3% of GDP by 2010)**
- **Research is a crucial mean -but not the only one- to push for new sustainable technological development**
- **Public and private research should combine their efforts (“Technology Platforms”)**





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WEB INFORMATION SOURCES

<http://www.cordis.lu>

http://europa.eu.int/comm/research/energy/index_en.html

http://europa.eu.int/comm/energy/index_en.html

