



get to grips with
**climate
change**



The Power of the Example: The evolution of EU climate change policies up to 2020

Washington, 26 September 2007

Artur Runge-Metzger

European Commission

Head of Unit 'Climate strategy,
international negotiation and
monitoring of EU action'



Outline

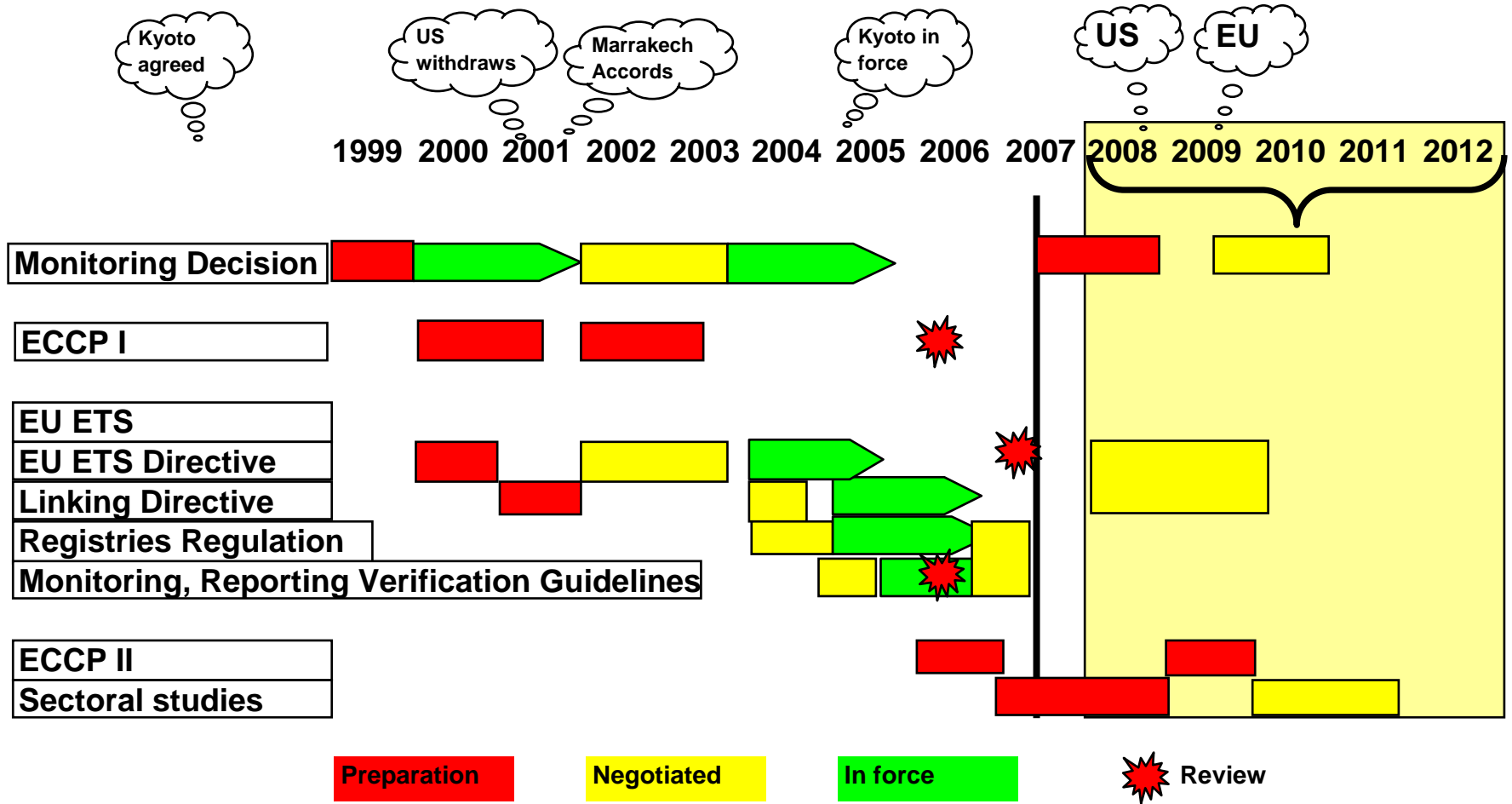
- Policies: what initiatives have we taken?
- Performance: what have we actually achieved?
- Plans: what next?



Policies - what initiatives have we taken?



Evolution of EU policy





ECCP I: Progress so far (EU-15)

Selected Measures	Reduction potential (Mt CO ₂ -eq. p.a.) EU-15, 2010	Entry into force	Starting to deliver
EU emission trading scheme	146	2003	2005
Link JI/CDM to emission trading (off-sets)	(max. 187.5)	2004	2007
F-Gases Regulation and Directive on Mobile Air Conditioning	23	2006	2008
Directive on the promotion of electricity from renewable energy sources	100-125	2001	2003
Directive on the promotion of CHP	65	2004	2006
Directive on energy performance of buildings	35-45	2003	2006
Directive on the promotion of transport bio-fuels	35-40	2003	2005
Directive on the promotion of energy efficiency and energy services	40-55	2003	2006
ACEA voluntary agreement	75-80	1998	1999
Energy labeling directives	20	1992	1993



Substituting fossil fuels: relevant EU legislation

- White Book “Energy for the Future” (1997)
 - Increase share of renewables in primary energy production from 5.4 % (1996) to 12 % (2010)
- Directive Renewables in electricity production (2001)
 - Increase share from 14 % (1997) to 22 % (2010, EU-15) bez. 21% (EU-25)
 - Feed in tariffs, green certificates, tax holidays, grid access
- Directive Biofuels (2003)
 - Increase from 2 % (2005) to 5.75 % (2010)
- Directive Energy Taxation (2003)
 - Reduce energy taxes on biofuels
- Directive Combined Heat and Power (2004)
 - Increase from 10 % (2000) to 18 % (2010)
 - Grid access, subsidies to highly efficient CHP, certificates, fuel neutral



Main elements of F-Gases Regulation and MAC Directive

Regulation

1. MS can maintain or introduce stricter national measures
2. Containment and recovery measures
3. Training and Certification
4. Data reporting requirements
5. Labelling provisions
6. Marketing prohibitions and use restrictions
7. MS may retain stricter national marketing restrictions existing on 31.12.05 for four years after entry into force

Mobile Air-conditioning Directive

8. Prohibition on HFCs > 150 GWP in Mobile Air Conditioning in motor vehicles



Energy Crops

- The Regulation makes available € 45 per hectare in aid to producers of energy crops - crops intended for the production of biofuels or electric and thermal energy. (The guarantee relates to a maximum area of 1.5 million ha in the EU, if it is exceeded, the aid is reduced proportionately.)
- Total area supported in 2004 was around 300 000 hectares and nearly 570 000 hectares in 2005 (about 38 % of the maximum guaranteed area).
- In 2006, an estimated 1,2 million hectares received support
- At the end of 2006, the energy crop scheme was reviewed and the scheme was opened to NMS and the MGS extended accordingly to 2 million hectares.

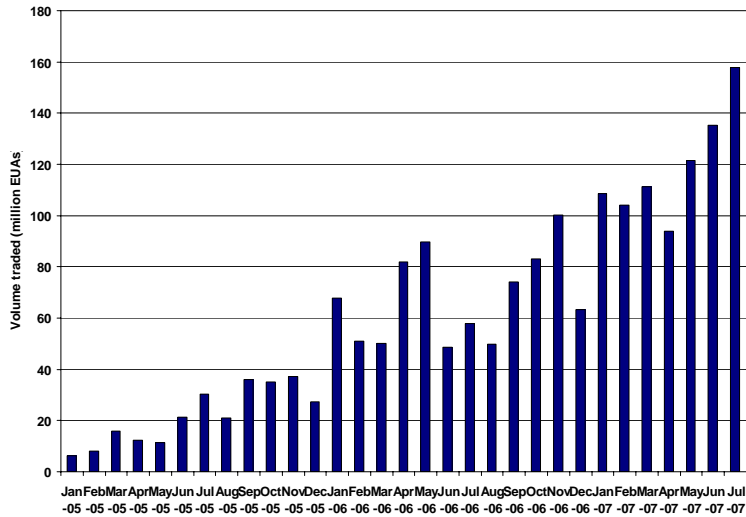


Engaging private sector: The EU Emissions Trading Scheme

- Least cost solution - promoting energy efficiency, operational changes, take-up and improvement of clean technologies
- Worldwide largest emissions trading scheme started on 1 January 2005 with a learning phase from 2005 – 2007 in all 27 Member States
- Covers 40 – 50 % of EU CO₂ emissions
- ~10,500 installations covering CO₂ emissions from electricity generators, heat & steam production, mineral oil refineries, ferrous metals production & processing, cement, lime glass, bricks and ceramics, pulp & paper sector
- Annual monitoring, reporting & verification (15 May)
- Compliance penalty: €100 per t CO₂
- Open scheme: links with emission reduction projects abroad (Clean Development Mechanism & Joint Implementation)
- Assessment of National Allocation Plans for the Kyoto period (2008 – 2012) almost completed: Reduction of 146 Mt CO₂ p.a. of EU-15, and limit of JI/CDM of 187.5 Mt CO₂ p.a.
- Review of the EU ETS (proposal before end 2007)

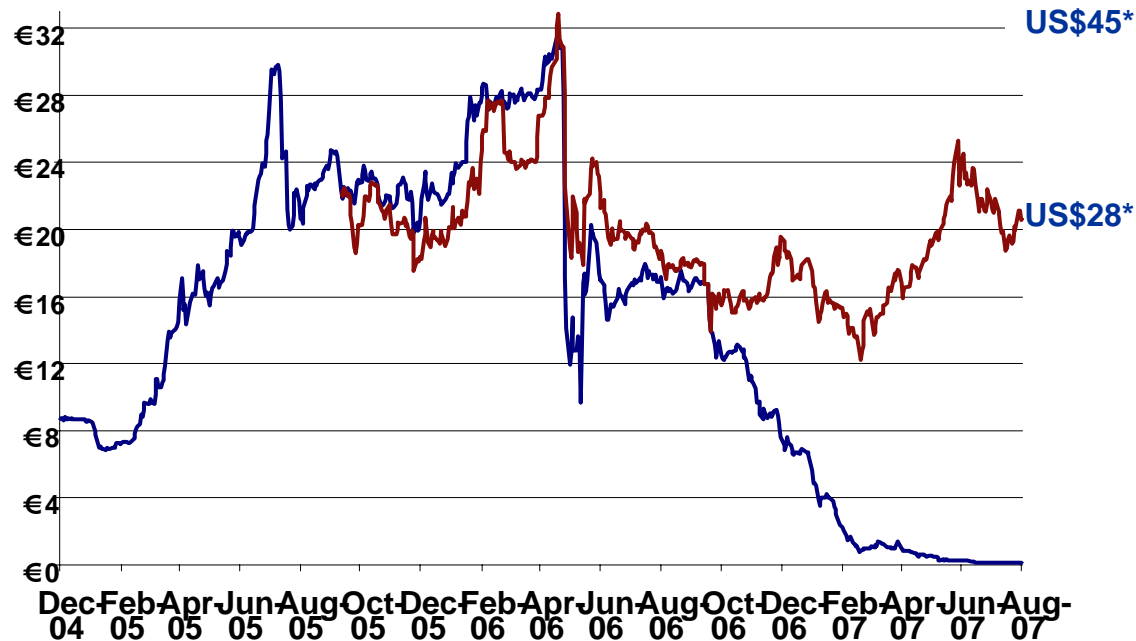


Development of EU ETS allowance trading, Jan 2005 – Aug 2007



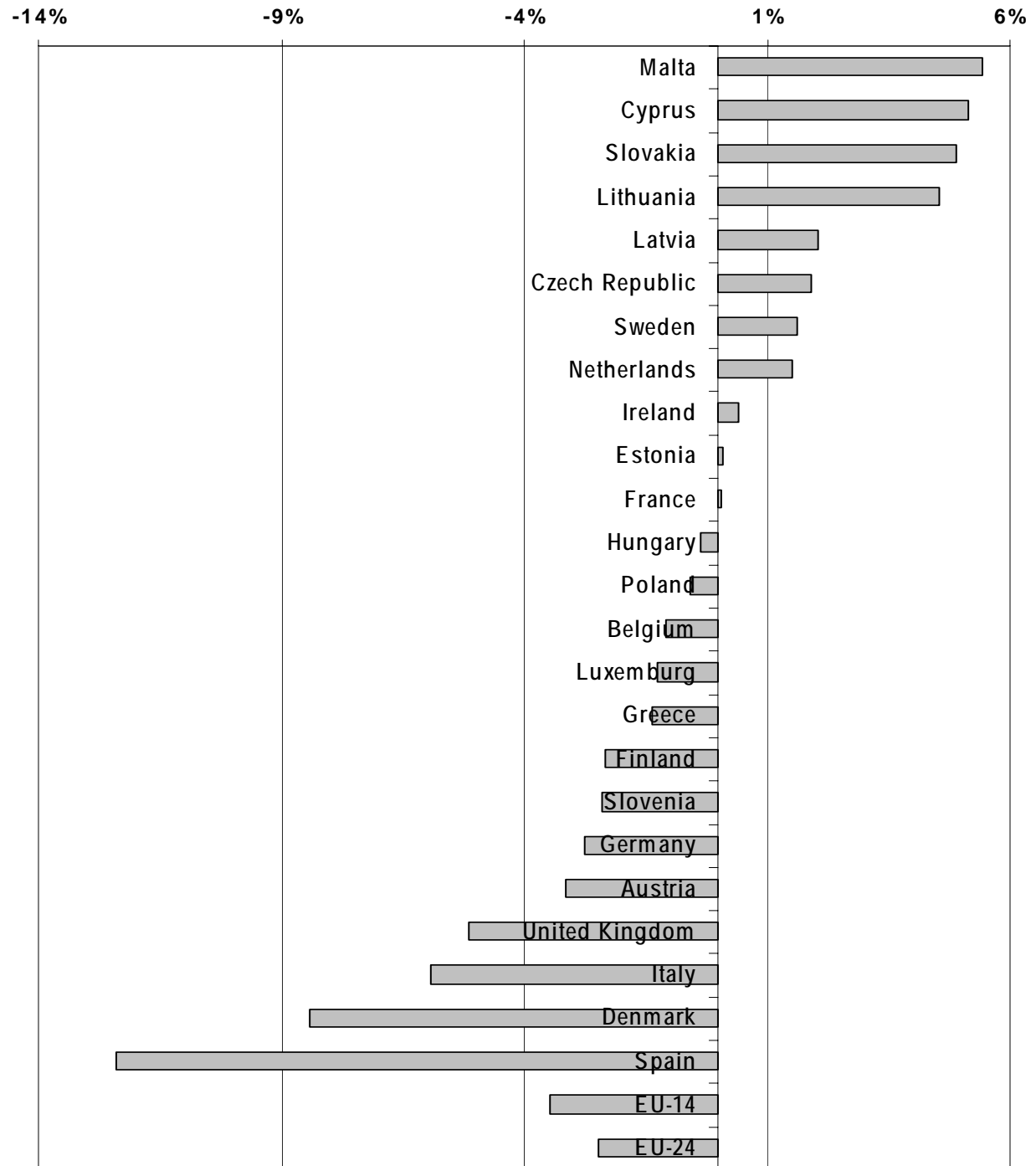
Volumes of allowances traded
(in millions)

Allowances prices
for Phase I (blue line)
and Phase II (red line)



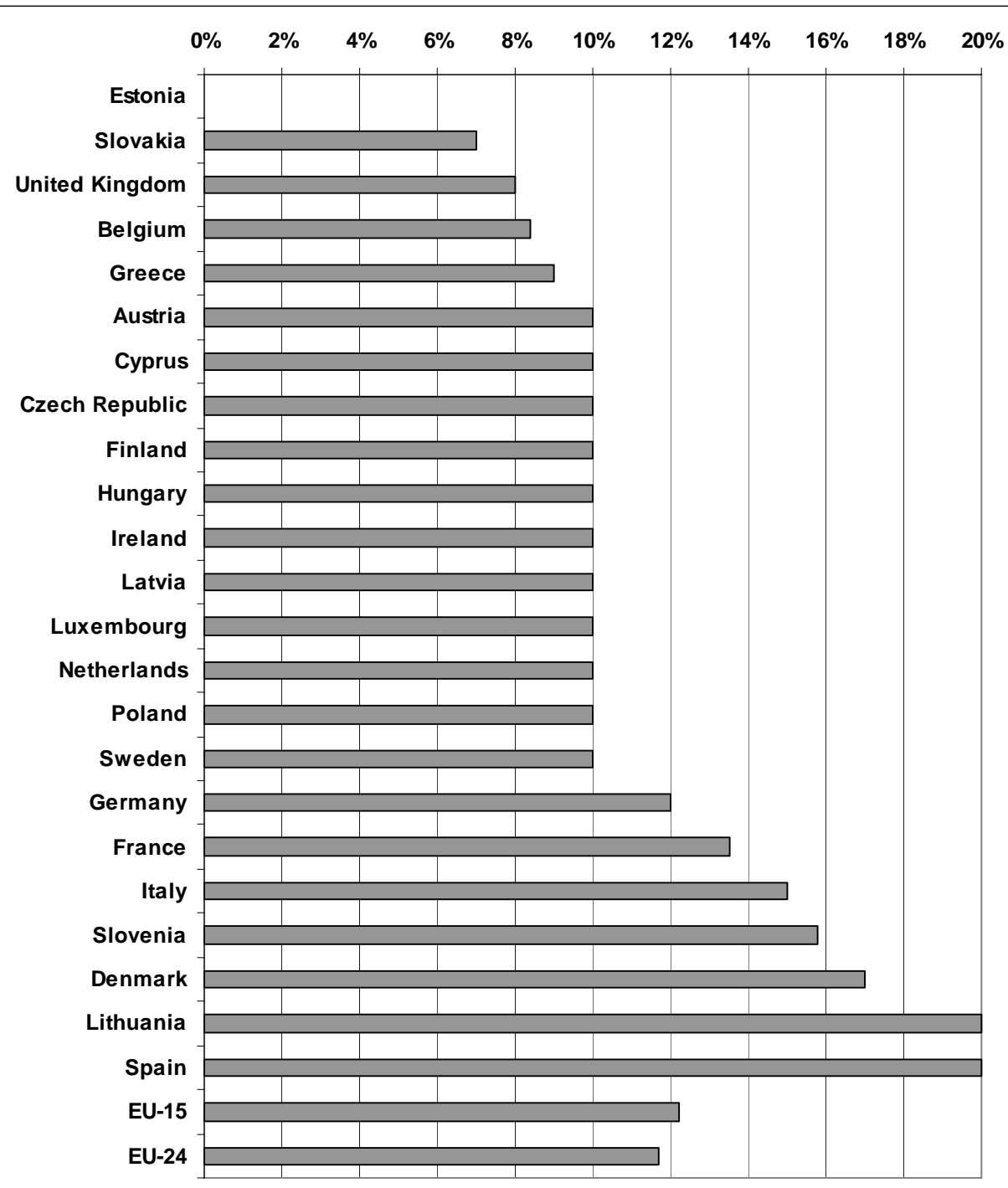


Ensuring scarcity in the EU carbon market (1): Allocation 2008-2012 vs. base year emissions





Ensuring
scarcity in the
EU carbon
market (2):
maximum use
of CDM/JI
during 2008-
2012, in % of
total allocation





Technology transfer via the global carbon market: EU Member States contribution

	Million tonnes of CO ₂ eq.
Austria	45
Belgium	35
Denmark	21
Finland	12
Ireland	18
Italy	95
Luxembourg	23.5
Netherlands	100
Portugal	29
Spain	159
Sweden	6

> 530 Million tonnes of CO₂eq (2008-2012) ~ €2.9 billion
excluding demand from companies in the EU-ETS

(in red: NAP2 decisions up to 31 August 2007)



Additional measures under ECCP II

- *ECCP I review*: integration of results in 10 January 2007 Communication "Limiting Global Climate Change to 2°C: The way ahead for 2020 and beyond"
- *Aviation*: Legislative proposal integrating aviation into EU ETS (December 2006)
- *Fuel quality directive*: Legislative proposal (January 2007)
- *CO₂ and Cars*: Communication (February 2007) and legislative proposal (end 2007)
- *Impacts and Adaptation*: Green Paper on Adaptation (June 2007)
- *Carbon Capture and Geological Storage*: Communication on carbon capture and geological sequestration (2nd half 2007)
- *EU ETS review*: Legislative proposal (end 2007)

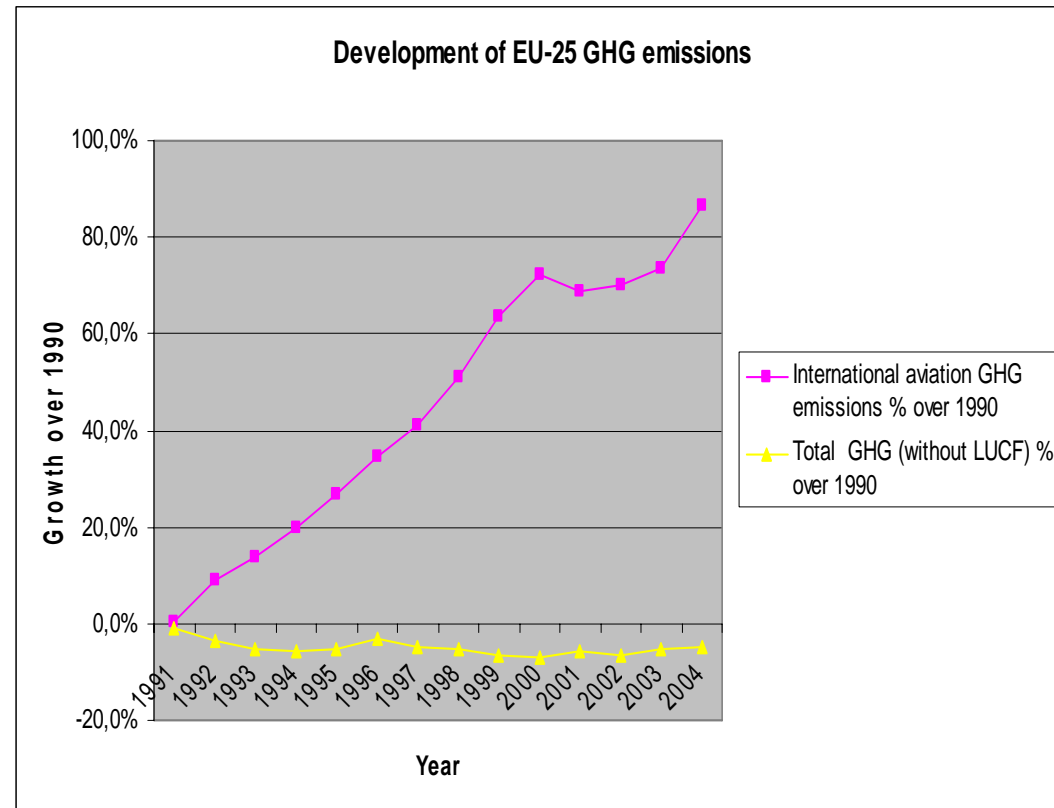
if adopted timely, these proposals will deliver for reaching the EU's Kyoto target

Post 2012



Aviation (1)

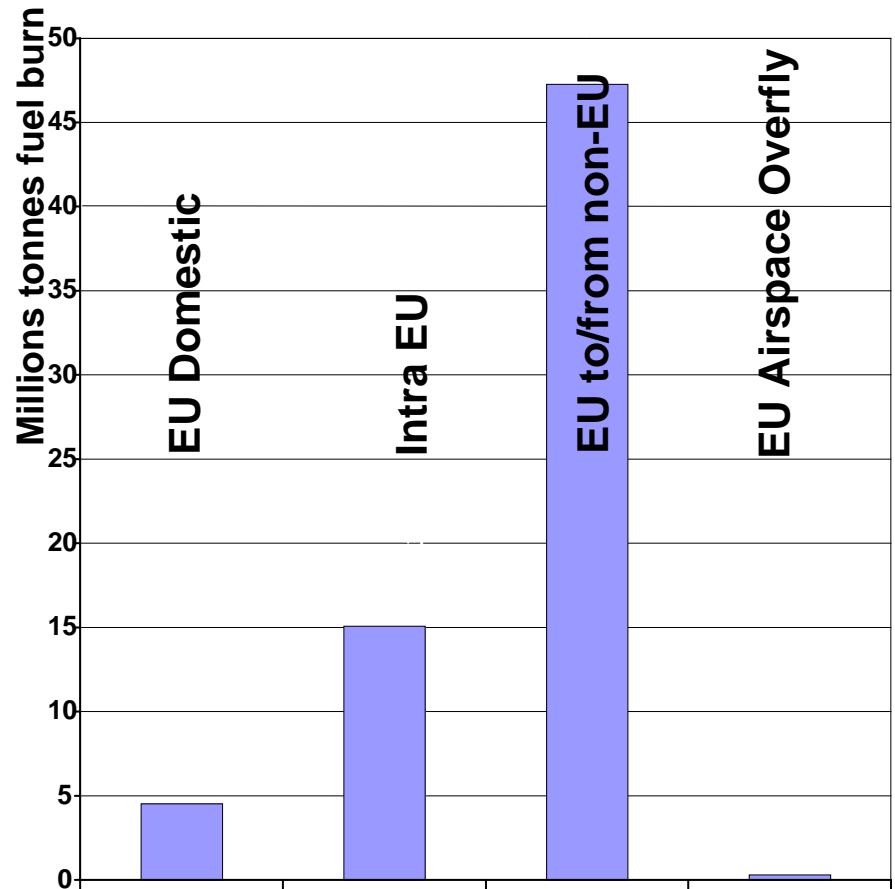
- Rapid growth in aviation emissions (87% over 1990):
 - At current growth rate aviation will be min. 6.5% of total EU GHG in 2020
- 2004 ICAO Assembly:
 - Decided not to work towards a new global legal instrument under ICAO
 - Decided to focus further work on another approach: The incorporation of international aviation into States' existing emissions trading schemes





Aviation (2)

- Proposal on aviation & ETS in Dec.'06 to implement ICAO & Kyoto decisions, but also part of comprehensive approach:
 - R&D
 - Air Traffic Management
 - Inclusion in ETS
 - ICAO engine standards
- Scope:
 - 2011: intra-EU
 - 2012: flights to/from EU
 - arriving flights excluded if 3rd country takes equivalent measures
 - JI/CDM credits can be used
- Proposal estimated to cut GHG emissions by ~183 million tonnes of CO₂ annually by 2020 compared to business-as-usual





CO₂ from light vehicles (1)

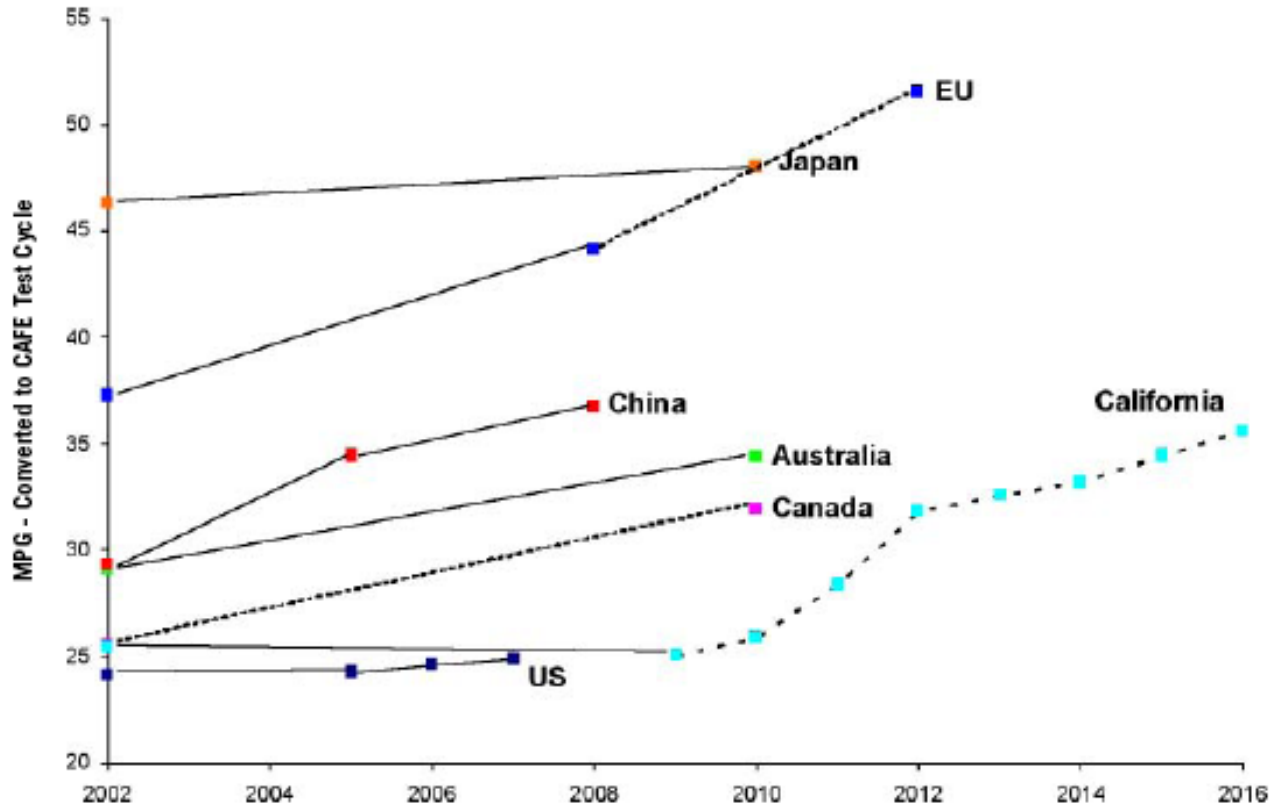
- Strategy estimated to cut transport emissions by a cumulative total of over 400 million tonnes of carbon dioxide between 2010 and 2020 from new cars and vans sold in the EU (Feb. 2007)
- Main elements:
 - average emissions from new cars sold in the EU-27 would have to reach the 120gCO₂/km target by 2012
 - for vans, the fleet average objectives would be 175gCO₂/km by 2012 and 160gCO₂/km by 2015, compared with 201gCO₂/km in 2002
 - additional measures to promote the purchase of fuel efficient vehicles, amendment to car labelling directive
 - encouraging Member States that levy road tax to base it on cars' CO₂ emissions
 - encourages car manufacturers to develop car marketing and advertising to promote more sustainable consumption patterns by mid-2007
- Further EU legislation to reduce CO₂ emissions from new cars and vans to be proposed by the Commission by end 2007-mid 2008.



CO₂ from light vehicles (2)

Comparison of fuel economy and GHG emission standards

normalized by CAFE-converted mpg



Notes: (1) dotted lines denote proposed standards

(2) MPG = miles per gallon



Transport fuels

- Transport fuels directive to reduce their contribution to climate change and air pollution and encourage the development of lower-carbon fuels and biofuels (January 2007)
- Suppliers will have to reduce GHG emissions caused by the production, transport and use of their fuels by 10% between 2011 and 2020
- This will lead to:
 - improvement in the quality of transport fuels,
 - the promotion of "second generation" biofuels that will bring bigger emission savings and better public health
- Proposal expected to cut transport emissions by a cumulative total of 500 million tonnes of carbon dioxide between 2011 and 2020



Making the EU the most innovative economy

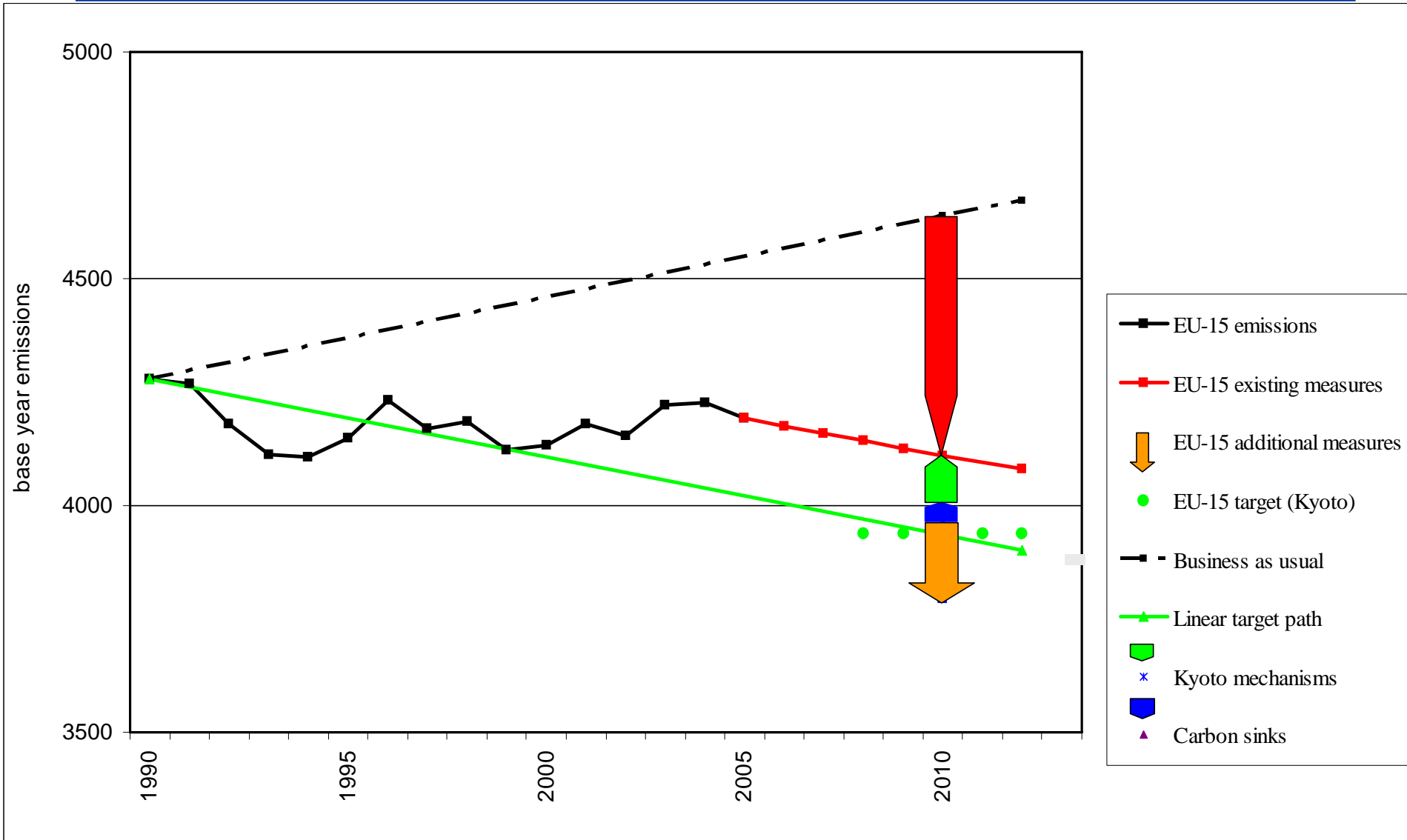
- 7th Framework Programme for Research and Technology Development (2007 – 2013):
 - Total FP-7 budget: €32.37 billion
 - Energy: €2.30 billion
 - Environment (incl. climate change): €1.90 billion
 - Transport: €4.18 billion
- EU Technology Platforms
- European Institute of Technology
- Third country participation encouraged



Performance: what have we actually achieved?

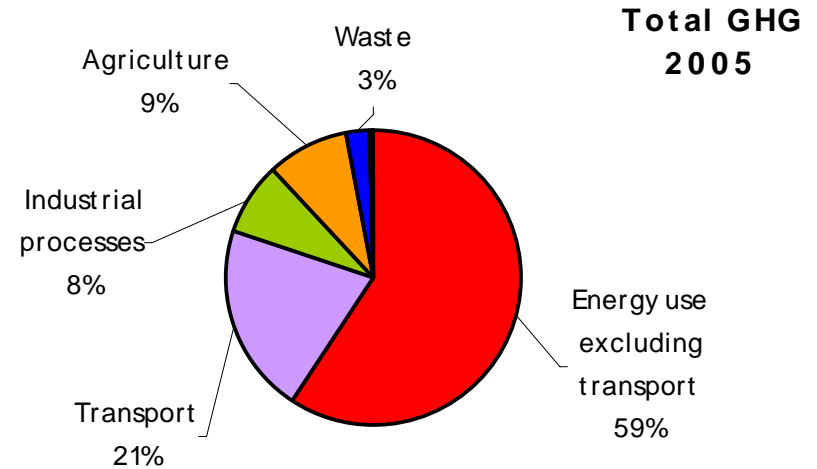
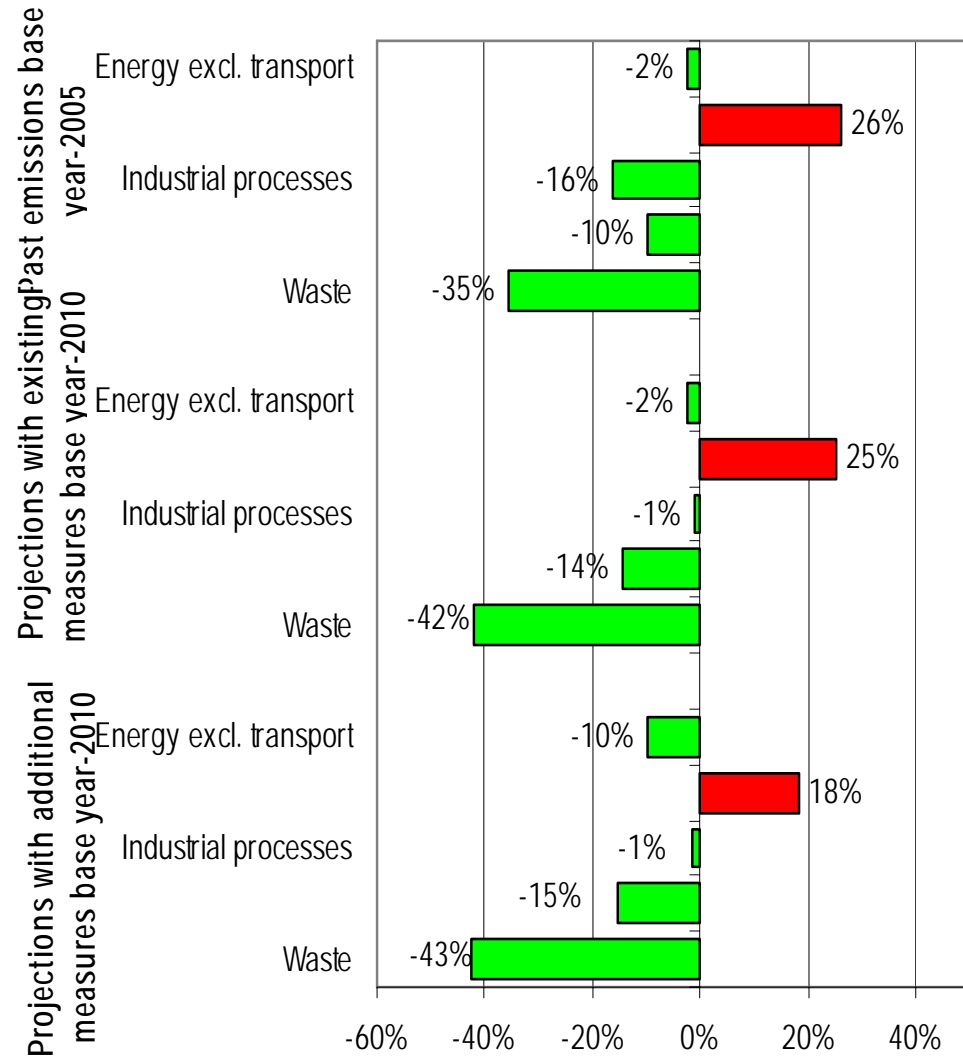


EU-15 "bubble" meeting its Kyoto commitments up to 2012



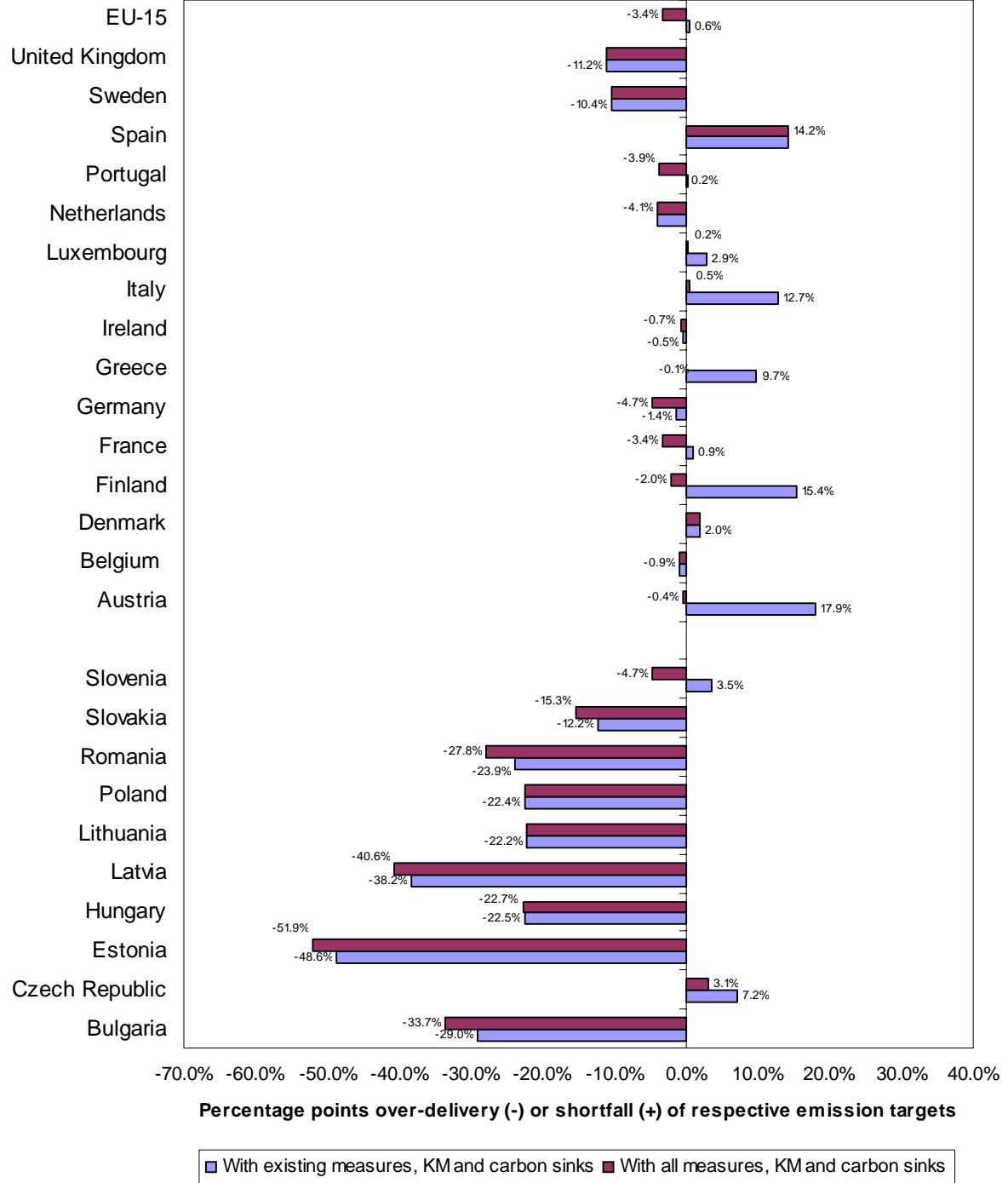


EU-15: Development of sectoral emissions since 1990



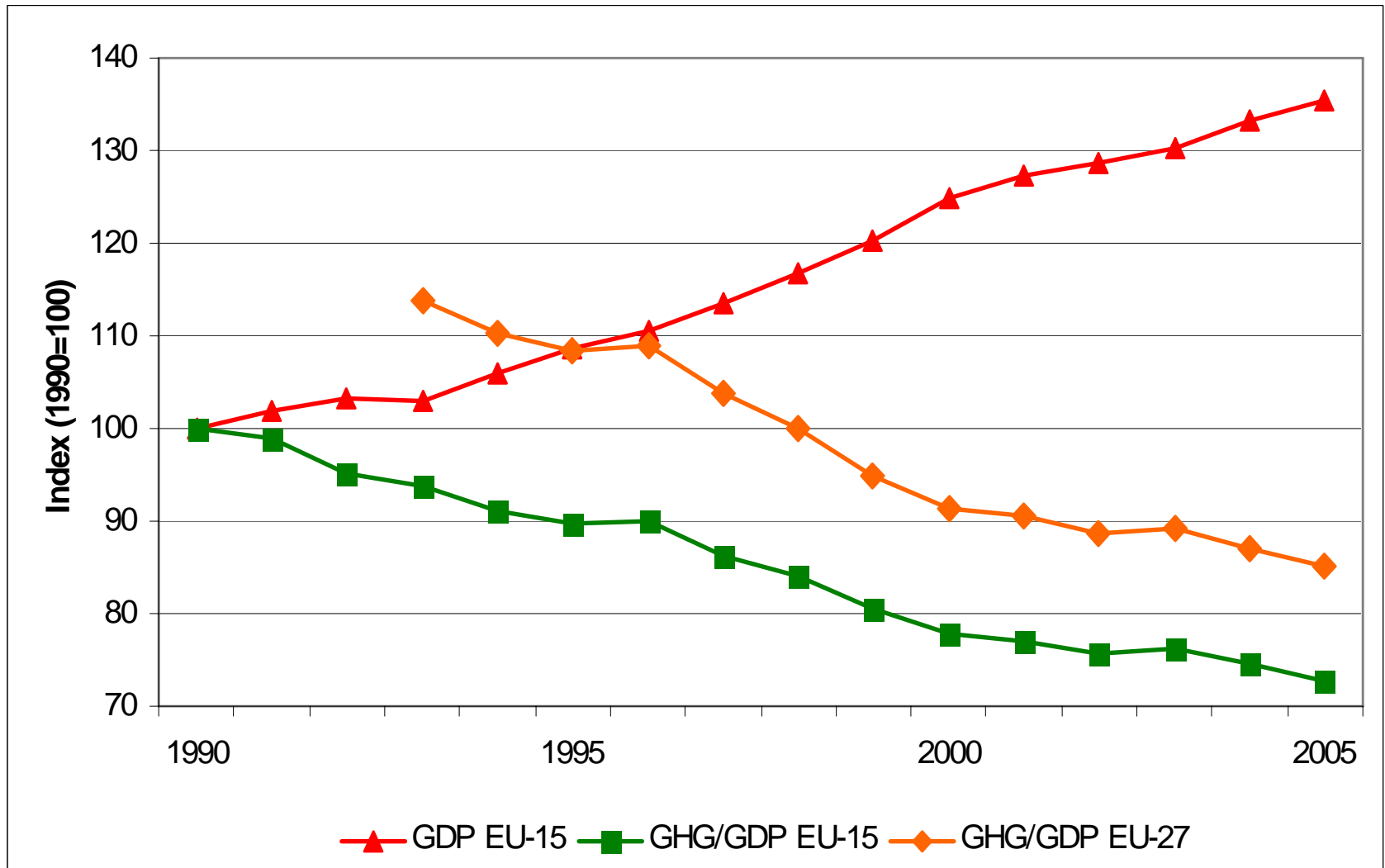


EU-25: Projections for meeting individual MS targets in 2008-2012





EU-15: Decoupling growth from greenhouse gas emissions





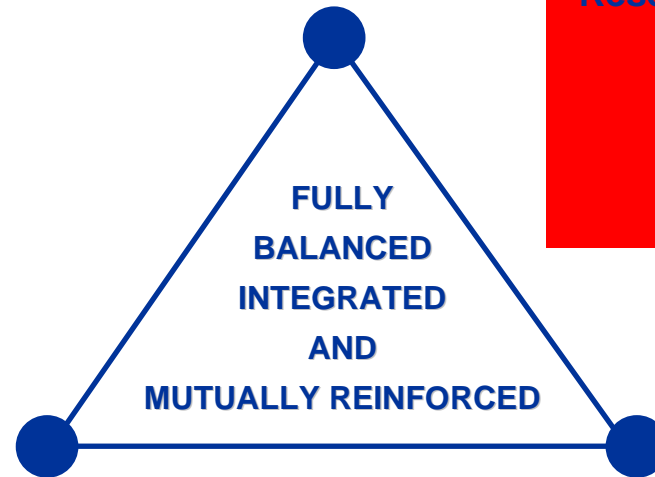
Plans: what's next?



Looking beyond 2012: three domestic challenges

Competitiveness "LISBON"

- Internal Market
- Interconnections (Trans-European networks)
- European electricity and gas network
- Research and innovation
 - Clean coal
 - Carbon sequestration
 - Alternative fuels
 - Energy efficiency
 - Nuclear



Climate security "POST-2012"

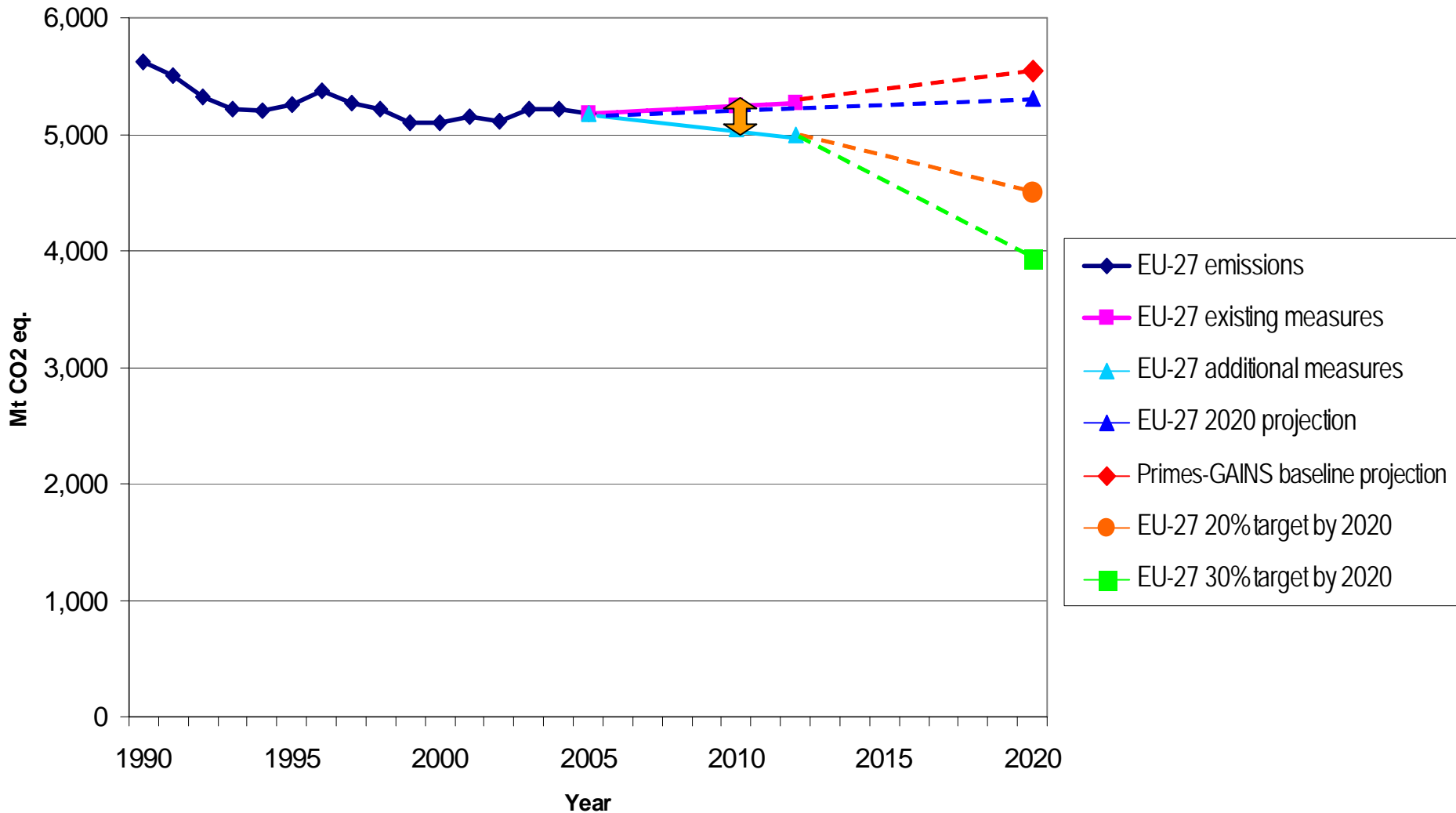
- Emissions trading
- European Climate Change Program
- Renewable energy
- Energy efficiency
- CCS
- Research and innovation
- Nuclear

Security of supply

- International Dialogue
- European stock management (oil/gas)
- Refining capacity and energy storage
- Diversification



EU-27 emissions path until 2020





EU climate action up to 2020: mitigating climate change

- **EU independent commitment: Reduce EU-27 GHG emissions by at least 20% by 2020 compared to 1990**
 - Energy Package:
 - Energy efficiency: 20% improvement by 2020
 - Renewable energy: 20% mandatory objective by 2020
 - differentiation of targets between countries
 - flexibility in target setting within a country between sectors
 - Biofuels target of 10% by 2020
 - Sustainable power generation from fossil fuels: 12 large scale CCS demonstration plants by 2015; aiming at near-zero emissions by 2020
 - Strategic energy technology plan
 - Internal market-options unbundling & regulatory powers:
 - Important for functioning EU ETS
 - Overcome hurdles for renewables
 - Nuclear: member states' choice
 - Climate Strategy:
 - EU ETS (Review, aviation)
 - Other policies (e.g. fuel quality)
 - Global carbon market (incl. CDM)
- At least -20 % CO₂**
- Up to - 5% of GHG emissions**



Energy Efficiency Action Plan

- Dynamic energy performance requirements for energy-using products, buildings and energy services
- Improving energy transformation and distribution (30% of primary energy use)
- Moving on transport (fuel-efficient cars; better use of public transport; biofuels....)
- Financing energy efficiency, economic incentives and energy pricing
- Changing energy behaviour
- International partnerships and EE agreement

6 areas, 10 priorities, 75 actions



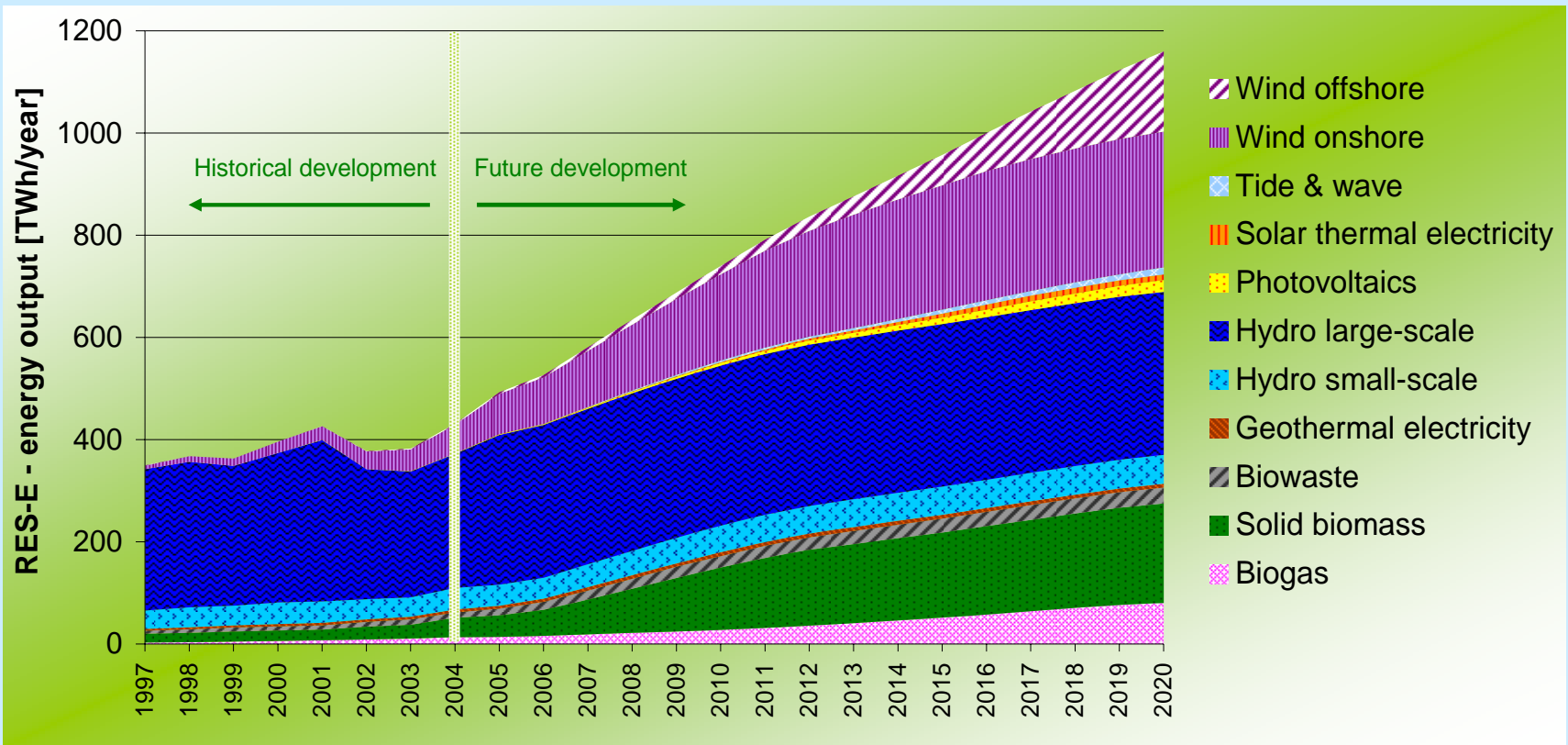
Potential energy savings until 2020

Sector	Energy consumption (Mtoe) 2005	Energy Consumption (Mtoe) 2020 (Business as usual)	Energy Saving Potential 2020 (Mtoe)	Full Energy Saving Potential 2020 (%)
Households (residential)	280	338	91	27%
Commercial buildings (Tertiary)	157	211	63	30%
Transport	332	405	105	26%
Manufacturing Industry	297	382	95	25%



Renewable energy: how do we get there?

Renewables growth: Electricity projections by 2020





Carbon Capture & Geological Storage: Next steps

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



EU ETS review (1): Outcome of the ECCP process

- Four meetings held between March and June 2007 on the four main subjects:
 - Scope
 - Monitoring, reporting, verification
 - Further harmonisation and increased predictability (incl. auctioning vs. grandfathering, sectoral allocation)
 - Linking with emission trading schemes in third countries and appropriate means to involve developing countries and countries in economic transition
- Four reports devoted to the respective meetings have been published on the EU ETS review website:

http://ec.europa.eu/environment/climat/emission/review_en.htm



EU ETS review (2): Linking Emissions Trading Schemes

38 countries listed in Annex B to Kyoto Protocol

- 25 already part of EU ETS (+ Cyprus and Malta)
- Croatia preparing for accession to EU
- Norway - EEA agreement
- New Zealand, Canada, Switzerland ...

Looking to link to non-Kyoto parties. Possible candidates:

- US Regional Greenhouse Gas Initiative, California ETS and Western Greenhouse Gas Initiative
- Australian States and Territories
- Australia
- Possible national scheme in US?

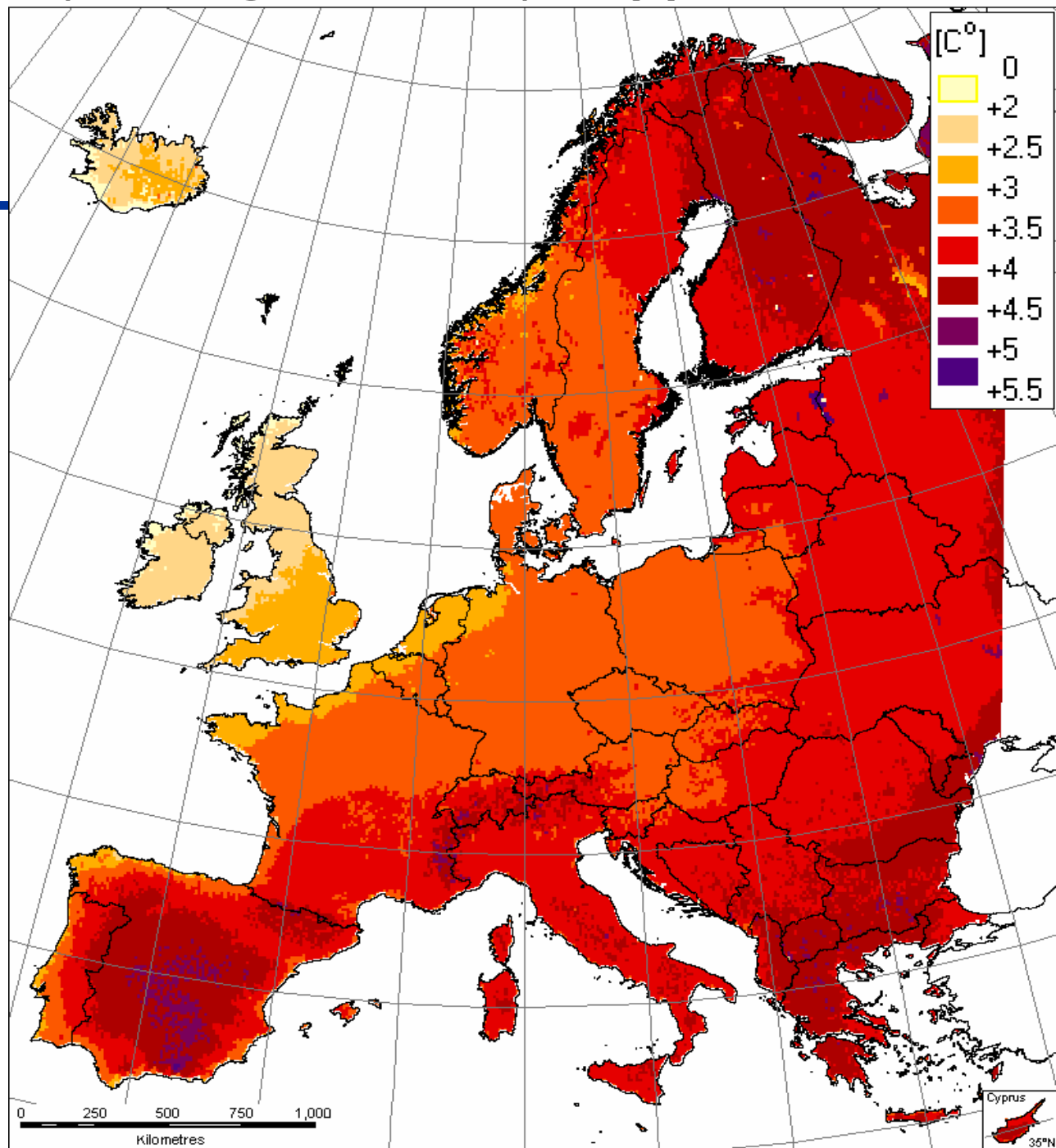


Need for adaptation in the EU (1)

Source: PESETA study 2007.

Unabated climate change: A2 scenario. Changes in 2071-2100 compared to 1961-90

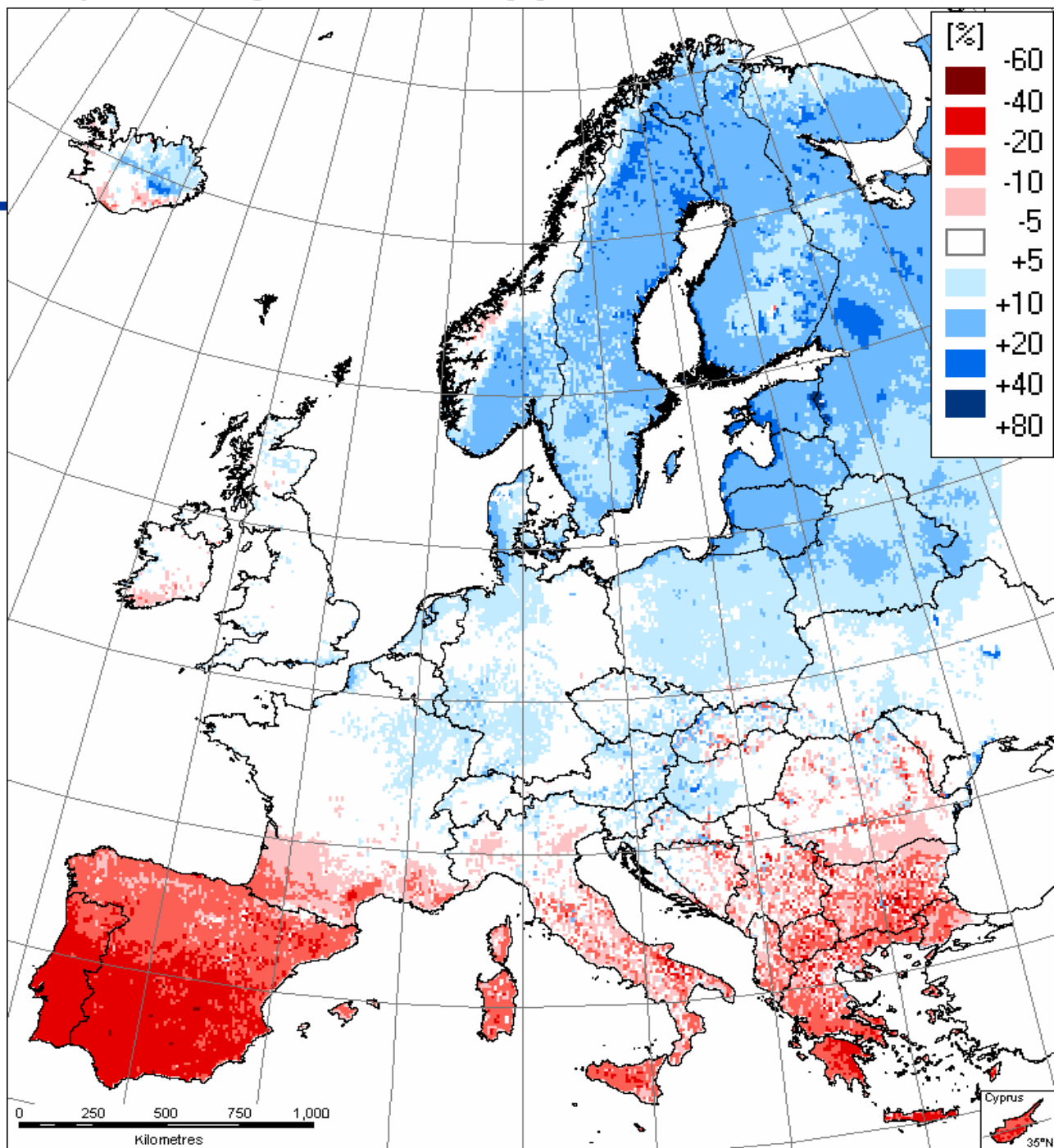
Temperature: change in mean annual temperature [C°]





Need for adaptation in the EU (2)

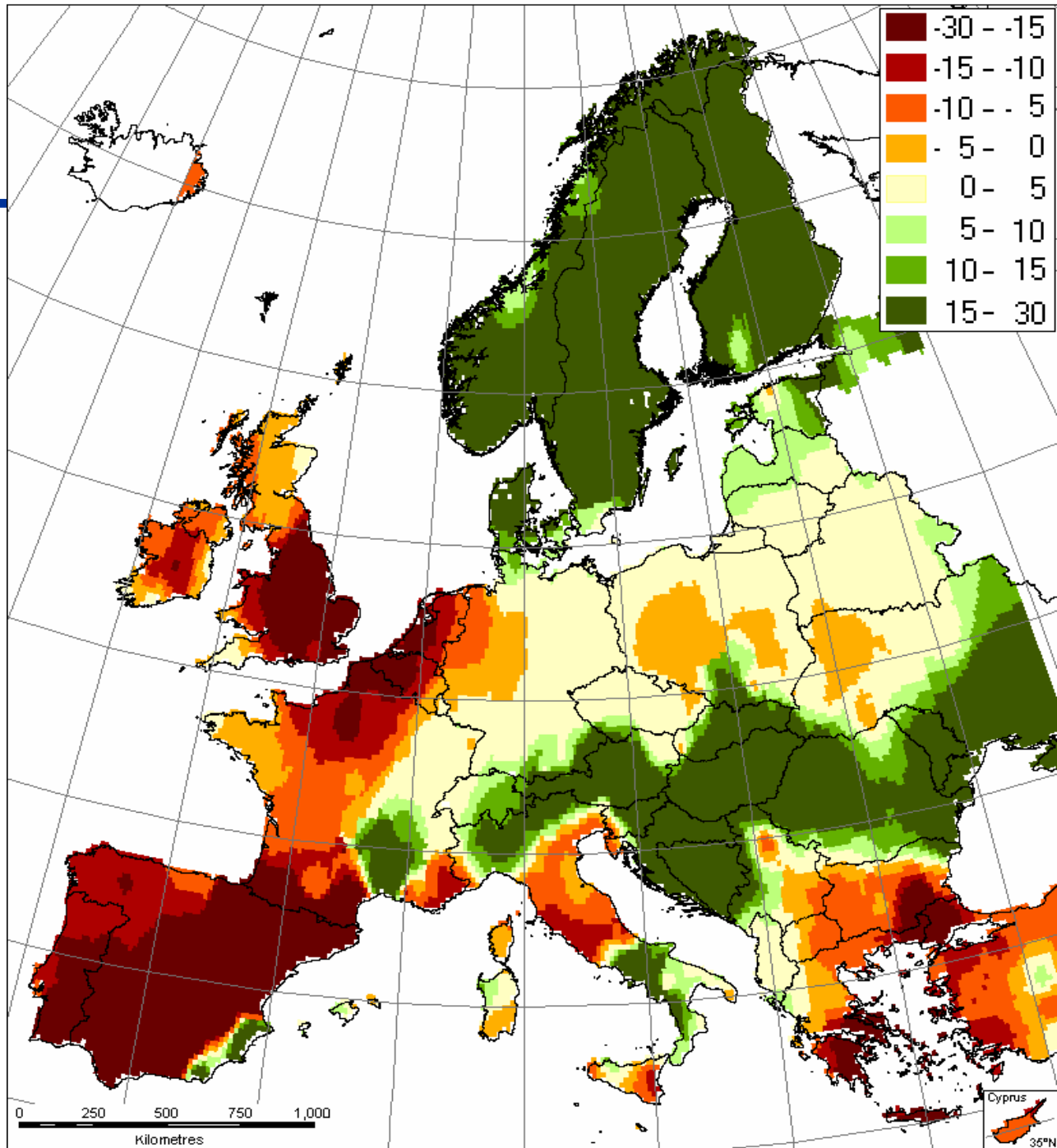
Precipitation: change in annual amount [%]





Crop yield changes under the HadCM3/HIRHAM A2 scenario [%]

Need for adaptation in the EU (3)





Europe must adapt to inevitable climate change: next steps

- Following comprehensive stakeholder's engagement in 2006
- Green Paper adoption 28 June 2007
- Public launch 3rd July in Brussels
- Consultation till end November 2007
- White Paper with concrete proposals (end 2008)



Conclusions

- Leadership starts at home: the power of the example
- EU is determined to reach its Kyoto target but still some way to go
- EU will demonstrate to the rest of the world that an economy of more than 490 million citizens which is very diverse can flourish while, at the same time, reduce its greenhouse gas emissions
- Cooperation with Third countries is key to raise confidence through sharing experiences and good practice
- Pre-2012 = invaluable lessons for Post-2012



YOU CONTROL CLIMATE CHANGE.



TURN DOWN. SWITCH OFF. RECYCLE. WALK. **CHANGE**

More information on EU climate policy:
http://europa.eu.int/comm/environment/climat/home_en.htm