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EUROPEAN STRATEGIC ENERGY TECHNOLOGY PLAN (SET-Plan)

European Commission
DG Energy and Transport
Innovation and technological development in Energy
Iñigo SABATER





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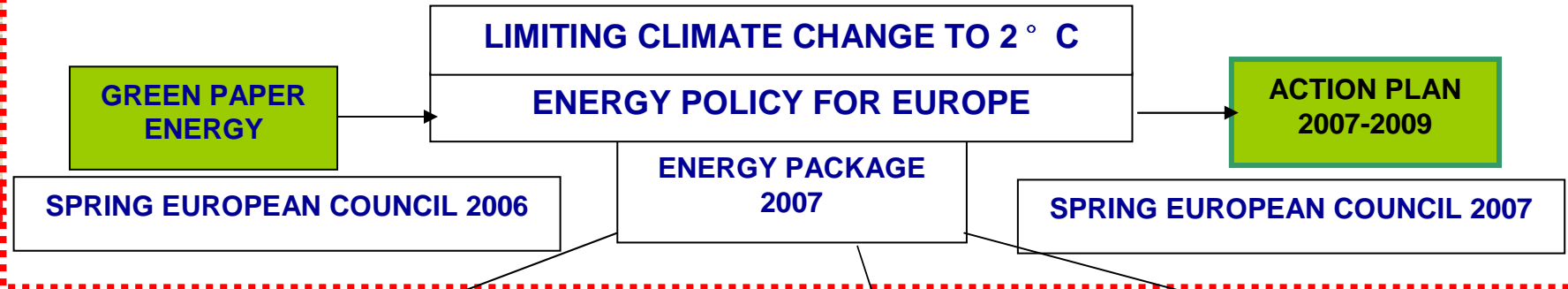


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ENERGY FOR A CHANGING WORLD



SUSTAINABILITY AND LOW-CARBON ECONOMY

RENEWABLE ENERGY ROAD MAP

PROGRESS REPORT BIOFUELS

PROGRESS REPORT RES ELECTRICITY

ENERGY EFFICIENCY ACTION PLAN (19 OCT 2006)

SUSTAINABLE FOSSIL FUEL TECHNOLOGIES

ILLUSTRATIVE NUCLEAR PROGRAMME (PINC)

INTERNAL MARKET

DG COMP SECTOR INQUIRY

REPORT ON FUNCTIONING OF INTERNAL MARKET

PRIORITY INTERCONNECTION PLAN

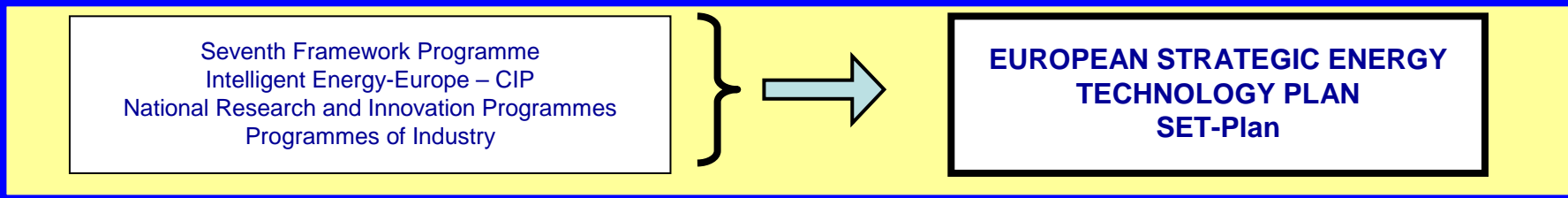
EXTERNAL RELATIONS

JOINT COMMISSION/ HR /COUNCIL JUNE PAPER AND COM PAPER OCT 2006

NEGOTIATION MANDATE FOR NEW AGREEMENT WITH RUSSIA

DIALOGUE WITH PRODUCERS: OPEC-NORWAY-GCC-ALGERIA-CASPIAN BASIN (BAKU PROCESS)

DIALOGUE WITH CONSUMERS: CHINA, US, INDIA, JAPAN





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European Council 8-9 March 2007

.../...

The Energy Action Plan sets out the way in which significant progress in the efficient operation and completion of the EU's **internal market** for gas and electricity and a more **interconnected** and integrated market can be achieved. It envisages the nomination of EU coordinators for four priority projects of European interest. It also addresses the crucial issue of security of energy supply and the **response to potential crises**. It develops clear orientations for an effective European international energy policy **speaking with a single voice**. It fixes highly ambitious quantified **targets** on energy **efficiency**, **renewable** energies and the use of **biofuels** and **calls for a European Strategic Energy Technology Plan**, including environmentally safe Carbon Capture and Sequestration, **to be examined at the Spring 2008 European Council meeting**.

.../...

Recognizing the need to strengthen energy research in particular to accelerate the competitiveness of sustainable energies, notably **renewables**, and **low carbon technologies** and the further development of **energy efficiency technologies**, the European Council:

- welcomes the Commission's intention to table a European Strategic Energy Technology Plan during 2007 for consideration at the latest by the 2008 Spring European Council.

.../...





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Berlin Declaration

25 March 2007

.... /

II

- We are facing major challenges which do not stop at national borders. The European Union is our response to these challenges.

.... /

- We intend jointly to lead the way in energy policy and climate protection and make our contribution to averting the global threat of climate change.

.... /



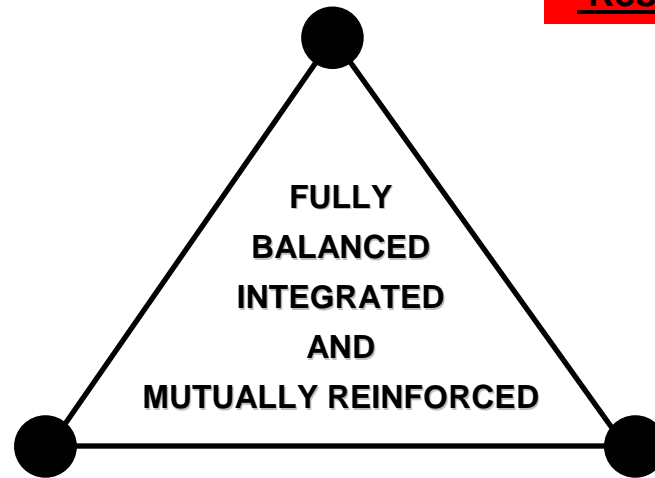


THE THREE CHALLENGES



Competitiveness “ LISBON ”

- Internal Market
- Interconnections (Trans-European networks)
- European electricity and gas network
- Research and innovation



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
- Research and innovation





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II. Towards a European Strategic Energy Technology Plan (COM(2006)847)





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Towards a European Strategic Energy Technology Plan



- **The European Energy Challenge**

- C + CC + SES
- Targets 2020
 - ◆ 30% GHG (20%)
 - ◆ 20% EE
 - ◆ 20% RES (10%BF)
- Targets 2050
 - ◆ 60-80% GHG

- **A vision of Europe's energy future**

- Efficiency
- Diversification
- Decarbonisation
- Liberalisation

- **The Vital Role of Energy Technology**

- Technologies and not sources
- Growth without a –
- Opportunity

- **What has been achieved to date**

- New technologies
- Constant support
- Technology Platforms





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The insufficient scale of the current effort

- **'Business as usual' is not an option**
 - ➔ Current trends and their projections show that we are not doing enough, by 2030
 - ◆ CO2 – 5% increase in the EU and 55% globally
 - ◆ SES – from 50% to 65% dependence
- **Structural weaknesses in the energy research and innovation system**
 - ➔ Long lead times to market
 - ➔ Locked-in infrastructure investment
 - ➔ Market failure ('Stern Report')
 - ➔ Dominant actors and network connection challenges
 - ➔ Scattered and un-coordinated market incentives (e.g. innovation programmes)
 - ➔ Reduction of Energy research funds (OCDE Report – «halved since the 80's»)
 - ➔ Scattered, fragmented and sub-critical research and innovation capacities
 - ➔ Strong international competition and weak cooperation





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Transforming energy research and innovation system to accelerate market take-up

- The **EU must act jointly and urgently**
 - ➔ **JOINTLY** - Developing a broad portfolio of technologies to spread risk and avoid locking-in; Member States in isolation can not afford it
 - ➔ **URGENTLY** - Transforming the energy system will take decades, but we need to transform now the research and innovation system
- **Public policy** has many instruments available:
 - ➔ **TECHNOLOGY PUSH**: Research programmes (RSFF, JTI, ERA-NET), Venture capital, EIB, Structural funds, ETP
 - ➔ **MARKET PULL**: Regulations, Pricing (ETS, taxes), Standards, Labelling, Feed-in tariffs, Quotas, Obligations, Green and White Certificates, Public Procurement, Trade agreements
 - ➔ **INNOVATION**: EIT, Intelligent energy programme
- **Essence of SET-Plan**: matching technologies with instruments and proposing the optimal scale – «*different horses for different courses*»





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'2007 European Strategic Energy Technology Plan' (SET-Plan)

- **Several Targeted Large-Scale European Initiatives;**
 - ➔ E.g. energy efficiency in buildings; energy efficiency in industry; energy efficiency in transport; European grid; energy storage; second generation biofuels; carbon capture and storage; fuel cells and hydrogen; off-shore wind; photovoltaic; concentrated solar power; nuclear fission; nuclear waste; nuclear fusion; and basic research for energy (materials, nanotechnologies, computation, biotechnologies).
- **Some Support Actions;**
 - ➔ Technology watch
 - ➔ Capacities watch
 - ➔ Low-carbon energy technologies information system
- **Governance of the plan**
 - ➔ Raise political profile of energy technology – European Council 2008
 - ➔ Energy and Research Council - MS Steering Group
 - ➔ Jointly planning, coordinating, monitoring and evaluating programmes and initiatives
 - ➔ Energy Technology Forum





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Process to arrive at the SET-Plan

- **To develop a vision**
- **To analyse the research and innovation system**
- **To assess different technology avenues**
- **Two-pronged consultation:**
 - ➔ With experts groups: through hearings with Technology Platforms and workshops; through established forums
 - ➔ Open to the general public:
http://ec.europa.eu/energy/res/consultation/setplan_en.htm





Conclusions

- The world has entered **a new energy era**
- Energy technology has a **vital role** to play
- Adequate combination of innovation and regulatory measures has produced some results, but **'business as usual' is no longer an option**
- **MS and industry** should at least match the increased budgets of FP7 and IEE
- The European Union must act **jointly and urgently**
- SET-Plan must stem from a shared and inclusive European **vision**, involving all relevant actors.
- SET Plan must be **ambitious** in setting targets, but **realistic** and pragmatic regarding resources.
- The strategic element of the SET-Plan will be to identify those technologies for which it is essential that the European Union as a whole finds a more powerful way of mobilising resources in ambitious **result-oriented actions to accelerate** their pathway to the market.





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II. Amsterdam Forum debate





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Statements from COM(2006)847 (1/2)

- Strong policies measures to enhance energy efficiency and incentives for the introduction of low-carbon technologies, combined with a stable market for carbon emissions (Emission Trading Scheme), can set the direction, **but it is technology, allied to behavioural changes, that will have to deliver.**
- **To continue developing energy technologies 'business as usual' is not an option.** The current trends and their projections into the future demonstrate that we are simply not doing enough





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Statements from COM(2006)847 (2/2)

- **The European Union must act jointly and urgently.** It will take decades to progressively transform the energy system, but we must start now. It is a process that requires **strategic and coordinated action at European, national, regional and local level**, pro-active planning and a comprehensive policy framework.
- To meet the energy challenge, **we must develop a broad portfolio** (many different technologies) of affordable, competitive, clean, efficient and low-carbon technologies.





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General questions for the debate (1/2)



- Do you think that there is **added value in European Union level action to promote energy technologies?**
- Do you believe that the European Union could **reach the targets** proposed in the Energy Policy for Europe **with energy technologies currently available** in the market?
- Do you believe that **new technologies** (not yet fully deployed) **could contribute** to reach those targets?
- Do you consider that taking **the right actions to develop and introduce** in the market new energy technologies now, could lead to **sustainable energy in the future?**





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Specific questions for the debate (2/2)



- 1. Which technologies do you think have the greatest potential** to contribute to the energy policy goals by 2020 and by 2050 ?
- 2. Is it insufficient the current development and innovation effort** in the European Union (at regional, national and European level) ?
- 3. What type of instrument** (technology push versus demand pull) would be most suitable to accelerate the pathway to the market ?
- 4. Would/could/should new European Union initiatives accelerate their development and deployment?**





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- **Many thanks for your attention**

