



Directorate-General
for Energy
and Transport

Energy Technologies in Context



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Overview

- **Political Context –Climate Change Package**
 - **Security of Supply**
- **The SET-Plan**
- **FP7 and other Resources**



European Commission proposals 23/01/08:

- A new EU **emissions trading scheme** with a European (not national) cap, auctioning of allowances: to generate reductions in GHG of 21%
- New national targets to achieve a 10% GHG reduction in **non ETS sectors**
- A framework to promote the development of **CO2 capture** and storage
- New guidelines on **state aid** for environmental protection
- An update on the implementation of the **Energy Efficiency Action Plan**
- **New directive** to reach the 20% renewable energy target and 10% biofuels target

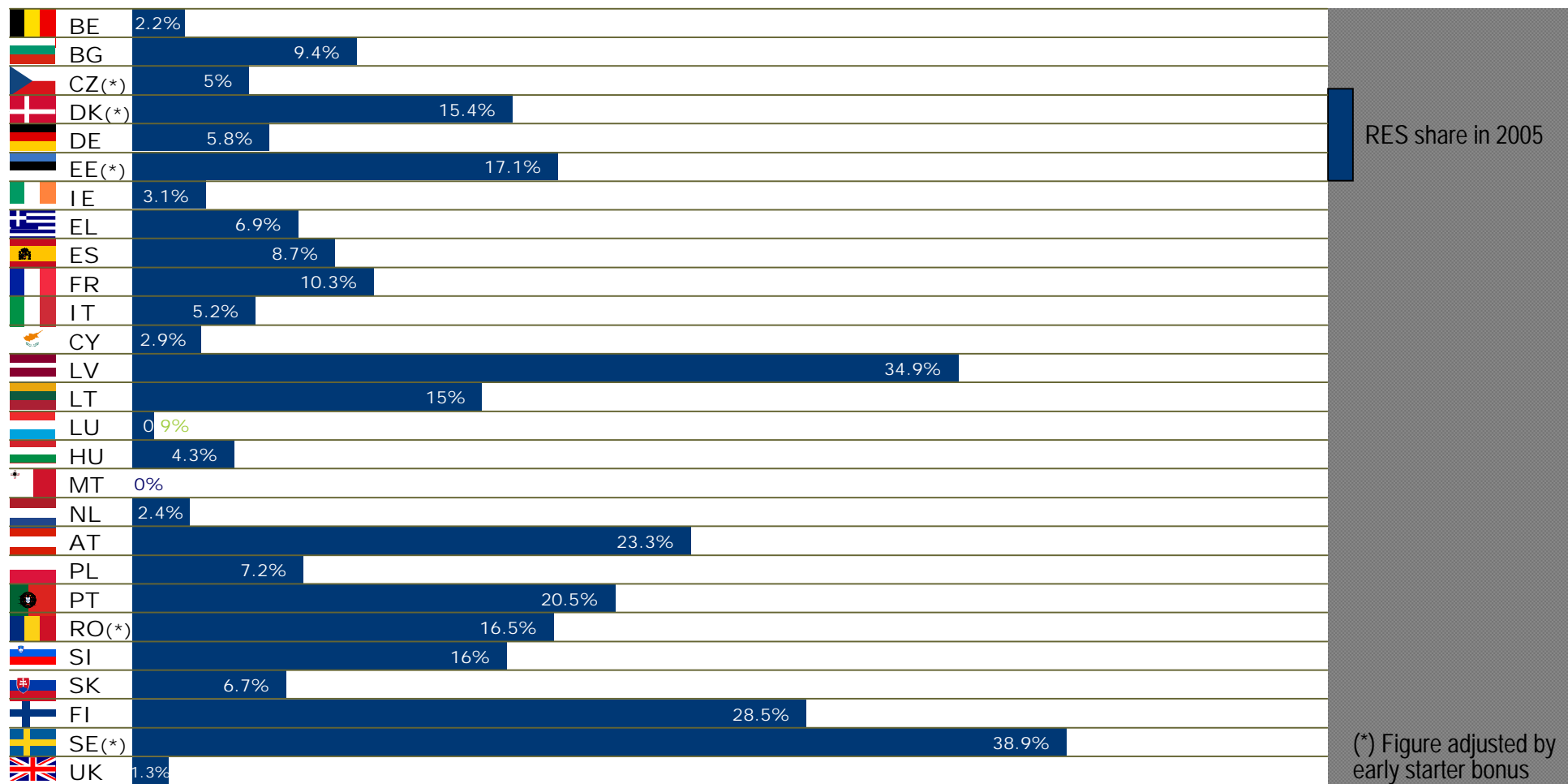


The cost of the whole package

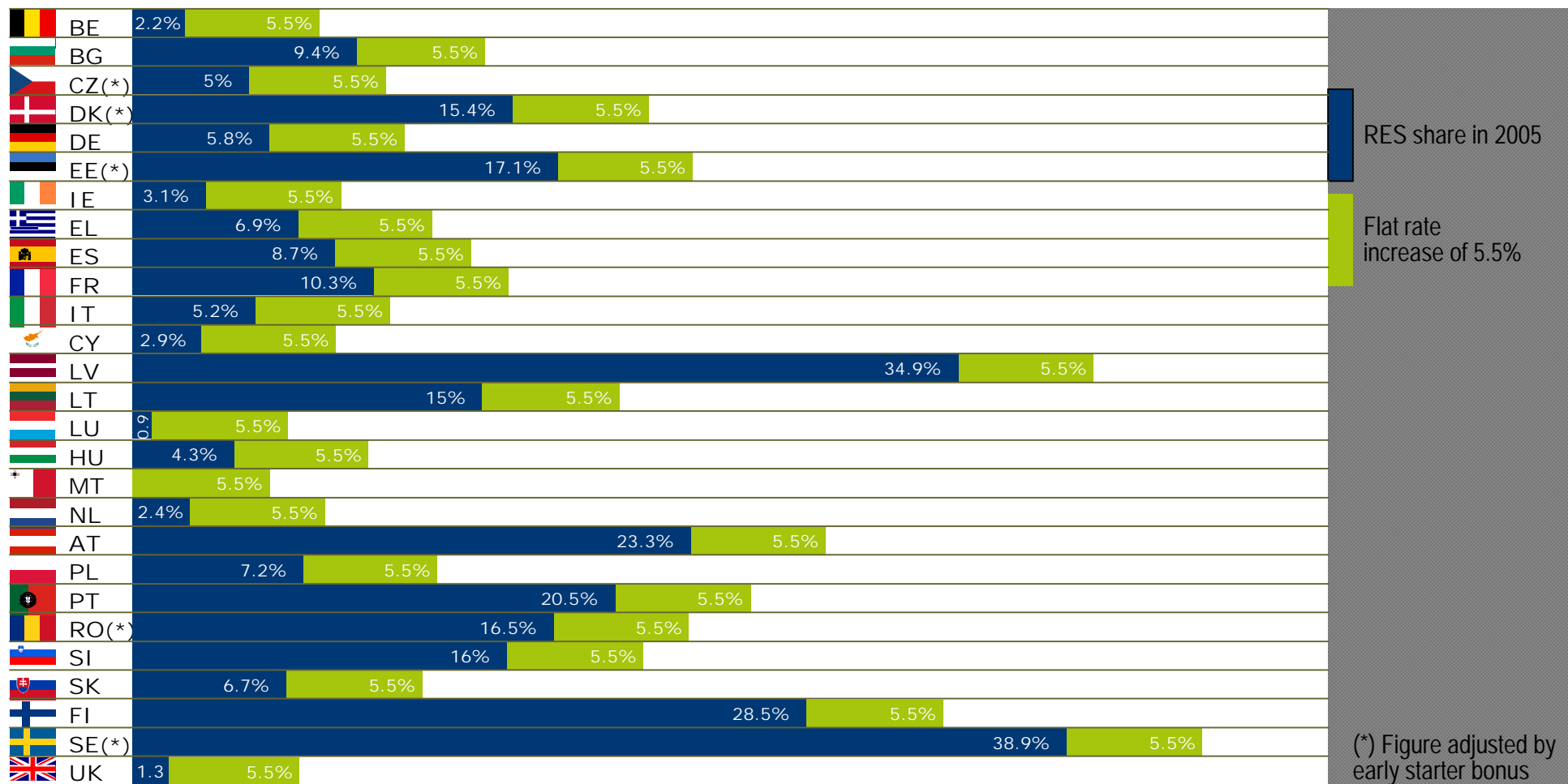
- **increased energy and non CO₂ mitigation cost to meet both targets domestically: 0.6% of GDP in 2020, or some €90 bn**
- **Macroeconomic effects : GDP growth reduced by some 0.04-0.06% between 2013 and 2020, or 0.5% in 2020 compared to business as usual**
- **These are conservative estimates :**
 - » oil price of \$100 per barrel would reduce costs by €30 billion
 - » foreseen use of cheaper CO₂ credits through investments in Clean Development Mechanism reduces costs by a quarter
 - » does not include positive macroeconomic rebound effects of re-injecting auctioning revenues back into the economy, estimated at maximum +0.15% of GDP



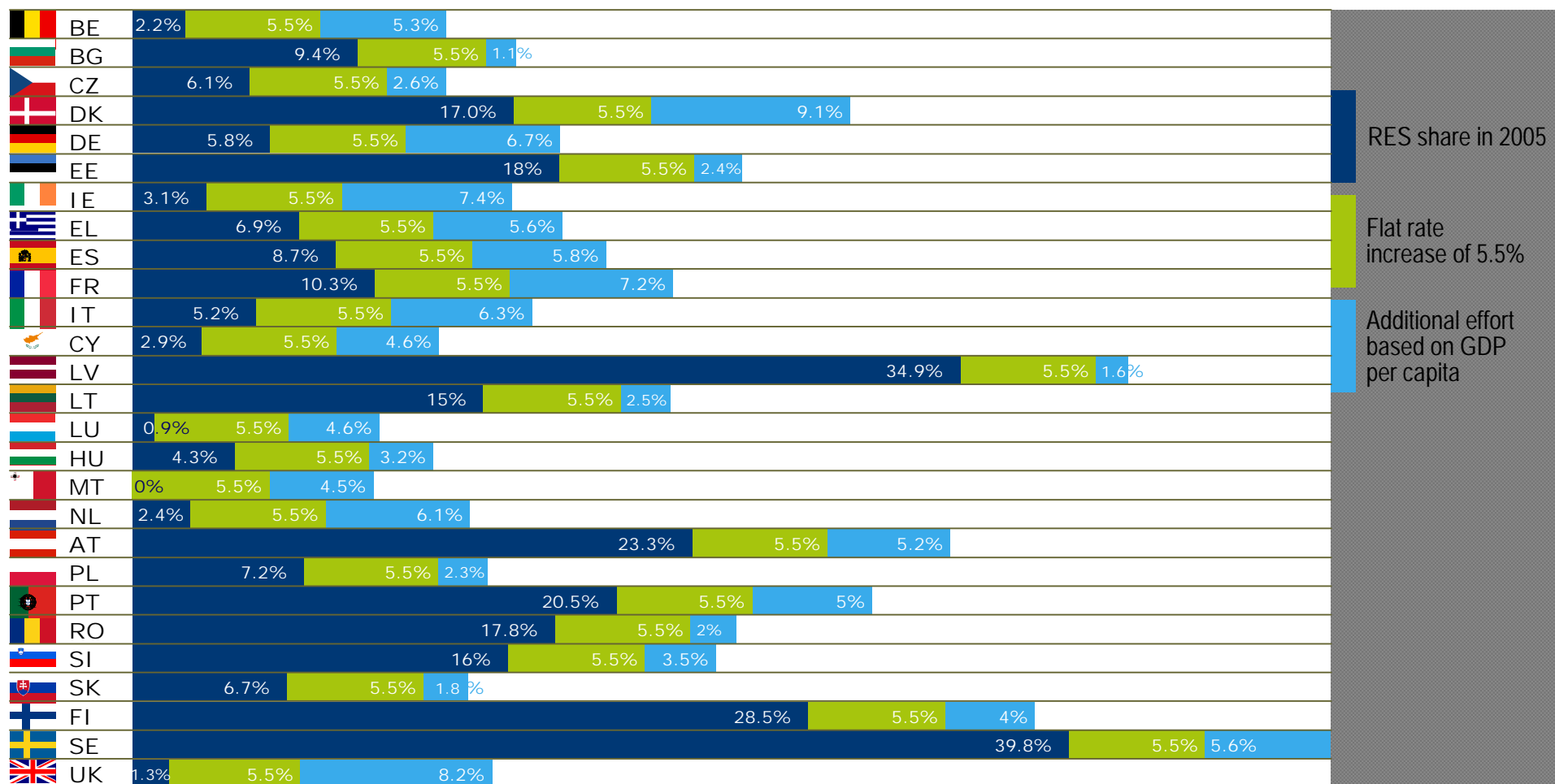
EU-27 efforts in Renewables: RES share in 2005



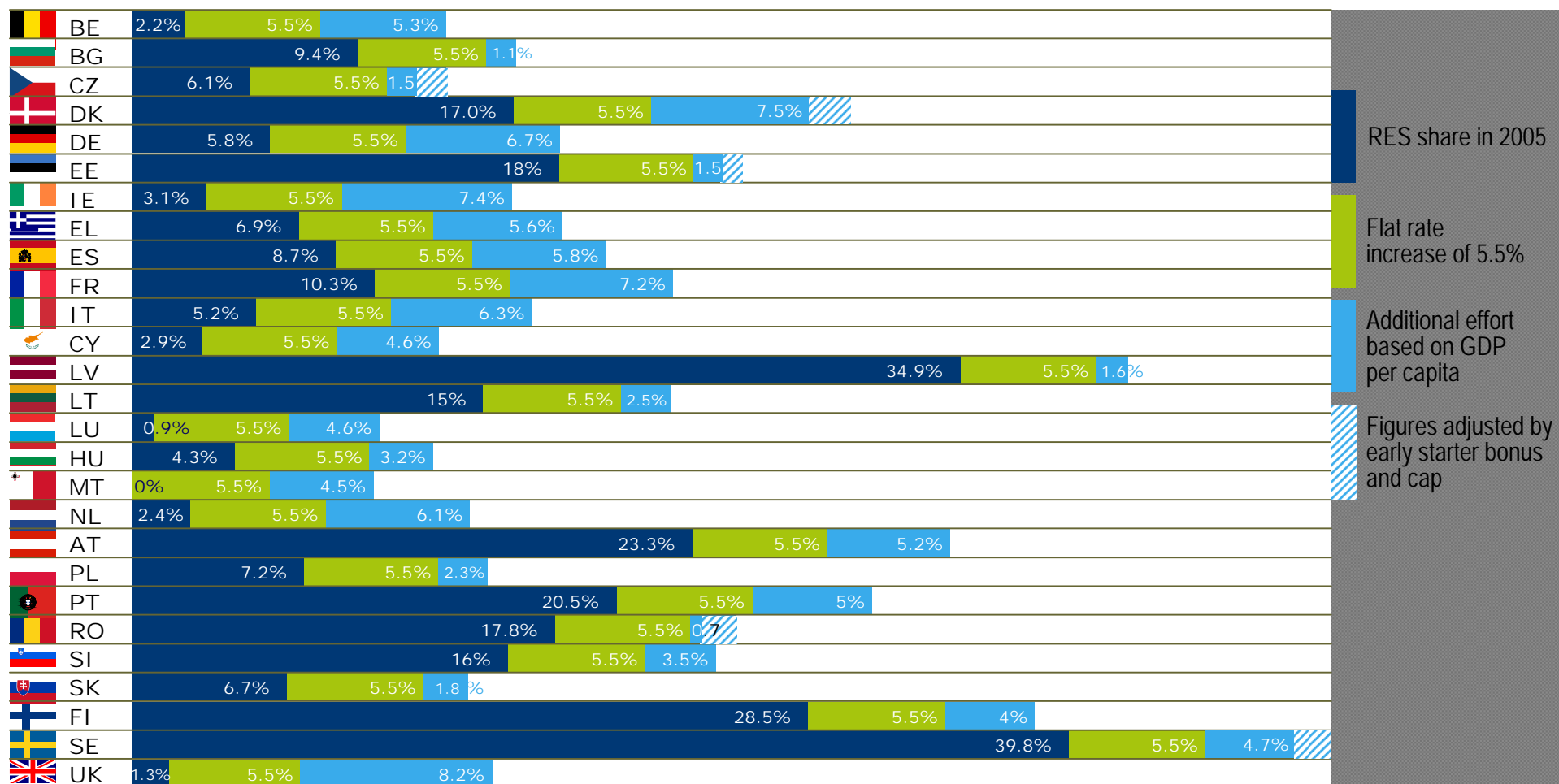
EU-27 efforts in Renewables: Flat rate increase



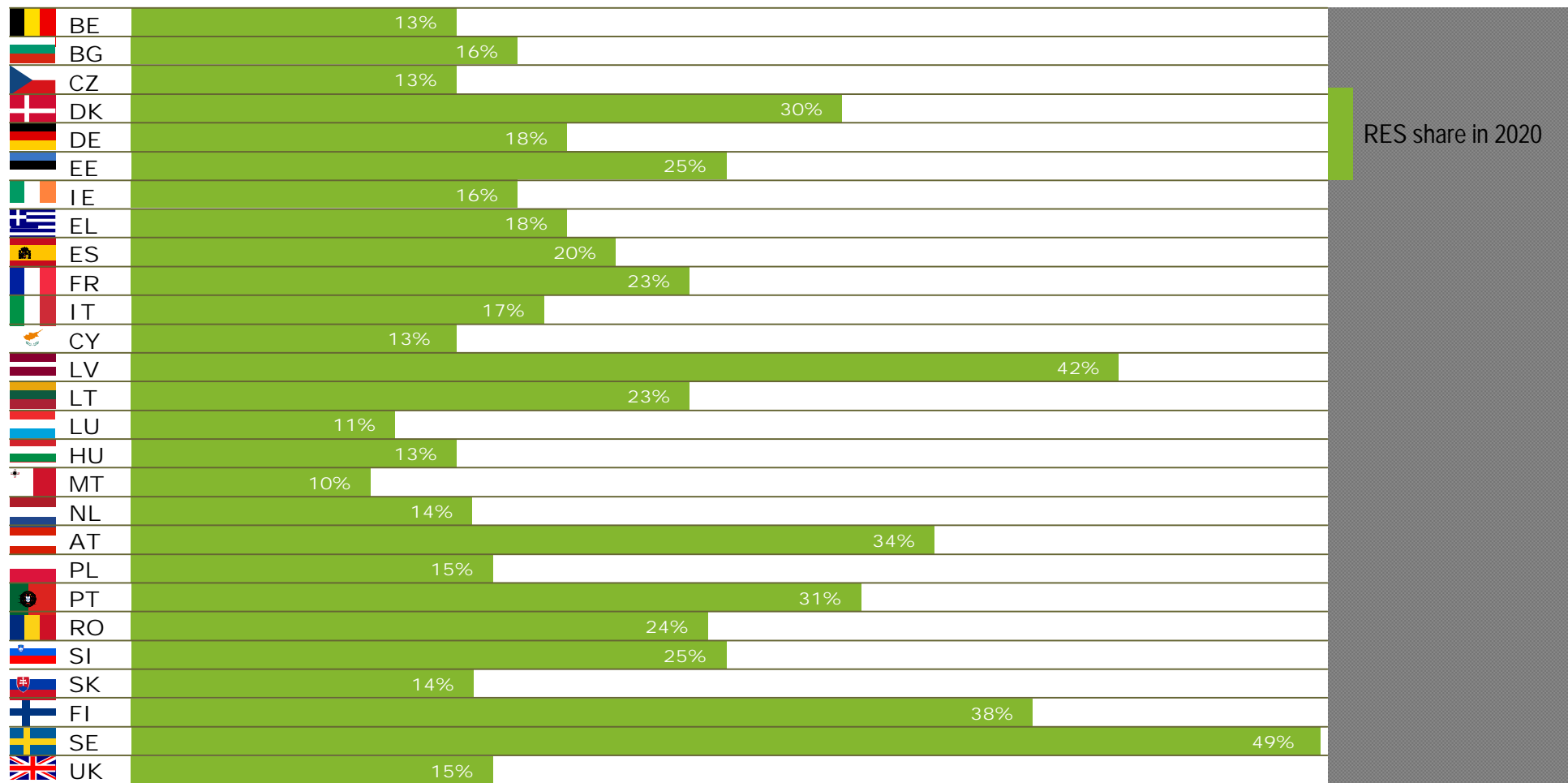
EU-27 efforts in Renewables: GDP weighted increase



EU-27 efforts in Renewables: early starter adjustment & cap



EU-27 efforts in Renewables: + modulations & cap



National action plans

- Sectoral targets now set by Member States
- Measures adequate to achieve the targets including planned development of biomass resources
- Provides policy stability for investment



Security of Supply

- 2nd Strategic Review, in discussion with Council and Parliament. Positive response.
- Too much oil and gas, too much import dependency.
- Consolidates measures, including « new impetus on energy efficiency » and « better use of EU's indigenous energy ».





The SET-Plan

Communication from the Commission
22 November 2007



Why a SET-Plan? (1)

Technology is vital to achieve our policy objectives

Today we are falling short:

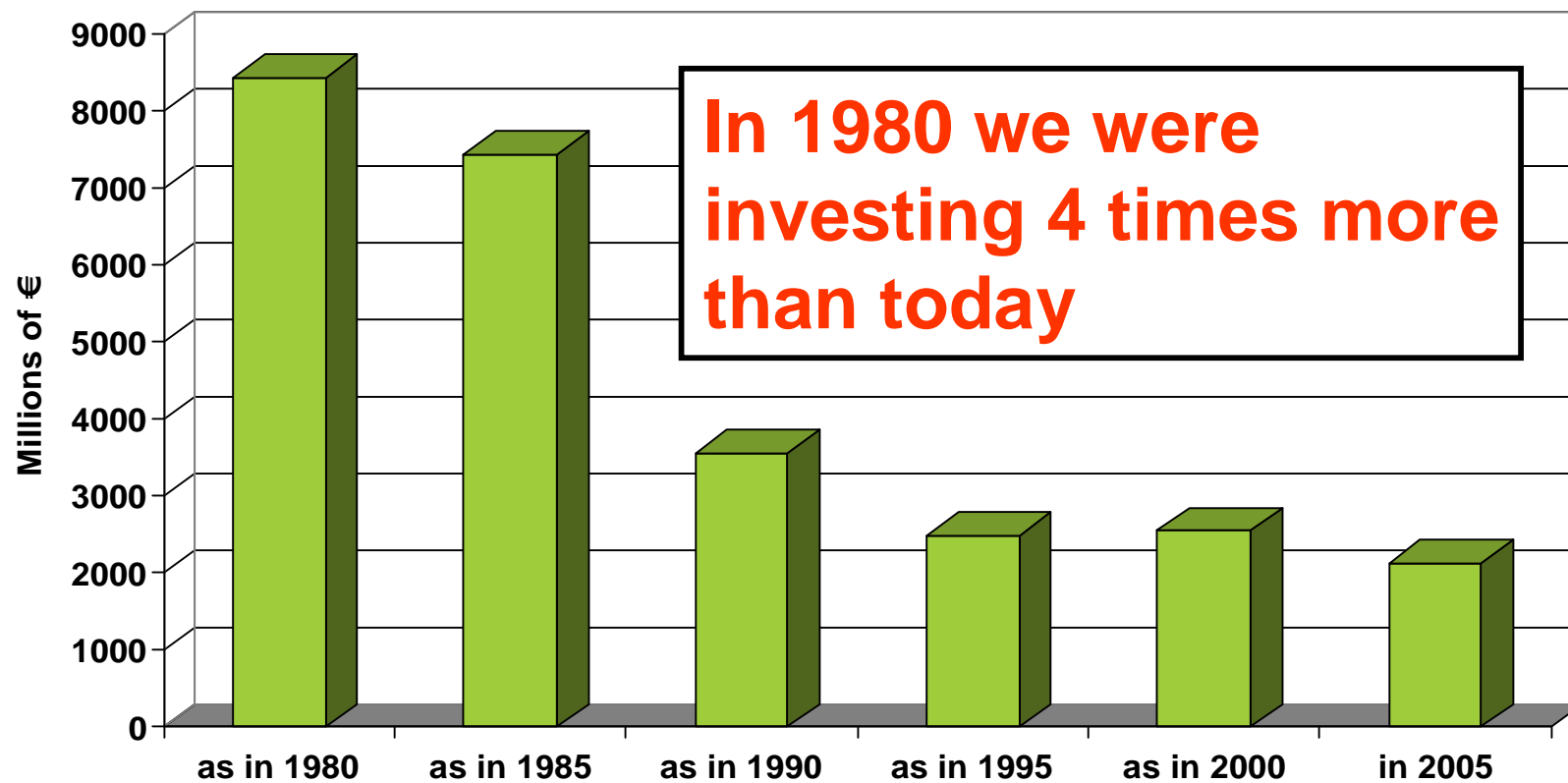
- | not on a pathway to meet our policy objectives
- | lack of innovation drivers for the industry
- | insufficient energy research budgets in the EU

Intrinsic weakness in energy innovation:

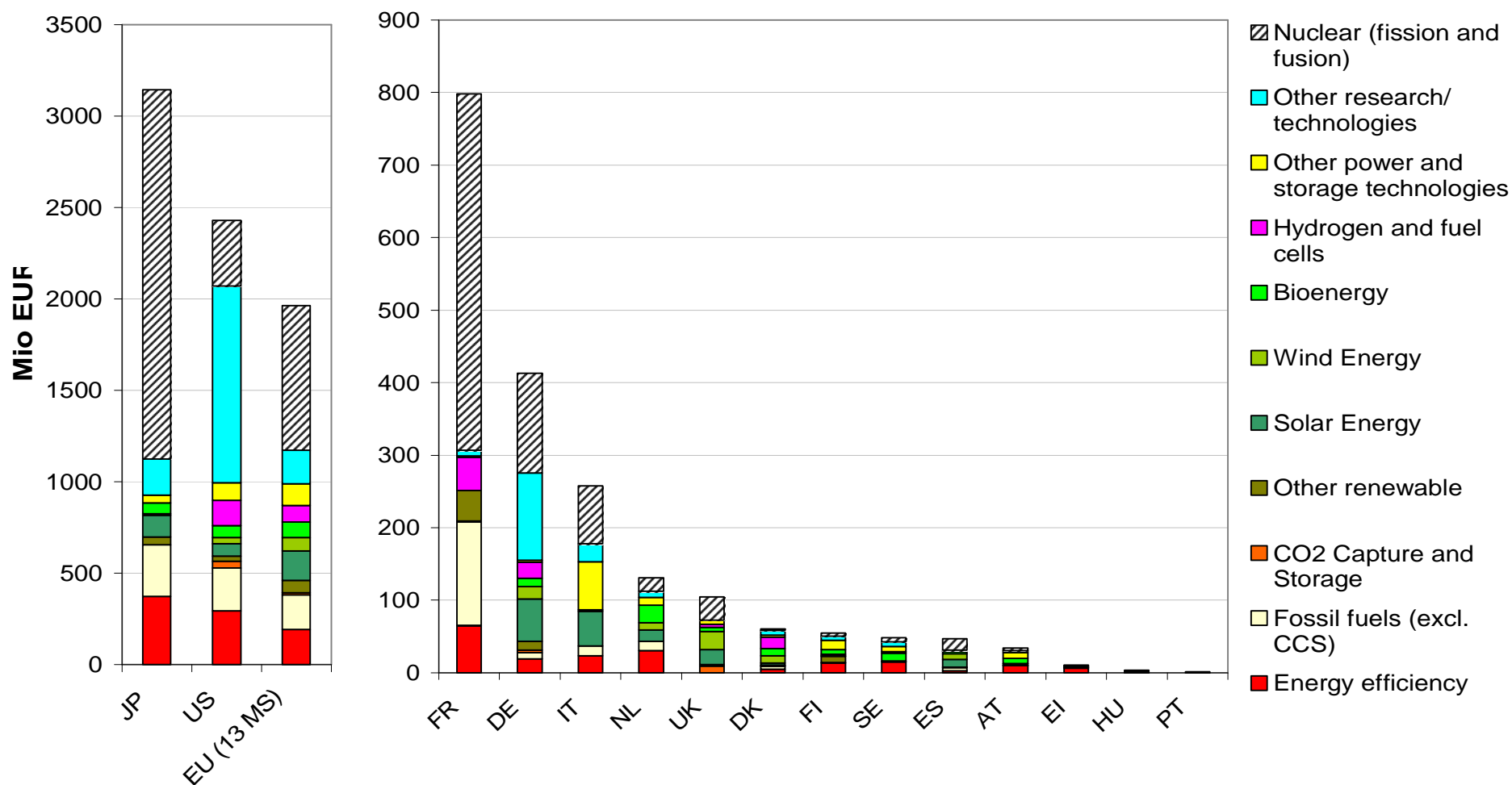
- | long lead times, incumbent technologies, system inertia
- | no natural market appetite for new energy technologies
- | social acceptance issues and up-front integration costs



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



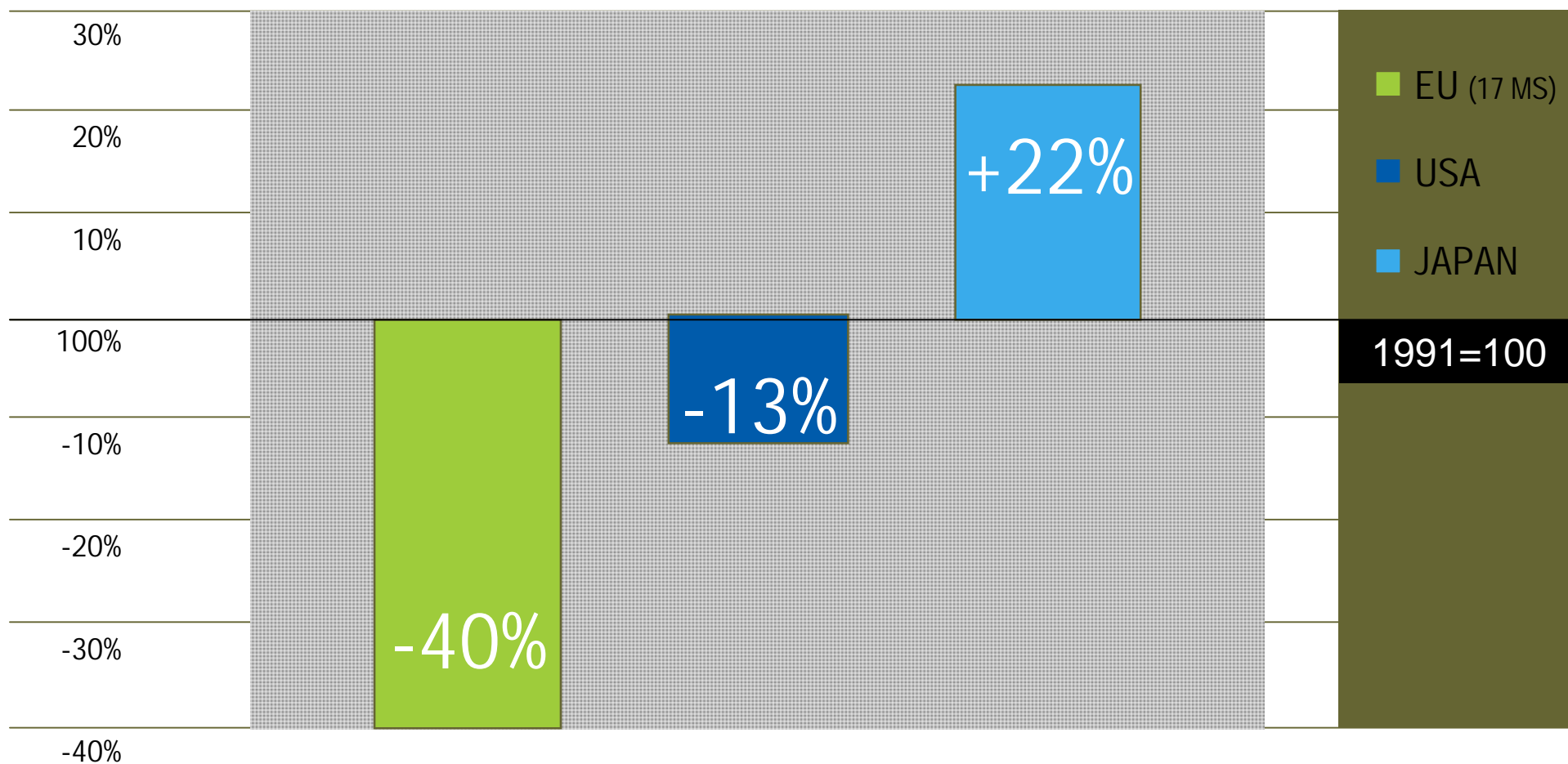
Public energy R&D expenditure in some EU Member States, Japan and USA by thematic area in 2005



2005

Source: International Energy Agency (IEA)

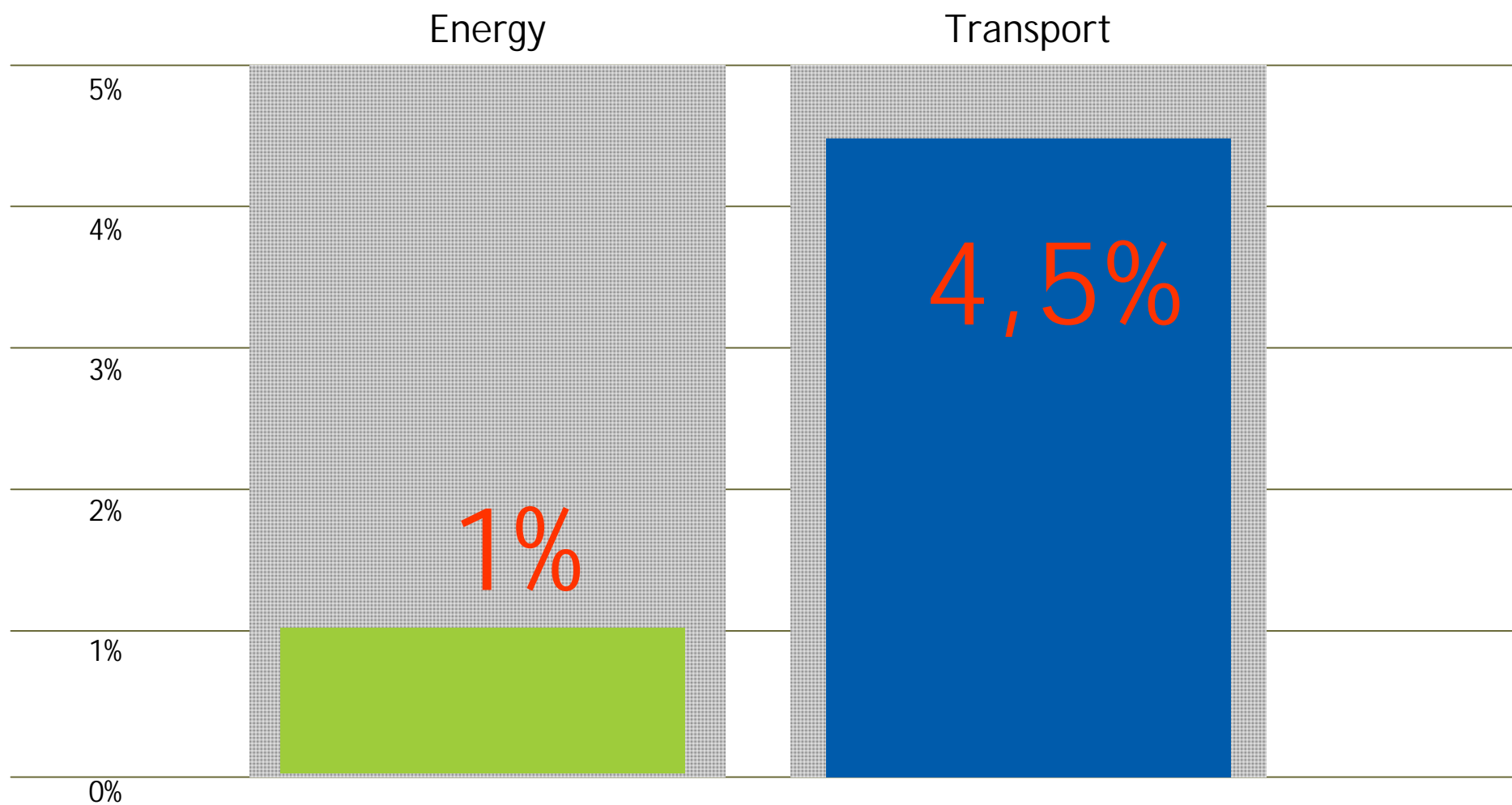
Evolution of public energy R&D EU Member States, the USA and Japan 1991-2005



2005

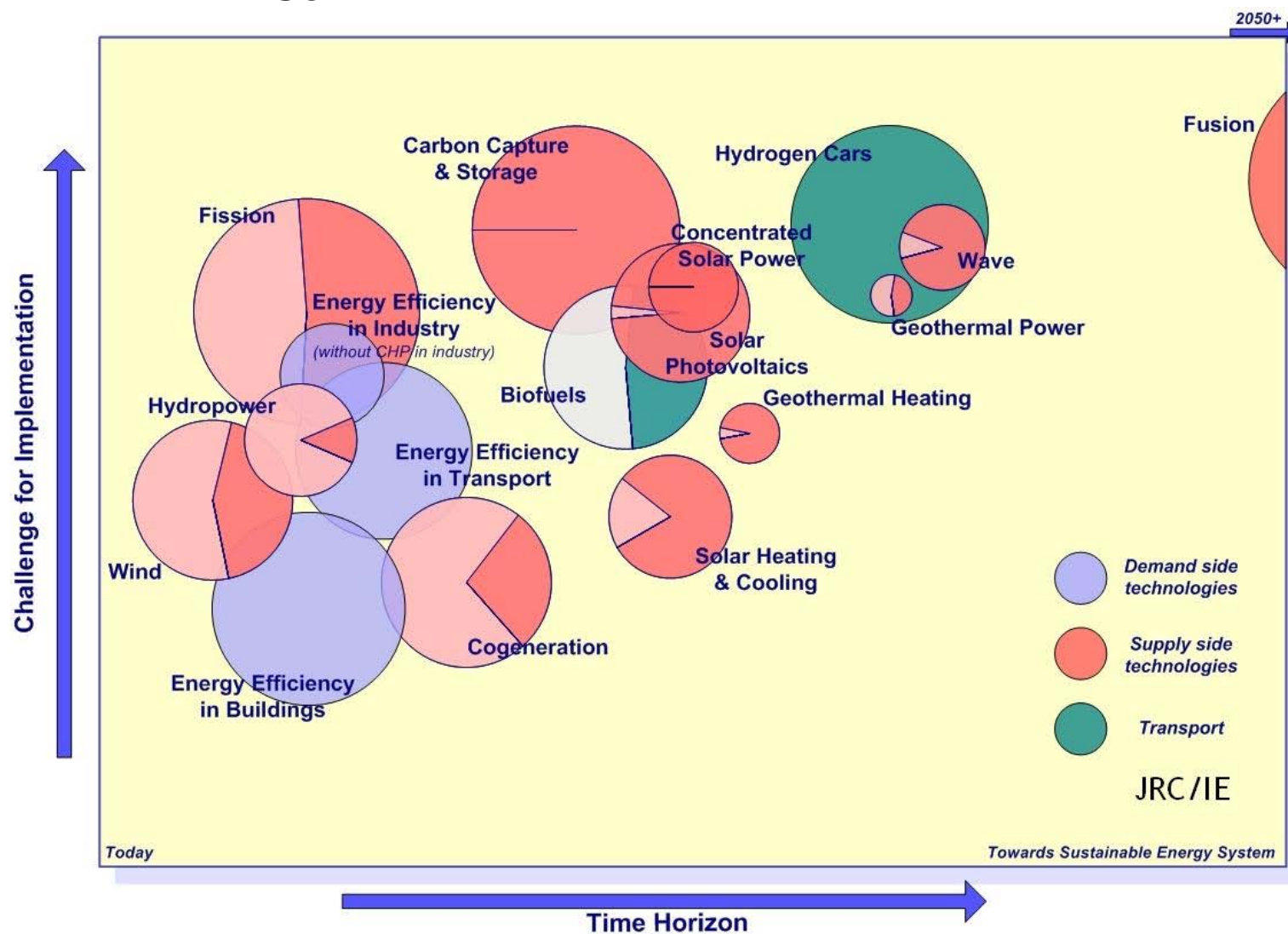
Source: International Energy Agency (IEA) and own calculations

EU industry investments in R&D



Percentage of net sales

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**
 - » **Sustainable fission (Generation IV)**
 - » **Fusion (on-going)**
 - » **Fuel cells and hydrogen (on-going)**





FP7 and other Resources





FP7

- Industry participation
- Commitment - 300 m€ pa to 2013 for Energy
- Focus
 - » Innovation
 - » Topics
 - » Policy Goals
 - » European Added Value



RECOVERY PLAN

- European Council approved the Plan in Dec 08 – 200b€
- 5b€ for infrastructure, of which 3,5b€ for energy
- More detailed proposals in discussion – hopes that package is finalised by Easter



TRADING REVENUES

- ETS
- CDM
- Future instruments?



THANK YOU FOR YOUR ATTENTION !!

