



Innovationsforum 13 Sept 2007, Frechen



Eine integrierte
Energiepolitik der EU-
Bedeutung der
erneuerbaren Energien

Ding Dr.Karl KELLNER
Adviser DG Energy and Transport
DIR.D European Commission
New and Renewable Sources of
Energie, Energy Efficiency and
Innovation



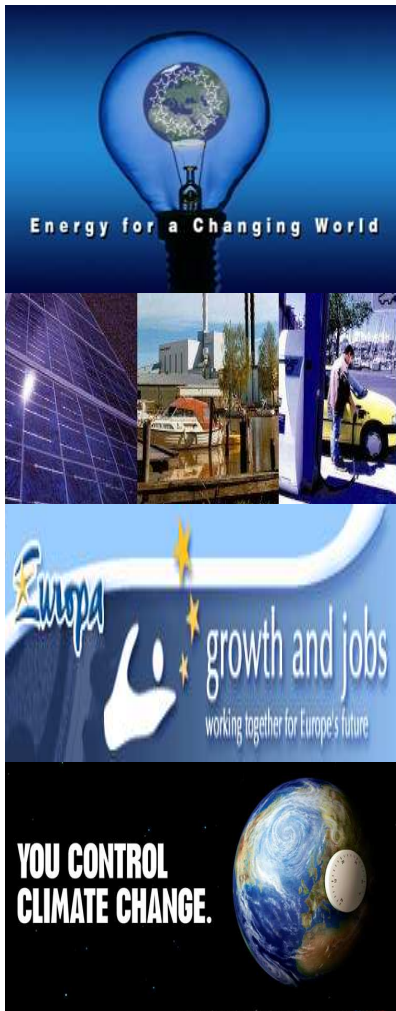


ENERGY FOR A CHANGING WORLD

EU Energy and Climate Policies adopted by the European Commission

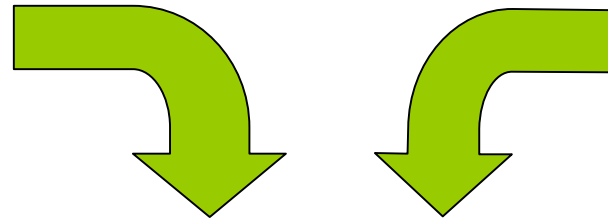


INTEGRATING ENERGY & ENVIRONMENT



Energy Policy for Europe
(Strategic Energy Review)

Limiting Global Climate
Change to 2°C

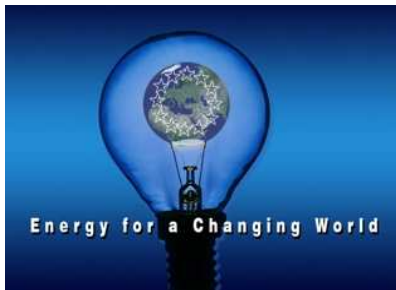


STRATEGIC OBJECTIVE

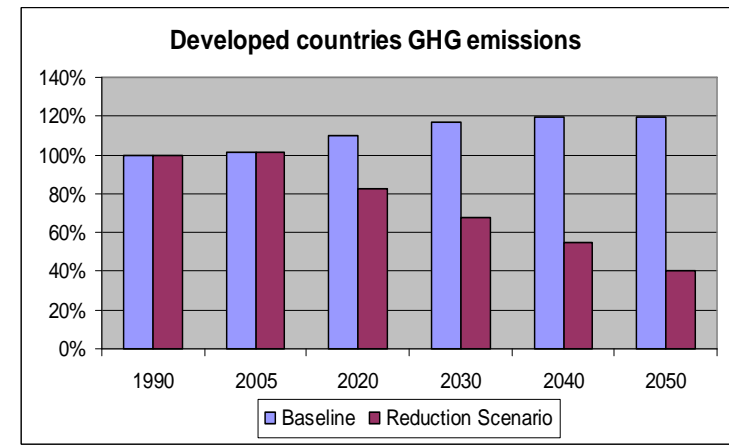
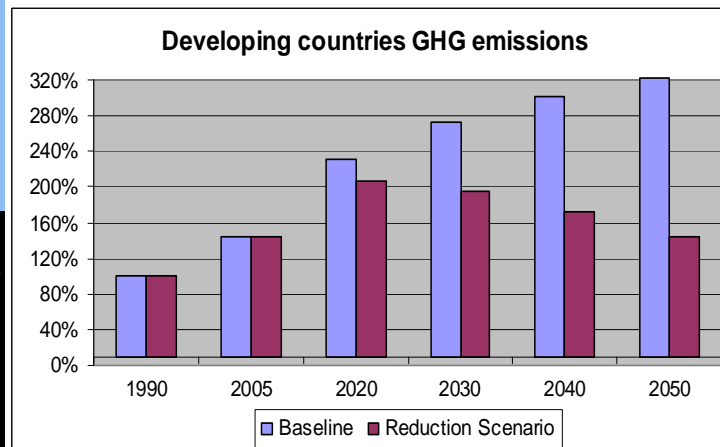
A unilateral **EU** independent commitment of
at least **20%** GHG emission reduction by
2020, compared to 1990 levels
And a 30% reduction if broader participation



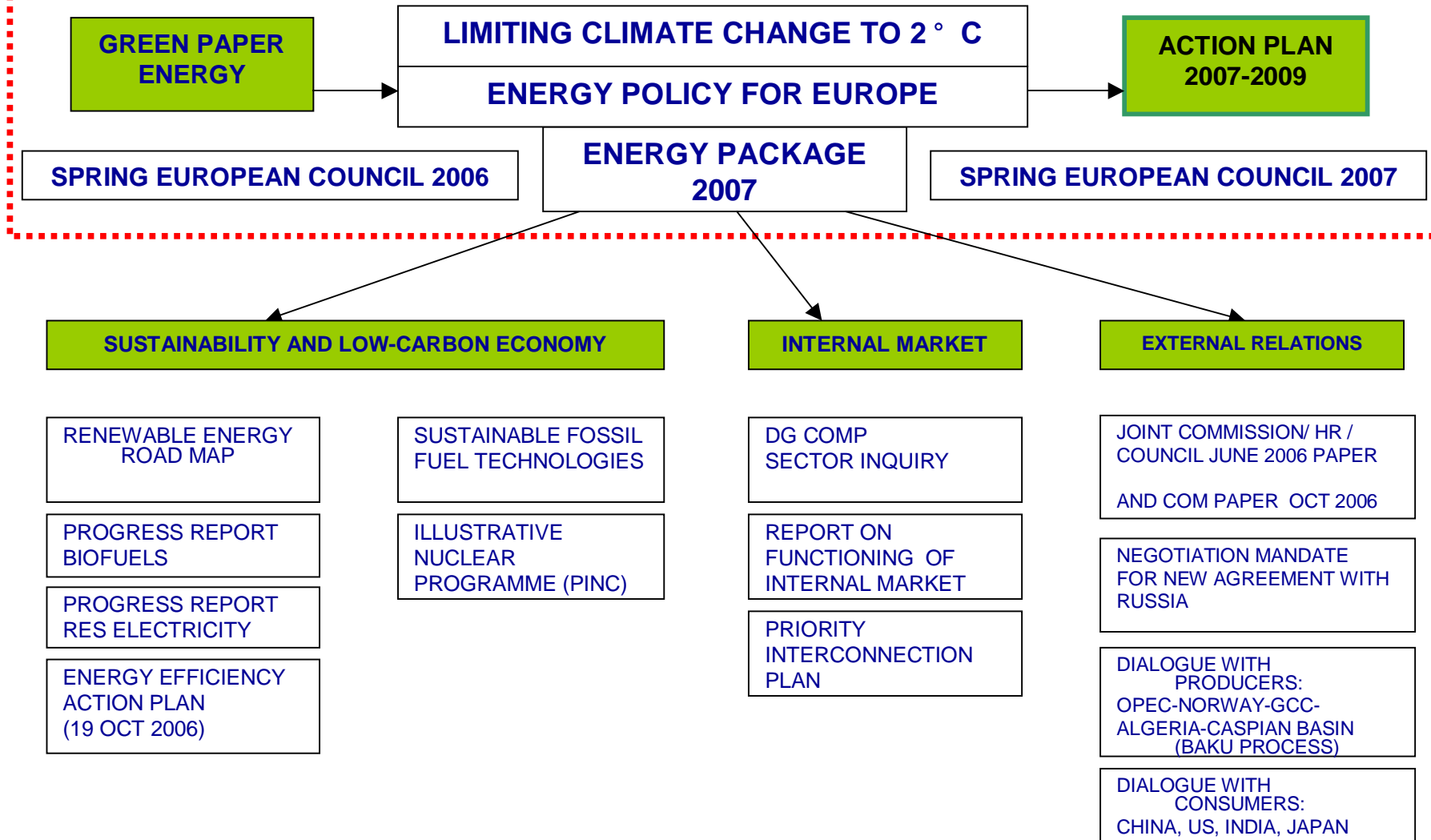
THE STRATEGIC OBJECTIVE



- At EU level at least **20%** GHG emission reduction by 2020, compared to 1990 levels
- For negotiations with developed countries: **30%** GHG emission reduction target by 2020, compared to 1990 levels
- Developing countries: Decoupling emissions and growth *asap*, absolute reductions after 2020
- Deforestation: halt within two decades and then reverse



ENERGY FOR A CHANGING WORLD



THE R&D 7TH FRAMEWORK PROGRAMME

→ STRATEGIC ENERGY TECHNOLOGY PLAN (end 2007)



Role of the EU in our Energy Future



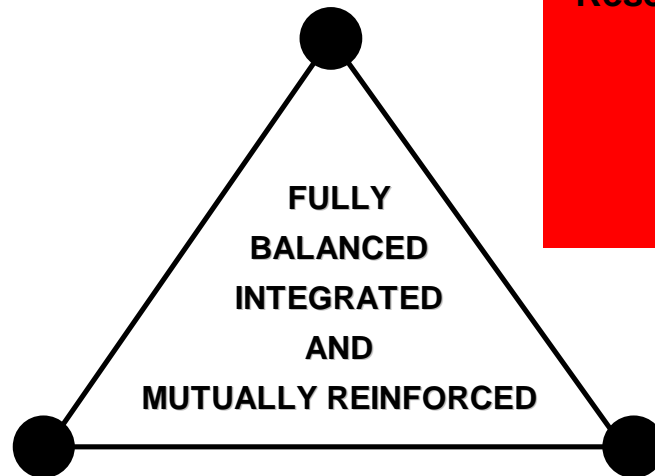
- ***Consensus at EU level for stronger EU role***
- ***An EU policy giving added value to national policies***
- ***Decision of the European Council on 8/9 March 2007***



I. THE THREE 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



Sustainable Development "KYOTO"

- Renewable energy
- Energy efficiency
- Nuclear
- Research and innovation
- Emission trading

Security of supply „MOSCOW“

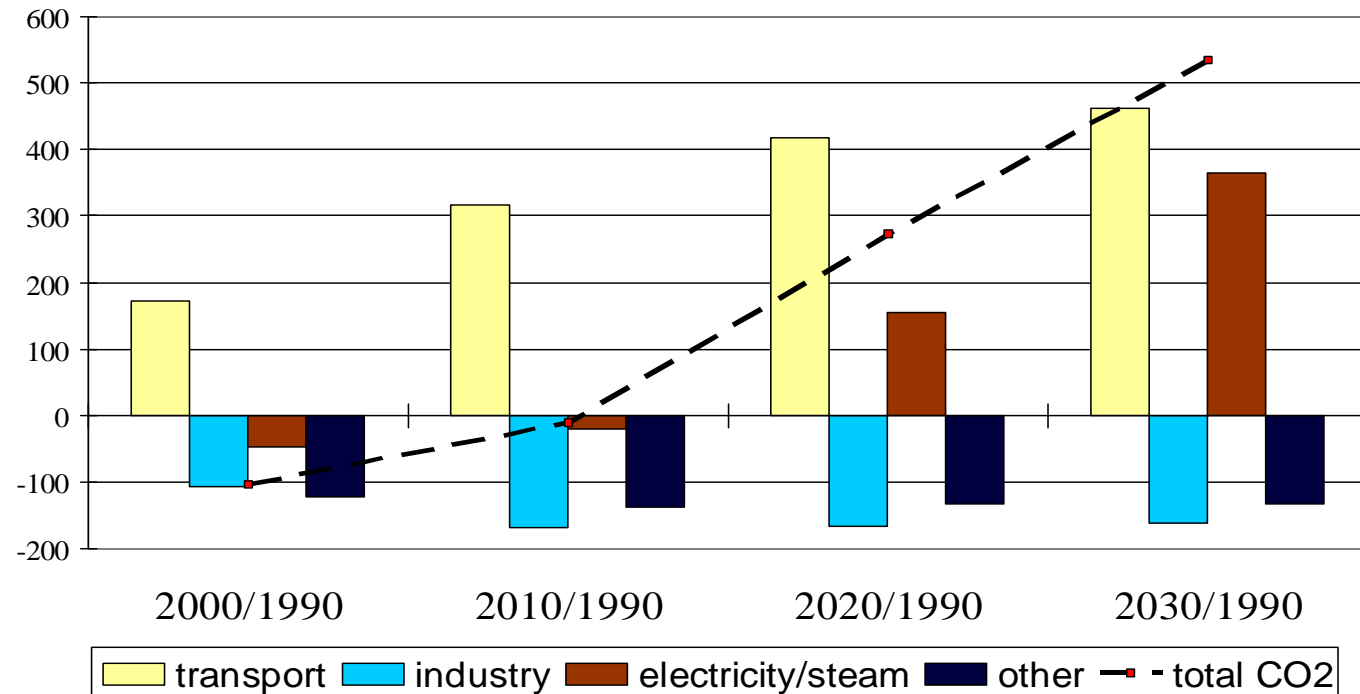
- International Dialogue
- European stock management (oil/gas)
- Refining capacity and energy storage
- Diversification



2. SUSTAINABLE DEVELOPMENT



TRENDS IN CO2 EMISSIONS up to 2030
Mt CO2 – relative to 1990 (Baseline)

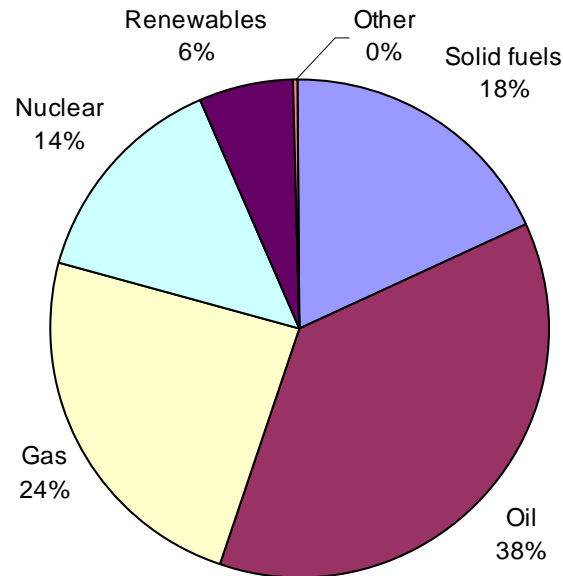




2. SUSTAINABLE DEVELOPMENT

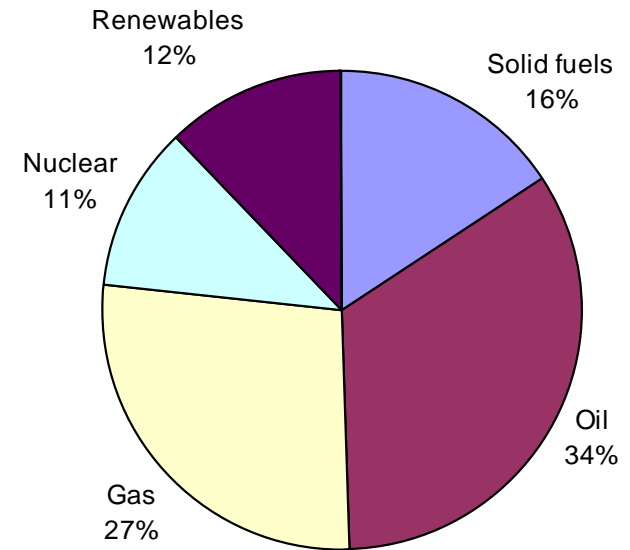


**EU-27 ENERGY MIX: High dependence on fossil fuels
=> Business as usual is **NOT SUSTAINABLE****



2004

Source: EUROSTAT



2030 (BaU)



THE KEY DRIVERS 3x20% by 2020

**20% by 2020
EFFICIENCY**



By 2020 20% EU GHG



By 2020 20% RENEWABLES



BIO-FUELS

**10 % 2020
binding**

E-ELECTRICITY

HEATING & COOLING

NATIONAL TARGETS and ACTION PLANS





II. Actions for a Post-Industrial Revolution



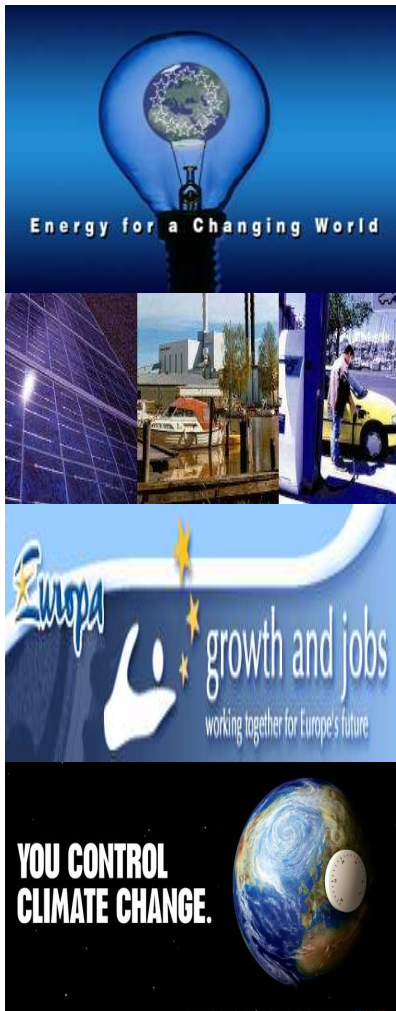
THE ACTION PLAN

- Fully realising Internal market
- Working together in solidarity
- A step change in energy efficiency
- A new longer term and mandatory / binding targets for renewable energies
- A strategic approach to energy technology, with priority for low carbon technologies
- A clear perspective on nuclear
- A common international energy policy and a single voice in negotiations with external partners
- Market analysis and reporting



3. ENERGY EFFICIENCY

Saving 20% energy by 2020



Energy Efficiency Action Plan - adopted on 19 October 2006

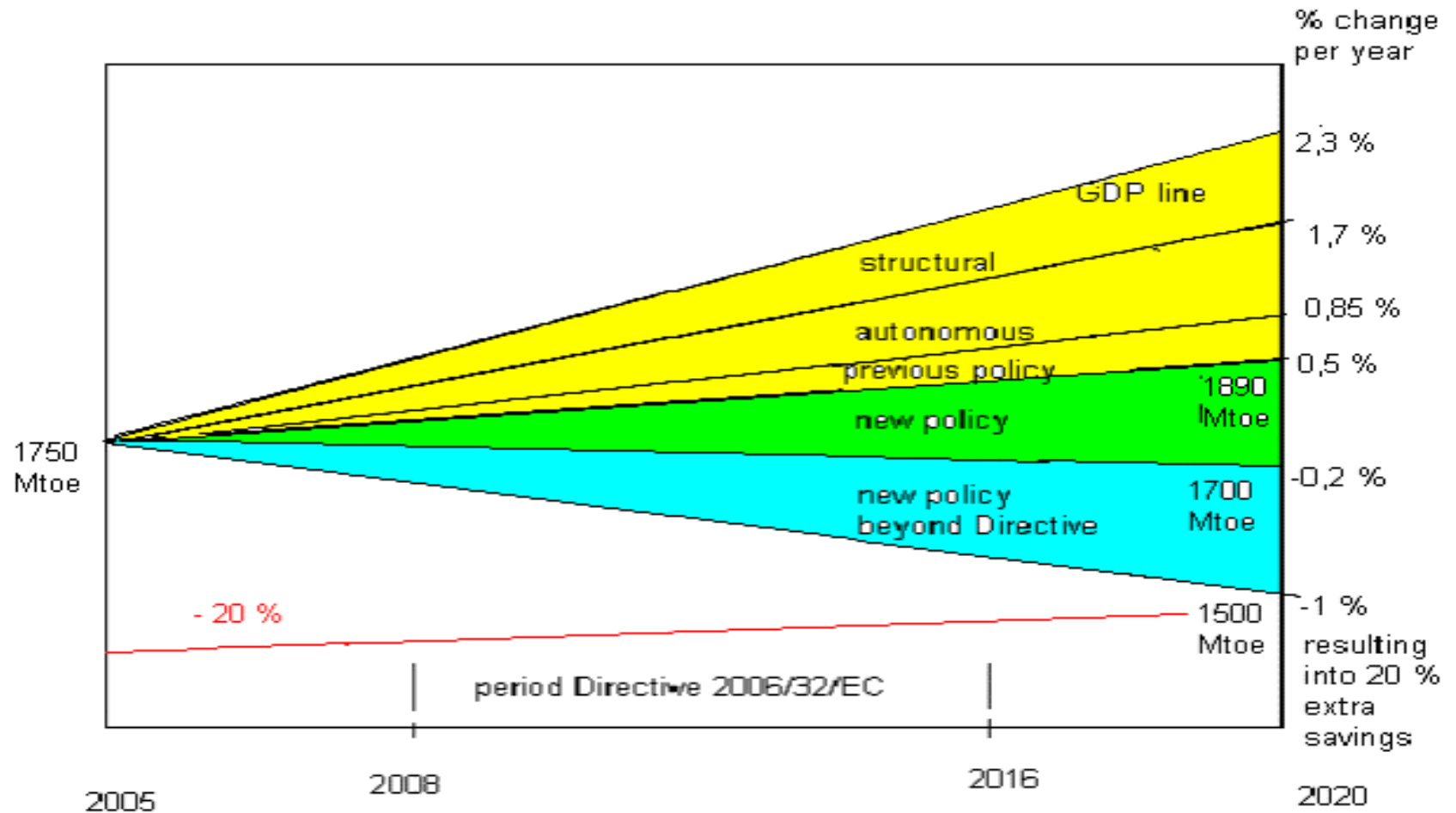
Realising the Potential:

- **Transport** - fuel efficient cars; better use of public transport; introduction of biofuels
- **Appliances** - tougher standards and better labelling
- **Buildings** - improving the energy performance of the EU's building stock
- **Improving the efficiency of heat and electricity generation(CHP), transmission and distribution**



Overview of 20% goal

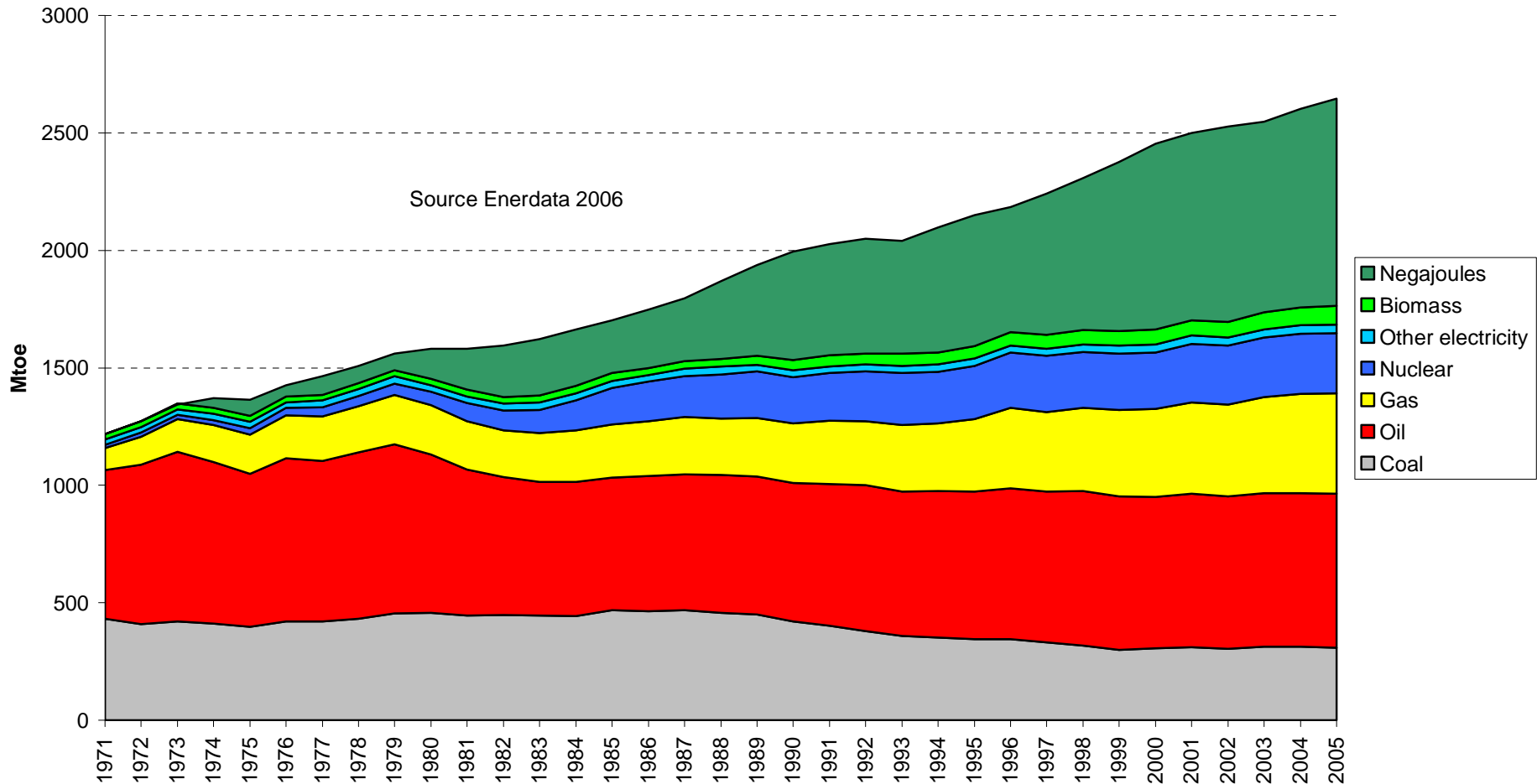
Realising the Potential





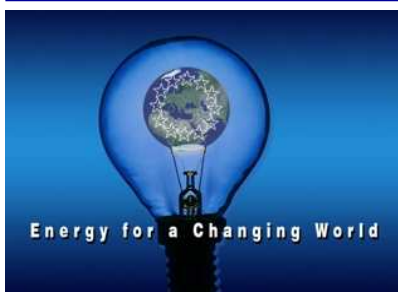
Action Plan: savings potential

Development of the primary energy demand and of « negajoules »





Action Plan: the savings potential

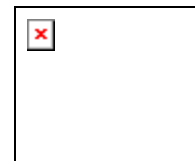


Target Energy Saving Potential: 20% by 2020

Energy efficiency potential in different sectors¹:

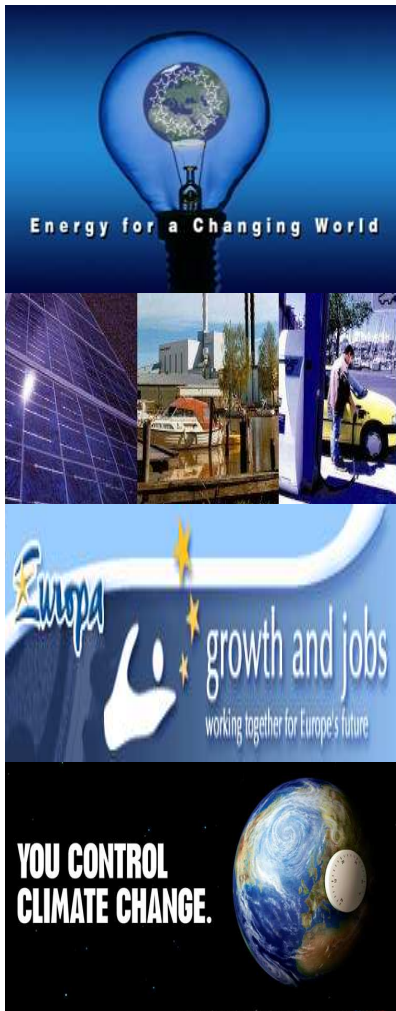
- **Manufacturing industry: up to 27%**
- **Transport: up to 30%**
- **Commercial buildings: up to 26%**
- **Households: up to 25%**

¹ Wuppertal Institute 2005.



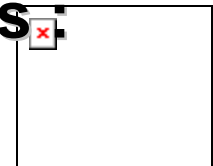


Action Plan: NEXT STEPS



Europe.Council on 8/9 March

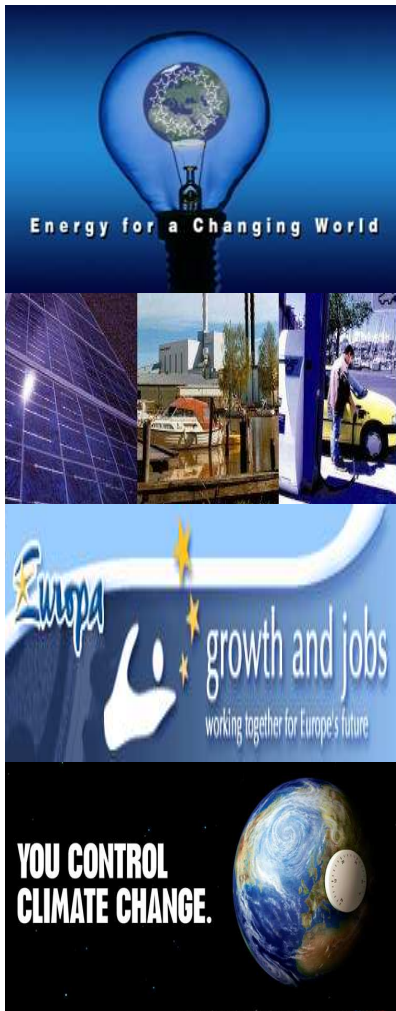
Stressed the need to achieve the objective of energy saving 20%;
Reaffirms the long-term commitment to EU-wide development of renewable energies beyond 2013;
Convinced of need for clear signal to industry, investors, innovators and researchers, it endorsed these targets:





4. RENEWABLE ENERGY SOURCES

20% RES by 2020



- Based on Commission proposal a binding overall 20% target by 2020 and a 10% minimum binding target for biofuels
- Member States set national targets and action plans on:
 - RES in electricity (flexibility)
 - Heating /cooling (flexibility)
 - Biofuels (10 % for all MS)



5. RESEARCH

Strategic Energy Technology Plan



- **Ready by the end Nov. 2007**
- **To be Endorsed by the Spring European Council 2008**

- **Sustainable coal and gas: to make plants CCS ready by 2020**
- **Second generation biofuels, photovoltaic, large-scale offshore-wind, hydrogen fuel cells**
- **Generation IV fission power, nuclear fusion**
- **Energy efficient transports, appliances and industrial systems**



5. RESEARCH Funding



In the 7th Framework Programme (FP) energy funds increased by 50% in comparison with the last FP:

2007-2013

- **Energy: €2350 million**
(>50% for RES and energy efficiency)
- **Environment (including climate change):**
€1890 million
- **Nuclear (Euratom): €2751 million**



III. Costs



Investments in a low carbon economy:
0.5% of total global GDP 2013-2030

20% share for renewables:

additional costs of €18 billion/year (oil
prices of \$48/barrel by 2020)

or €10.6 billion (\$78/barrel)

No additional costs if carbon price of €20



III. Benefits



- ✓ **Broader and wider Emission Trading Scheme**
 - ✓ Reduction of abatement costs for regulated industries and sectors
 - ✓ Stimulation of growth and job creation and innovation
- ✓ **Increase in Energy Efficiency „20% by 2020“**
 - ✓ Save €100 billion and around 780 Mt CO₂/year – 1/5 of today's emissions
- ✓ **Technical progress**
 - ✓ Efficiency gains
 - ✓ Sustainable fuel mix and more renewables
- ✓ **Internal Market**
 - ✓ Efficiency gains and competitive price
 - ✓ Downward pressure on costs for downstream industries and consumers
 - ✓ Enhanced solidarity between Member States
 - ✓ Credibility of speaking with « one voice »



IV. THE EUROPEAN COUNCIL ACTION PLAN 2007-2009

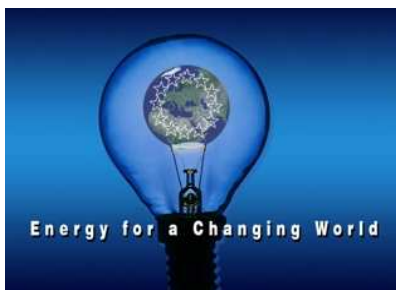


- **European Council fully endorsed on 09 March 2007 an Action Plan for An Energy Policy for Europe, based on Commission's proposals.**
- **European Parliament had been more ambitious in its resolution of 14 December 2006.**
- **Legislative proposals to be tabled by the Commission (eg internal market and Renewables) in autumn 2007.**
- **UNFCCC & Kyoto Protocol processes (2007-2009)**
- **G-8 meeting in Heiligendamm – Follow-up**



ENERGY FOR A CHANGING WORLD

Further information



All documents are available :

on the climate and energy package

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

EC, DG TREN: RES policy & RTD programmes

http://europa.eu.int/comm/energy/res/index_en.htm

EC, DG TREN: agencies, partners, programmes

<http://www.managenergy.net>

EC, IEEA: Intelligent Energy Executive Agency

http://ec.europa.eu/energy/intelligent/index_en.html

Calls for proposals

<http://cordis.europa.eu/fp7/dc/>



ENERGY FOR A CHANGING WORLD

Further information

Energy Research web site and Energy Helpdesk

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

rtd-energy@ec.europa.eu



Energy Policy

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



Calls for proposals

<http://cordis.europa.eu/fp6/dc/>



Towards Seventh Framework Programme

http://ec.europa.eu/comm/research/future/index_en.html



Conferences, proceedings, Newsletter

http://ec.europa.eu/comm/research/energy/gp/gp_events/action/article_2790_en

<http://ec.europa.eu/comm/research/energy/pdf/renews4.pdf>

