



The new energy and climate package of the European Commission



20% Renewables in the EU by 2020

**Kicking off Carbon Capture and Storage
in the EU**

SB26 In-session workshop, Bonn, 15 May 2007

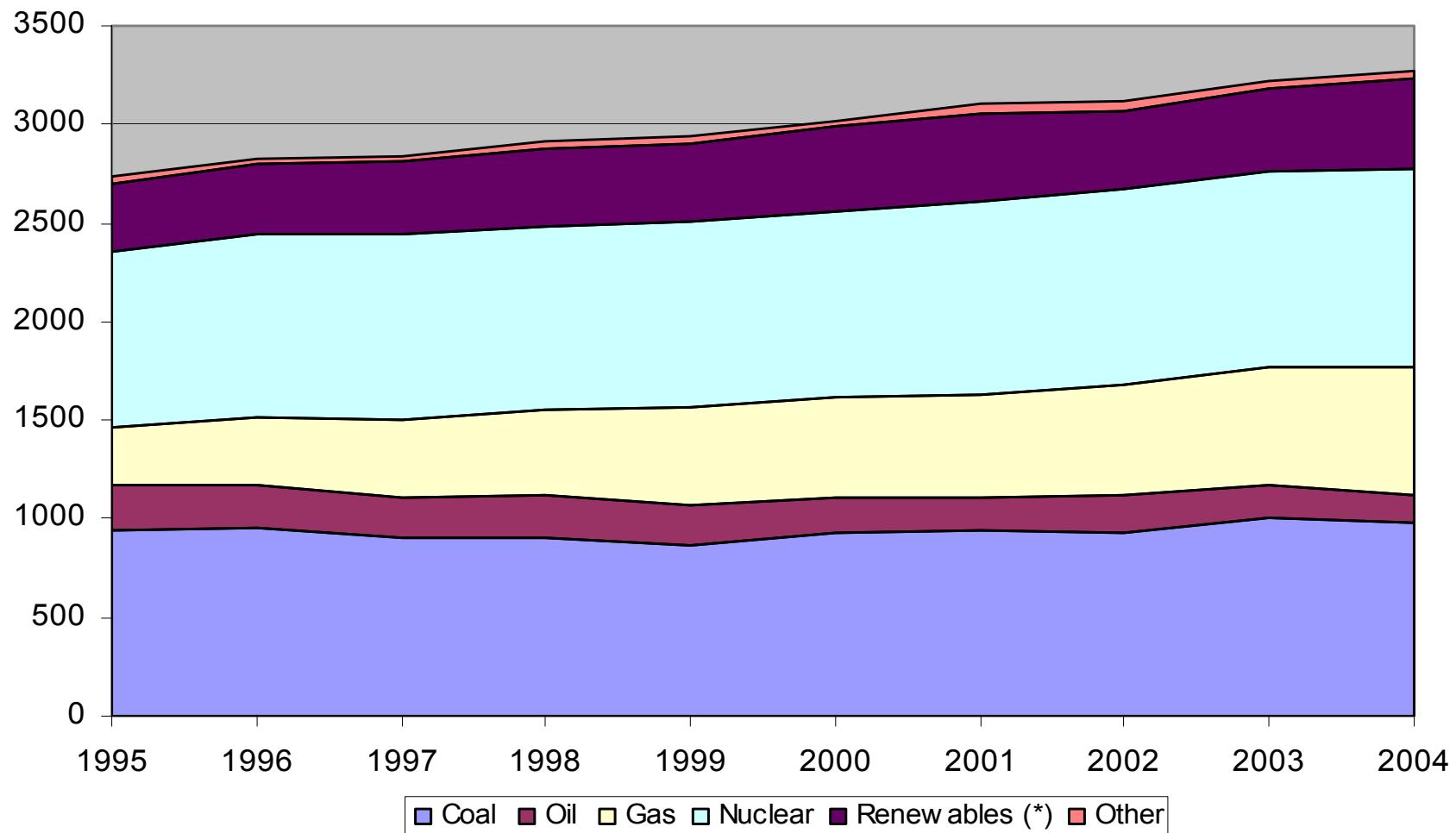
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Electricity generation by fuel, EU 27 (in TWh) (Baseline)

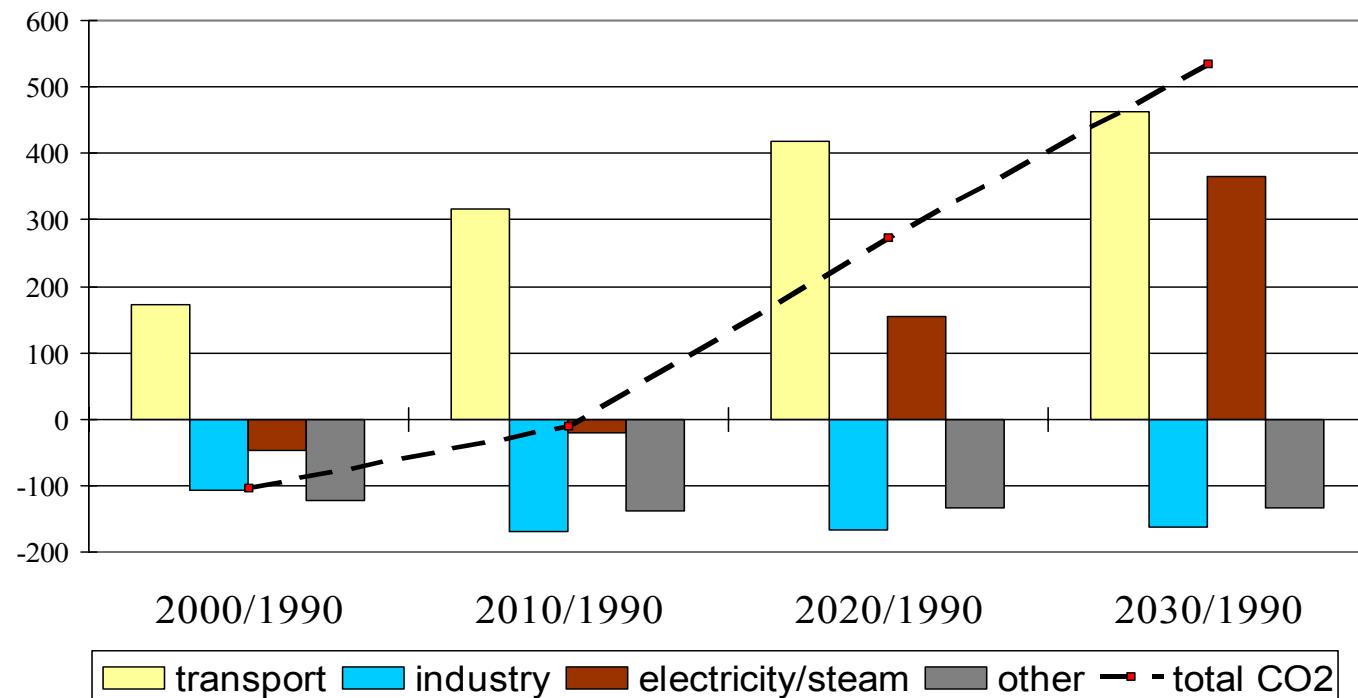




CO₂ emissions from energy

TRENDS IN CO₂ EMISSIONS up to 2030 without any additional CO₂ mitigation measures

Mt CO₂ – relative to 1990 (Baseline)





1. A binding EU renewables target



Renewable Energy Roadmap

- Increase share of renewables in EU energy mix to 20% by 2020;
- Minimum 10% biofuels in each Member State.

Endorsed by European Council, March 2007



Costs of reaching a 20% share of renewable energy in 2020

Additional cost	Oil price by 2020
€18 Bn	\$48/barrel
€10,6 Bn	\$78/barrel

Annual additional costs vary according to finance mix, technology choice, research and competition within the sector and international prices for conventional energy sources



Benefits of reaching a 20% share of renewable energy in 2020

- Annual CO2 emission savings of 600-900 Mt from 2020 onwards and air quality benefits.
- Annual reduction in fossil fuel demand of approximately 250 Mtoe from 2020 onwards, diversification and increase of domestically produced fuels.
- Keep the global leadership role of EU renewable energy. Increase current €20 billion turnover and 300.000 jobs created.



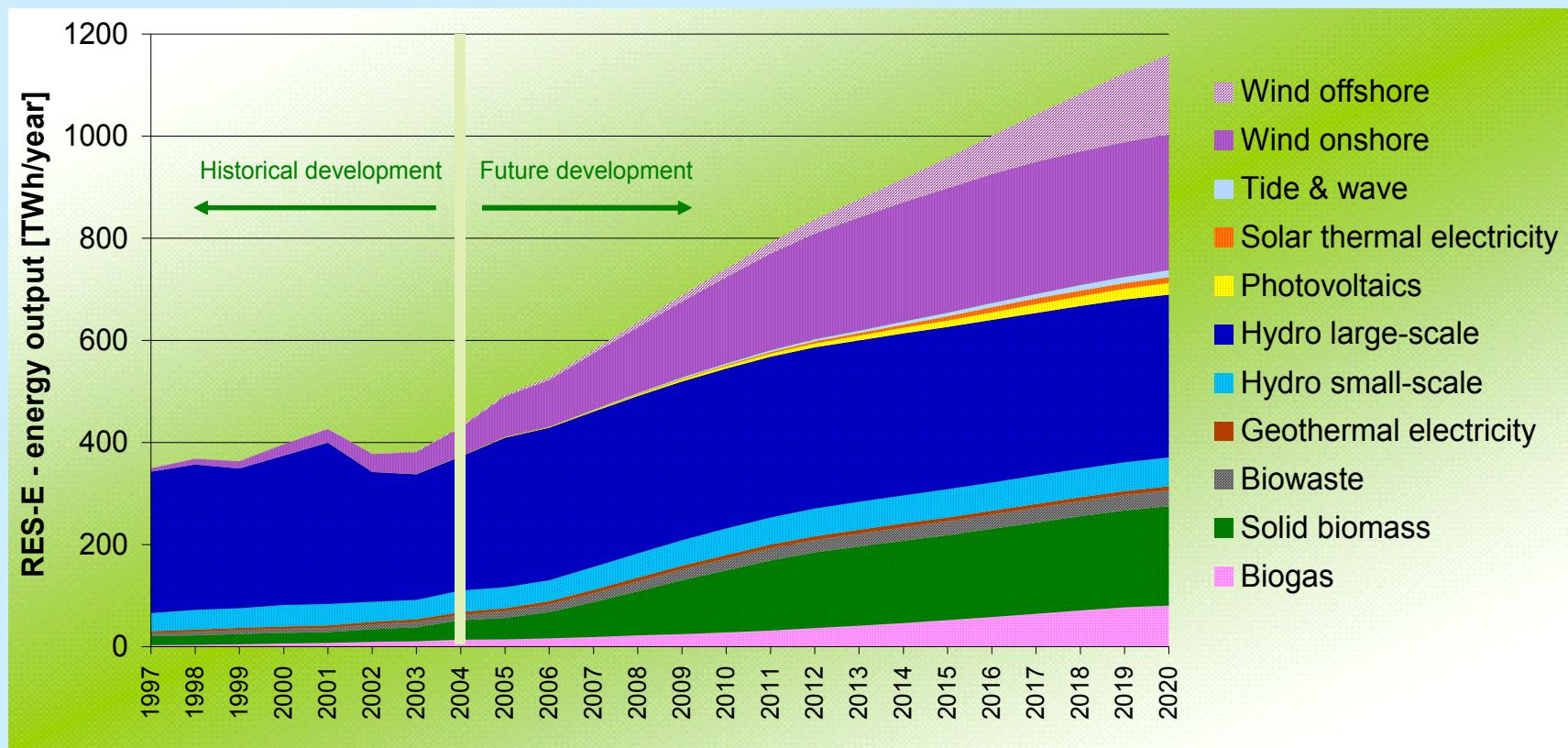
EU Measures to meet the renewables challenge

- Legislative proposal Nov 2007
- RTD Framework Programmes
- Strategic Energy Technology Plan
- Priority interconnections and European coordinator for offshore wind network
- Unbundling to open up to new providers
- Intelligent Energy for Europe
- Maritime Policy for offshore wind
- Agriculture policy for biomass
- Regional policy...



How do we get there?

Renewables growth: Electricity projections by 2020





2. A Strategic EU Energy Technology Plan (SET Plan)



Why an SET Plan?

- The Energy and Climate Change challenge
- The insufficient scale of the current effort
- Need to transform energy research and innovation system to accelerate market take-up



Key elements of SET Plan

1. Identify and propose "Large-scale target-oriented European Initiatives" to boost developments
 - e.g. wind, biofuels, energy efficiency in buildings, nuclear fission, carbon capture and storage, fuel cells and hydrogen, European grid, basic research
2. "Structural measures" to provide stability and high political profile to energy technologies in the medium and long term.
 - The SET-Plan could propose an EU structure for European energy research and innovation, progressively leading to joint planning, coordinating, monitoring, and evaluating of European and national programmes and initiatives
 - In addition, a number of support measures could facilitate these developments, e.g. technology watch, capacities watch, low carbon technologies information system, information and acceptance campaigns, etc...



3. Supporting Demonstration Projects in Sustainable Power Generation from Fossil Fuels



EU support to large-scale CCS demonstration projects

General objectives:

1. Enable coal (gas) to remain in energy mix
2. Contribute to mitigation of CO₂ emissions

Specific objectives:

1. Having in place ~12 demo plants by 2015
2. Proving economic viability of the concept by 2020



Key hurdles to CCS demos at present

- Regulatory framework
- Completion of technology development (especially for capture)
- Size of each investment
- Increased operating costs
- Missing CO₂ infrastructure



Actions Needed

- 1. Enabling regulatory framework for CCS**
 - Removal of barriers to CCS
 - Basic legislative framework for CCS
- 2. Coordination of R&D and demonstration efforts of EU and Member States**
- 3. Providing incentives addressing CCS economics**
 - ETS as the key instrument
 - Additional instruments, esp. for up-front investment (EIB, EBRD, SFs&CF)
- 4. Ancillary initiatives**
 - capture-readiness, retrofitting schedule, CO₂ infrastructure

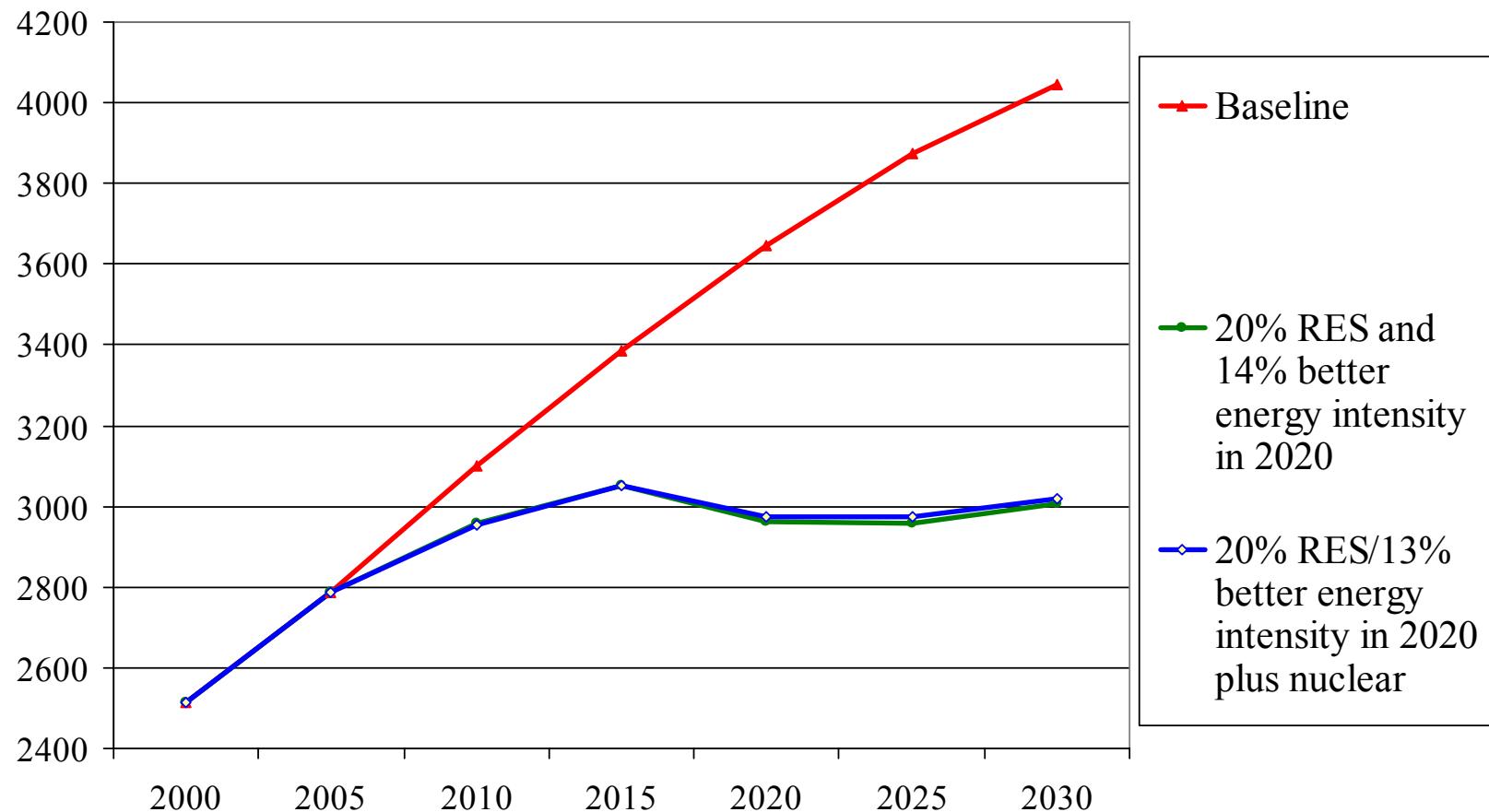


CCS - Next Steps

1. Commission's proposals for regulatory changes
2. Impact Assessment of options for EU involvement
3. Formalizing support mechanism(s)
4. Clarifying capture-readiness and CCS obligations



The potential to change trends





**All documents on the climate and energy package
are available on:**

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