



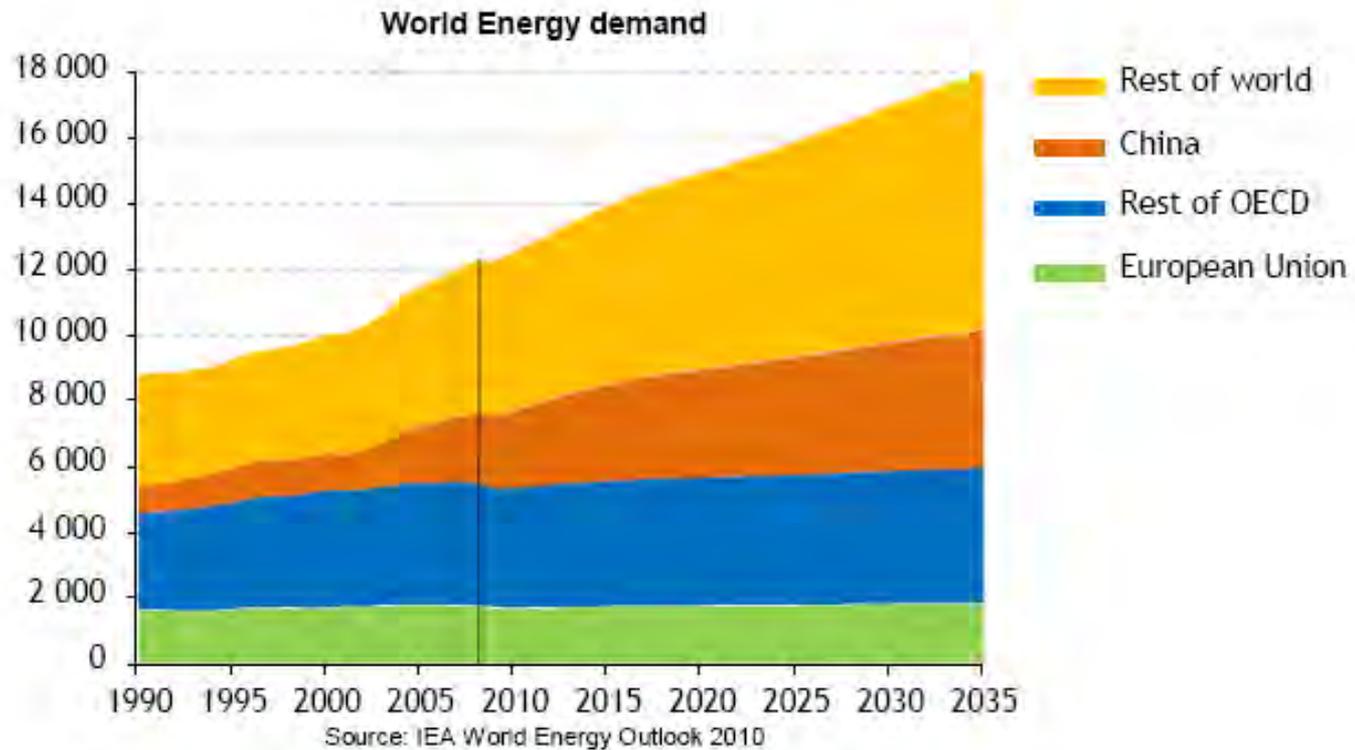
Directorate-General
for Energy

European Energy Challenges



Barbara Sellier, DG Energy, Strategy Unit
ATIEL Seminar, 7 December 2011

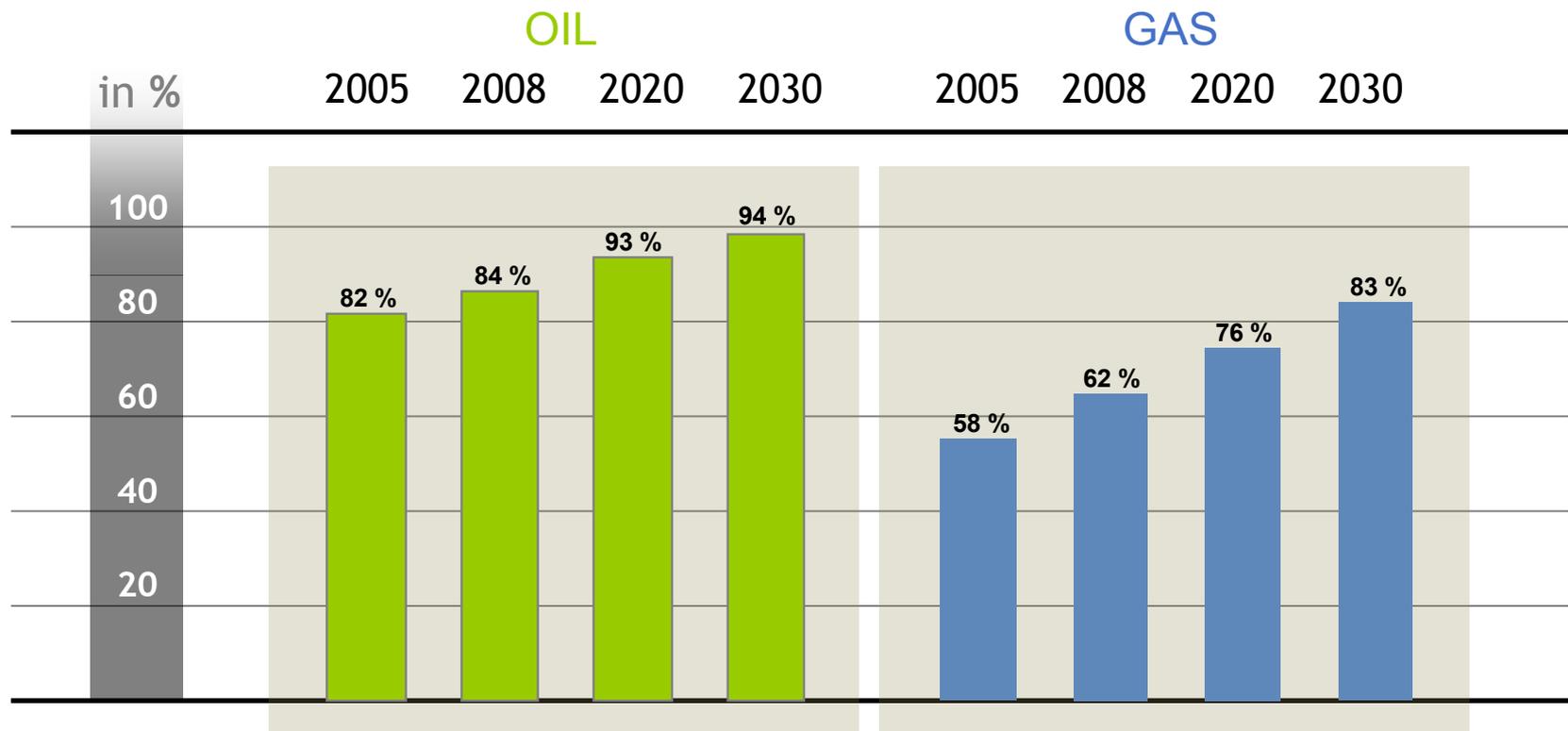
Global demand is on the rise



Energy demand could almost double from emerging countries between now and 2030: the EU will increasingly compete for energy resources

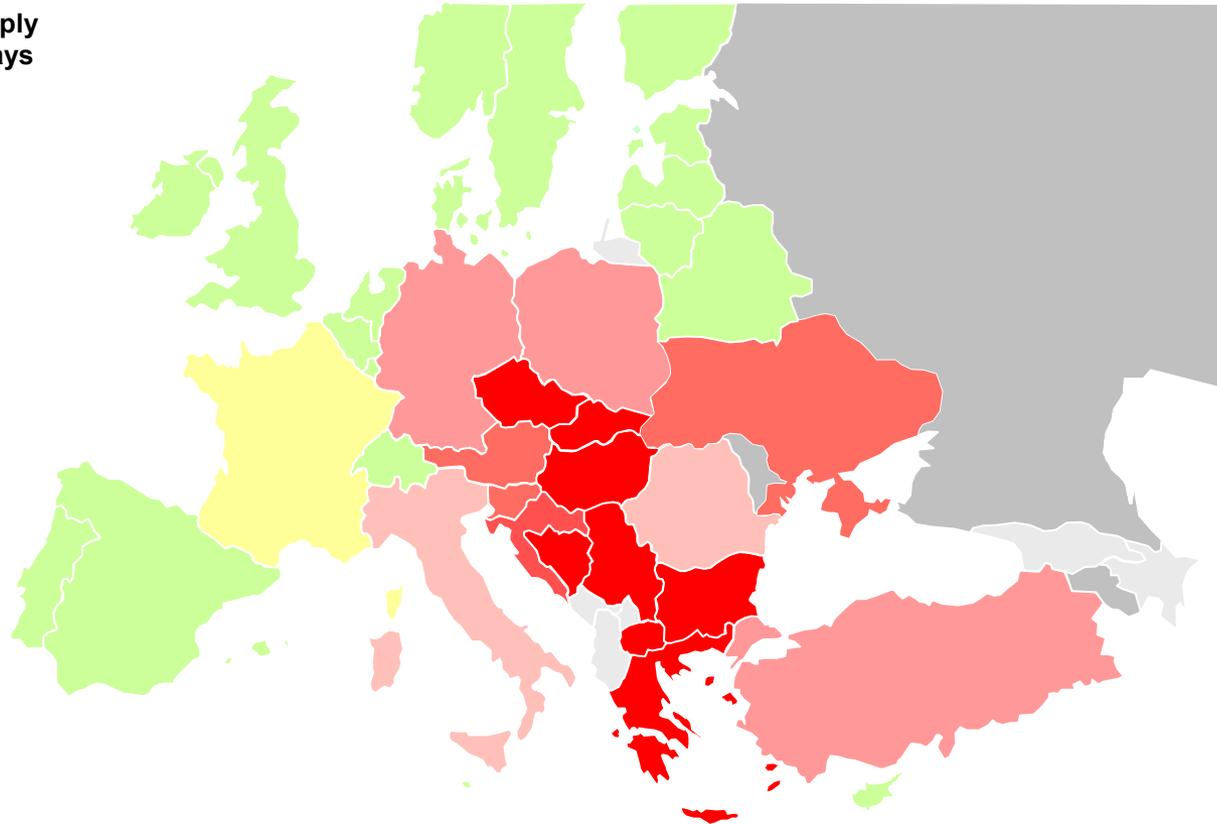
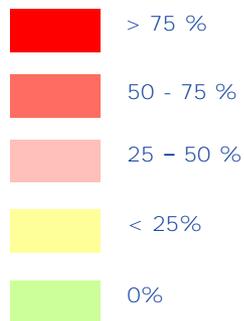
Dependence on imports is likely to grow

« Business as usual » scenario



Recent gas crises are illustrative

% of missing gas supply
– 300 mcm/d for 14 days
6-20 January 2009



The January 2009 gas crisis showed the lack of physical interconnections and the poor functioning of the EU internal market, with several Member States facing severe energy shortages for several days.

Source: European Commission

Energy is key for our economy

The EU pays 2.5% of its annual GDP to import energy:

- € 270 bn for oil
- € 40 bn for gas

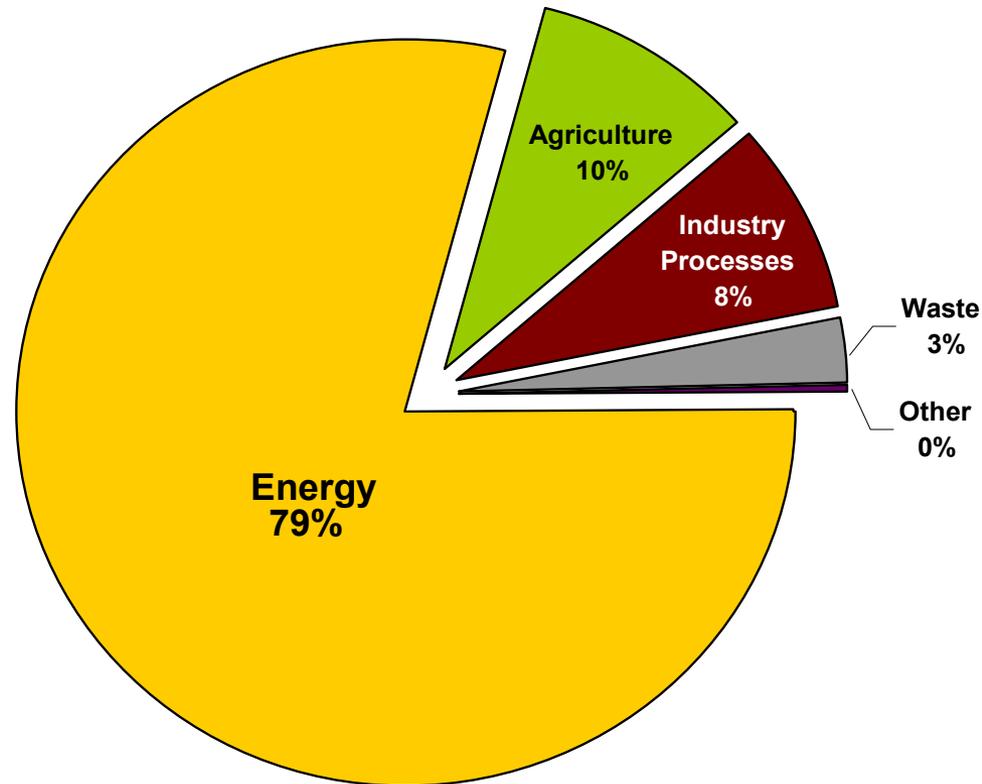
We can do better: a truly integrated EU energy market:

- 0.6% - 0.8% increase in GDP
- Each consumer to save € 100 a year by switching supplier/tariff

Achieving renewable and energy efficiency targets

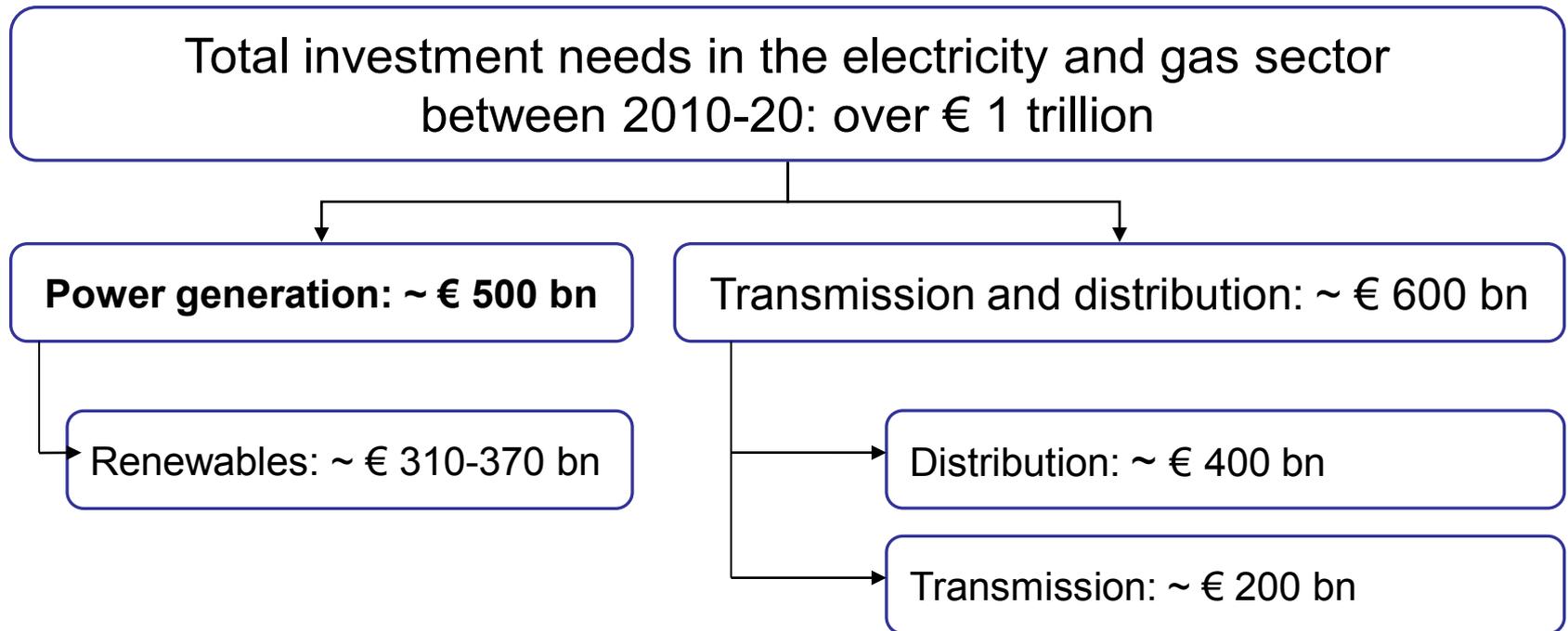
- 5 million more jobs by 2020

Energy is also a major source of GHG emissions



Share of greenhouse gas emissions in 2008

Massive modernisation investment is needed



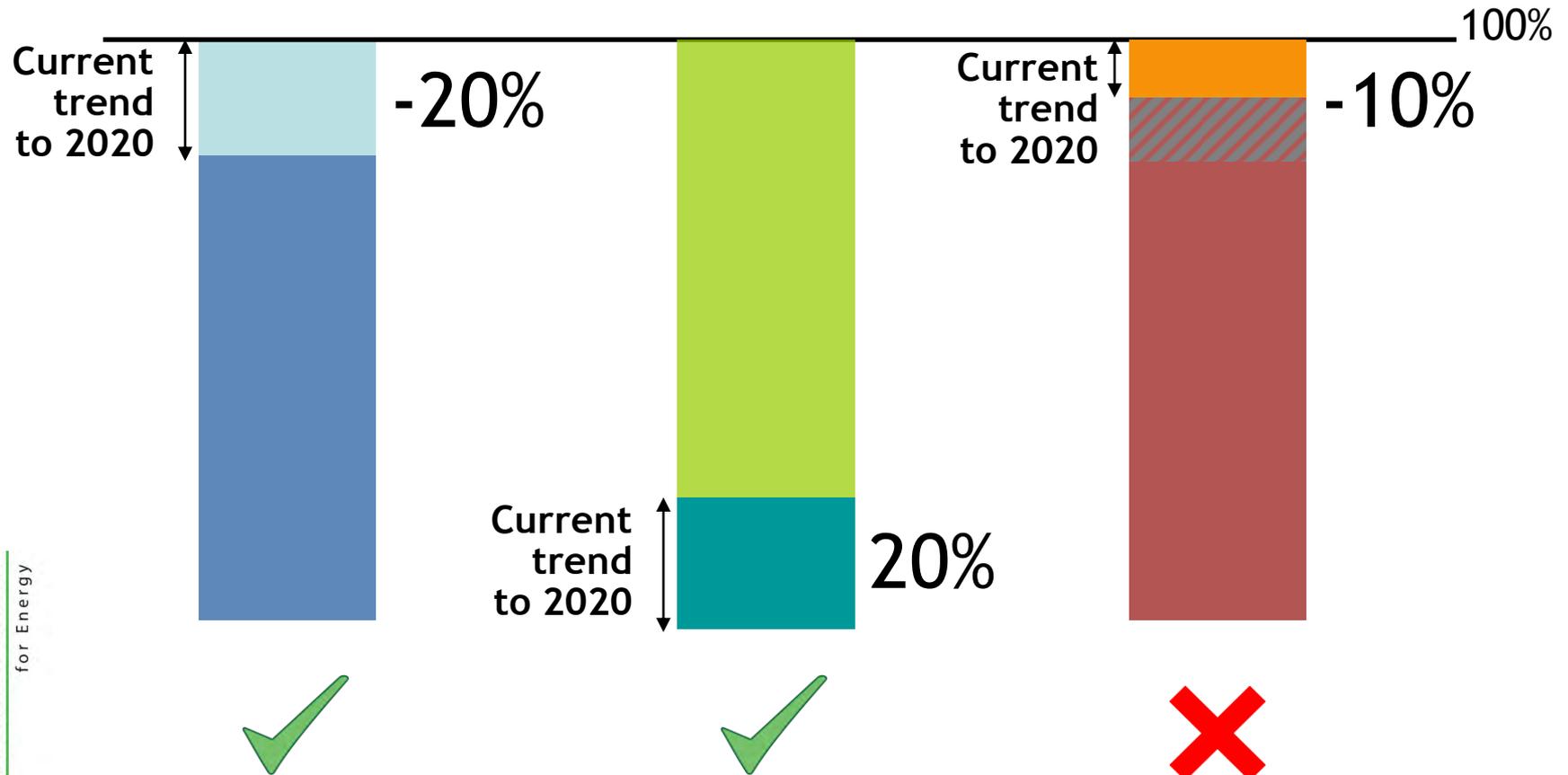
Investments of over € 1 trillion will be needed by 2020 to replace obsolete power plants, to modernise and adapt infrastructure to the latest technologies and to cater for demand for low carbon energy.

Meeting our 20-20-20 goals by 2020

Reduce greenhouse gas levels by 20%

Increase share of renewables to 20%

Reduce energy consumption by 20%



ENERGY STRATEGY 2020

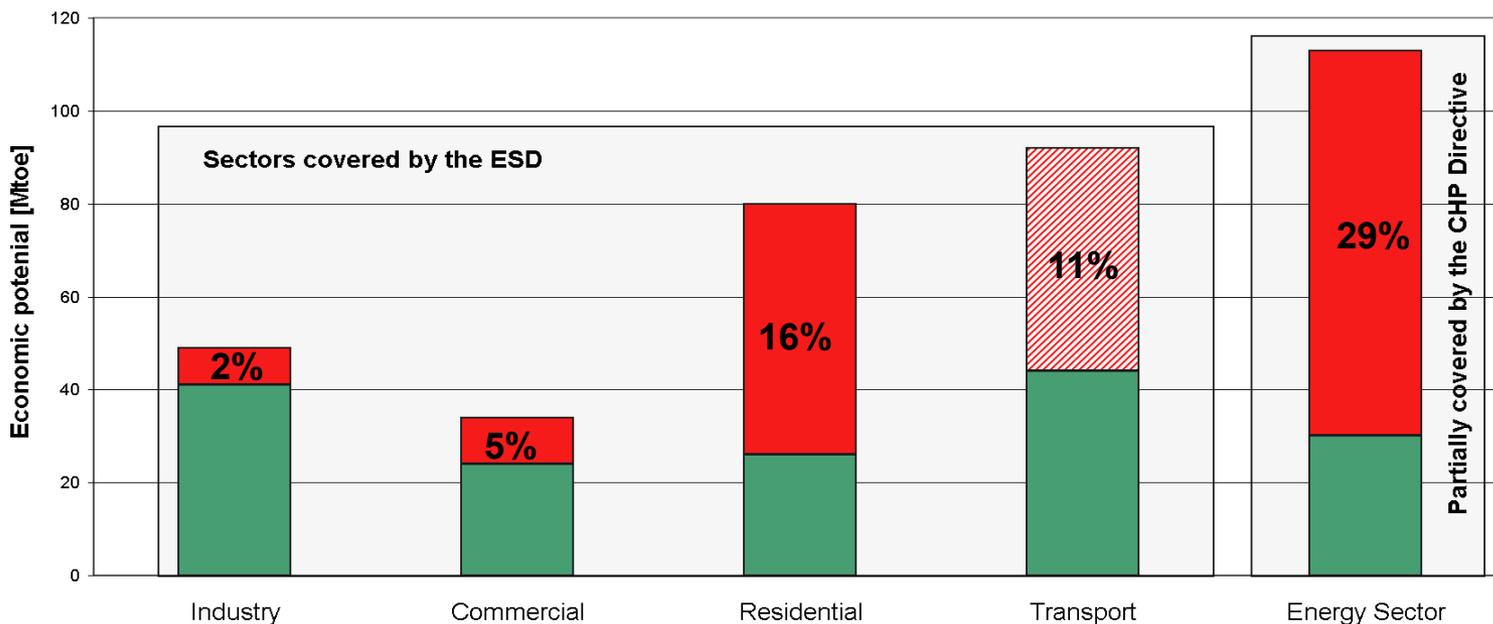
5 PRIORITIES to achieve our goals

- Efficient use of energy
- Integrated energy market
- Secure, safe and affordable energy
- Technological leadership
- Strong international partnership



Use energy better: multi-sector plan to boost energy efficiency

-  Savings expected to be achieved with already existing measures
-  Remaining saving potential to be addressed with new measures



Complete the internal energy market by 2014



- **Energy markets remain highly concentrated:**
 - need to encourage new entrants and independent suppliers
 - need to give consumers (business and households) a choice

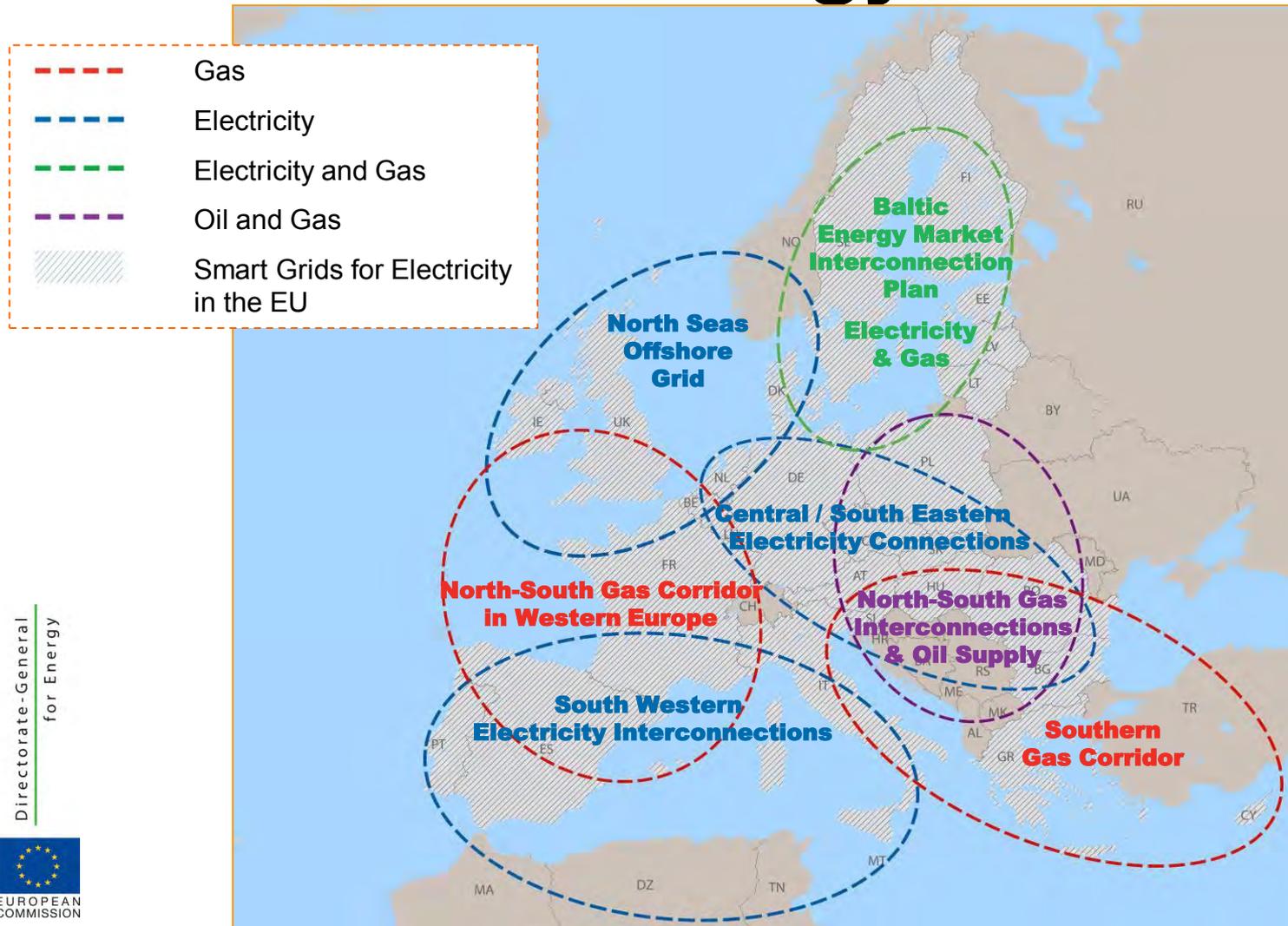
- **Private actors need legal certainty and adequate market design to plan and invest**

- **EU needs:**
 - Integrated and competitive energy markets
 - interconnected and smart infrastructure

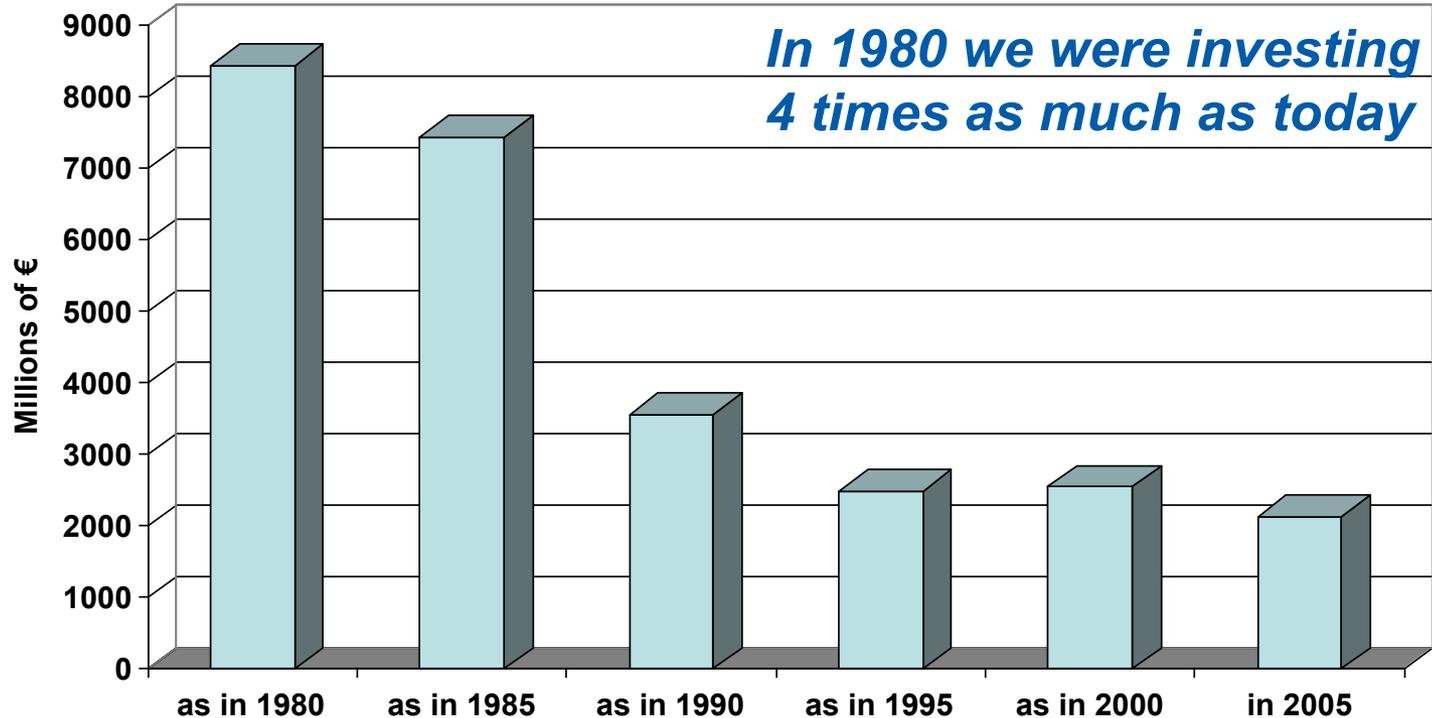
Modernise networks

Integrate renewable

Interconnect energy islands



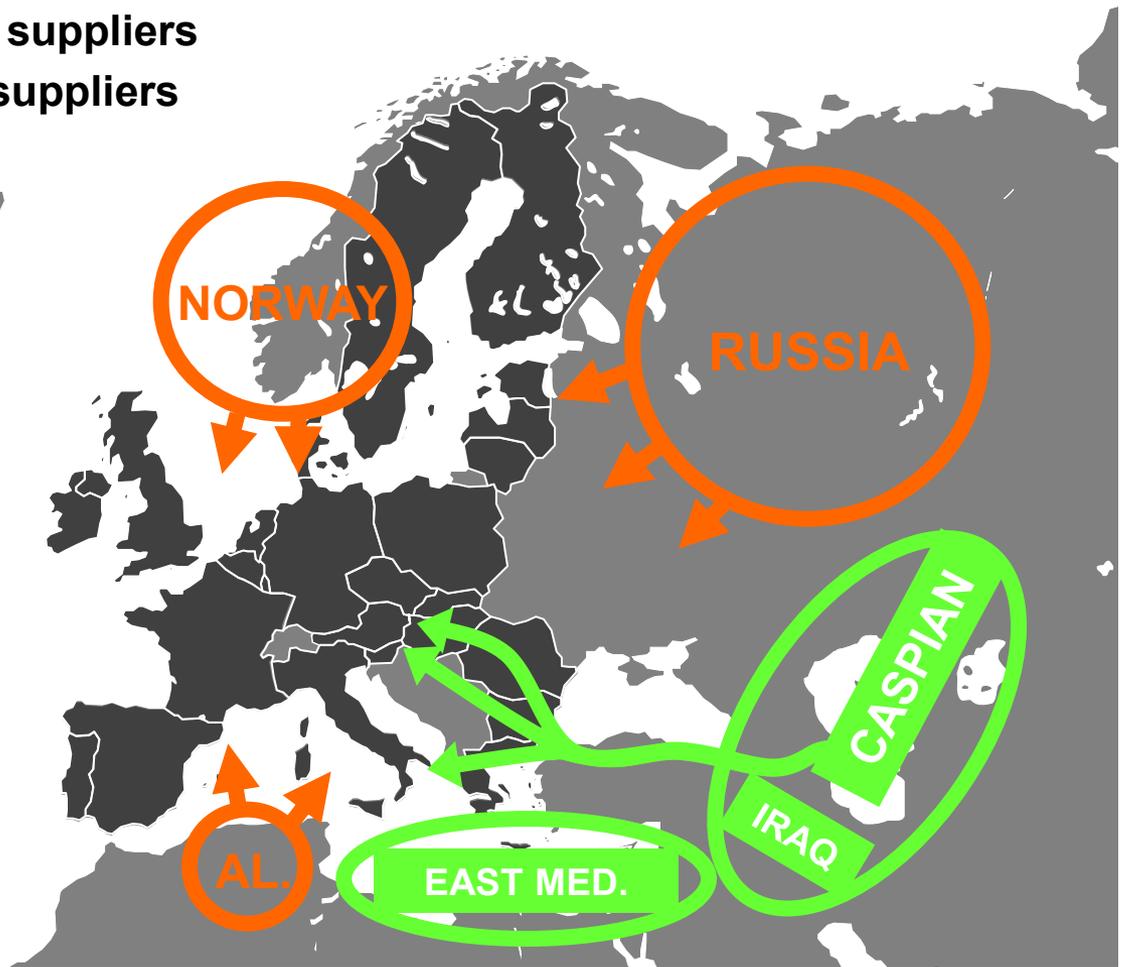
Invest & innovate



Source: European Commission

Smart grids, renewable energy, energy efficiency, carbon capture and storage, safe systems... We need to invest €50 billion in energy technology in the next 10 years

Secure our supplies

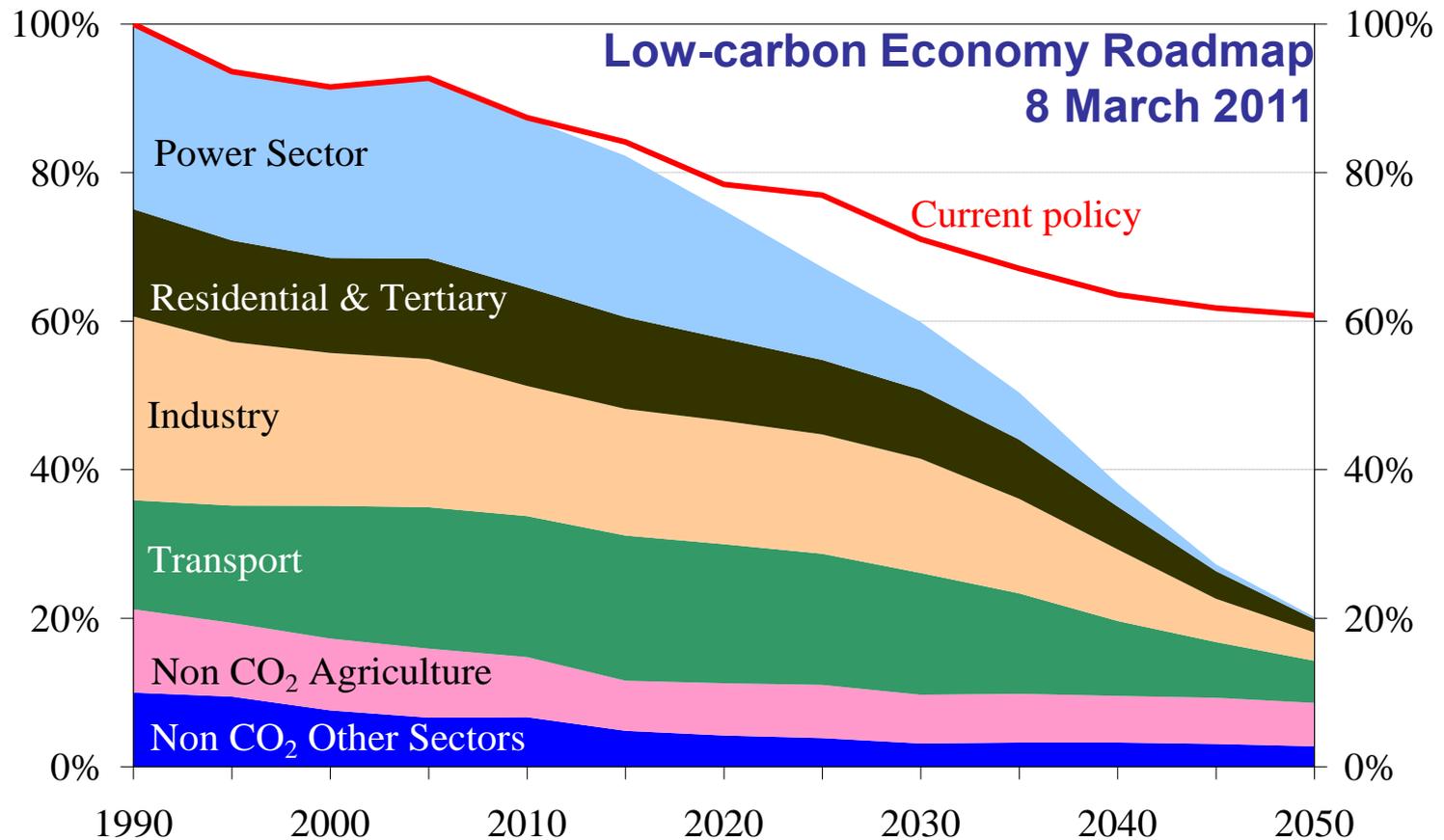


* LNG: Liquefied natural gas (Qatar, Algeria, Nigeria, etc.)

Source: European Commission

The EU is the largest global energy importer: diversify sources and routes and coordinate on all agreements with third countries is vital

Prepare 2050: the transition to a decarbonised energy system



The EU committed to reducing GHG emissions to 80-95% below 1990 levels by 2050 in the context of necessary reductions by developed countries as a group. Current policies will only lead to a 40% reduction of emissions.

Decarbonisation of the energy system: what to expect?



- Reduction of energy consumption through energy efficiency improvements
- Power generation almost carbon free by 2050
- Greater role for electricity in energy supplies, notably in transport and heating & cooling
- Greater penetration of renewable energy
- Reduced import dependency and external fossil fuel bill
- Massive investments in generation capacity and grids to ensure stable and reliable energy supply
- Transition from high fuel / operational expenditure to high capital expenditure



Thank you for your attention!

More info on

http://ec.europa.eu/energy/index_en.htm

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