Towards a new European Energy Technology Policy

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Towards an Energy Technology Policy for Europe

A Combined Planning and Implementation Approach

Synergies at the Global level
EU Policy Guideline

Competitiveness “LISBON”
- Internal Market
- Interconnections (Trans-European Networks)
- European electricity and gas networks
- Research and innovation
  SET-Plan
  - Joint Strategic Planning
  - Effective implementation
  - Resources
  - International Cooperation

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

FULLY BALANCED INTEGRATED AND MUTUALLY REINFORCED
The need for the SET-Plan

✓ Technology is vital to achieve the EU Energy and Climate Change policy objectives – ‘time is of the essence’

✓ But today we are falling short:
  ➡ Insufficient energy research budgets in the EU
  ➡ Structural weaknesses in technology innovation
  ➡ International competitors are already accelerating their efforts

✓ Intrinsic weakness in energy innovation

There is a opportunity / need to use the ambition and the targets of the EU Energy Package to create a new European Policy for Energy Technology (SET-Plan)
The SET-Plan Communication - COM(2007)723 - was adopted by the Commission on November 22, and endorsed by the European Council on 13 March 2008.

- Joint strategic planning – New governance structure - align innovation efforts with energy policy goals

- Effective implementation
  - European large projects on technology development
  - Strengthening European energy research capacities
  - Transition Planning

- Increased resources, both financial and human

- Reinforced international cooperation
A new European Governance on Energy Technology

✓ Steering Group on Strategic Energy Technologies
  ➡ High level representatives from MSs
  ➡ Conceive joint actions and make resources available

✓ Information system (SETIS)
  ➡ Technology Map (potentials? impacts? barriers?)
  ➡ Capacities Map (who does what? and internationally?)
  ➡ Monitoring & Review Framework (KPIs) for initiatives/sectors

✓ Energy Technology Summit:
  ➡ In the first half of 2009; to take stock, to engage industry, researchers and international partners
European Industrial Initiatives:

- European Wind
- Solar Europe
- Bio-energy Europe
- European Electricity Grid
- European CO₂ Capture, Transport and Storage (forthcoming Communication)
- Fission (Gen IV)
- Fuel cells and Hydrogen (JTI on-going)
- Fusion (ITER on-going)
EU Strategic Energy Technology Plan

European Industrial Initiatives

- Instruments
  (JTIs, Coalitions, Demonstration projects)

- ETPs, Stakeholders
  - Vision Documents
  - Strategic Research Agendas
  - Implementation Plan

- SET-PLAN
  - Information System
  - Technology and Capacity Mapping

Implementation

Roadmapping
MISSION: To support the European Energy Technology Policy, in providing regular and sound knowledge on energy technologies – a tool for decision making

1. **Key-Objective 1:** To establish a robust open-access information system on energy technologies and their innovation aspects geared to supporting an effective strategic planning, monitoring and assessment of the European Strategic Energy Technology Plan.

2. **Key-objective 2:** To develop an integrated approach for information and data exchange on energy technologies and capacities for innovation with the Member States, international organisations and energy sectors.
SET-PLAN - 1st Technology mapping 2007

Technology mapping 2007

- Energy Efficiency in Industry (without CHP in industry)
- Energy Efficiency in Transport
- Cogeneration
- Carbon Capture & Storage
- Hydrogen Cars
- Concentrated Solar Power
- Solar Photovoltaics
- Geothermal Power
- Fusion
- Geothermal Heating
- Solar Heating & Cooling
- Biofuels
- Hydropower
- Wind
- Fission
- Energy Efficiency in Buildings

Challenge for Implementation

Supply side technologies
Demand side technologies
Transport
BAU (lighter pie) vs. additional SETP energy potential (darker pie)

Time Horizon
Towards Sustainable Energy System

1st WAVE
2nd WAVE
3rd WAVE

IEA/ETO_SET Plan_ May 15, 2008, Paris
Inputs from European Technology Platforms (ETP)

VISION

VISION
Wind (2006)

IMPLEMENTATION
Implementation Plan (2007)

STRATEGY
Strategic Research Agenda
Deployment Strategy
Strategic Overview

ETPs Cycle

(2005)

(2008)
## Status of ETPs Contribution

<table>
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<tr>
<th>Technology Platform</th>
<th>Vision</th>
<th>SRA &amp; DS</th>
<th>Implementation Plan</th>
<th>Proposed EU Initiatives</th>
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<tr>
<td>Biofuels</td>
<td>2006</td>
<td>2008</td>
<td></td>
<td>In preparation - 2nd Generation Biofuels</td>
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<tr>
<td>Wind</td>
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<td>In preparation - Large Scale Turbines &amp; Systems</td>
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<td>CCS</td>
<td>2006</td>
<td>2006</td>
<td>2008</td>
<td>In preparation – up to 12 -Demonstration Projects</td>
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<td>PV</td>
<td>2005</td>
<td>2007</td>
<td>2008</td>
<td>In preparation - within a broader Solar Initiative (incl. CSP, Buildings, RESHC..)</td>
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<tr>
<td>Smart Grids</td>
<td>2006</td>
<td>2006</td>
<td></td>
<td>In preparation - Energy network Infrastructure</td>
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<td>Nuclear Fission</td>
<td>2007</td>
<td>On-going</td>
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<td>In preparation, Generation IV Forum</td>
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<td>Nuclear Fusion</td>
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<td>ITER Initiative</td>
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European Roadmap - A sample: H$_2$&FC Technologies

**Phase I** (2007-2010)

- **H$_2$ sustainable supply**
  - Long term R&D on production technologies
    - Demo 1: Process engineering, system validation
  - Medium term R&D on production technologies
    - Demo 2: Technology Demonstration

- **H$_2$ vehicles & refuelling stations**
  - Demo 1: Large scale demonstration projects
  - Demo 2: Extension of Demo sites
  - R&D: components, integration, H$_2$ storage, refuelling technologies

**Phase II** (2010-2015)

- **FCs for early markets**
  - Demo 1: Early field test & demonstration
  - Demo 2: Market entry
  - R&D: Materials, analysis & modelling, cell & stack, components

- **FCs for CHP & power generation**
  - Demo 1: Early field test & demonstration
  - Demo 2: Market entry & deployment
  - R&D: system and components

- **Supporting Activities**
  - SMEs, RCS, Safety, Socio-economics, Training, Financing, Awareness

**Market Growth**

- "Snapshot 2020"
  - 100 000 FC units sold per year for early applications
  - 250 millions micro-FCs sold/ per year
  - 150 000 FC systems sold for CHP/per year
  - 400 000 H$_2$ Vehicles sold /per year
2008 as a key Milestone

✔ Establishment of the EU Information System on Energy Technologies (SETIS)
  ➔ Systemic Modelling Capacities
  ➔ Stakeholder Integration Framework
  ➔ Web-based Portal

✔ Kick-off of the EU Governance

✔ Establishing European Industrial Initiatives (EIIs)
  ➔ A Communication on financing energy technologies
  ➔ Preparing work-programmes of EU Initiatives
International Cooperation - Synergies

A integral part of the SET-Plan Initiative

Developed, Developing and Emerging economies – safety, public acceptance, longer-term frontier research, promoting sustainable development and creating opportunities for EU industry:

- Networking energy technology centres;
- Large-scale demonstration projects;
- Global Energy Efficiency and Renewable Energy Fund;
- Clean Development Mechanism post-2012
- etc…

Needs for a coherent and synergetic Strategic Planning accounting for regional specificities – Road-mapping, Exchange of Information
The EU follows a combined Strategic Planning and Implementation Approach

A Common Assessment and Planning Framework is being set-up, Roadmapping is a key element of this Strategic Planning

Importance of Interfacing, not only with EU Member States, but at the Global Level
Thank you for your attention

energy for a changing world

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