

The Hydrogen and Fuel Cell Joint Technology Initiative (JTI) and the role of the European Technology Platform

***General Assembly of the Spanish Hydrogen and Fuel Cells
Technology Platform***

Madrid, 05 April 2006

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OUTLINE

- ✓ **Energy Research in the 7th EU Framework Programme (FP7)**
- ✓ **Overview of the European Hydrogen and Fuel Cell Technology Platform (HFP)**
- ✓ **Aspects of a Possible Joint Technology Initiative (JTI) on Hydrogen and Fuel Cells**

Energy Research in the 7th EU Framework Programme (FP7)

WHAT'S NEW in FP7 (as proposed by the Commission)

- Annual budget doubled (EUR 5 billion ► 10 billion)
- Emphasis on **RTD themes** rather than on “instruments”
- Significant **simplification** of its operation
- Focus on developing research that meets the needs of European industry, through the work of **Technology Platforms** and the new **Joint Technology Initiatives**
- Basic research - Establishment of a **European Research Council**
- **Other new topics:** Research Infrastructures, Regions of Knowledge, Risk-Sharing Facility (EIB).
- Programme length: **7 years**

FP7 Specific Programmes

Cooperation – Collaborative research

Ideas – Frontier Research

People – Human Potential

Capacities – Research Capacity

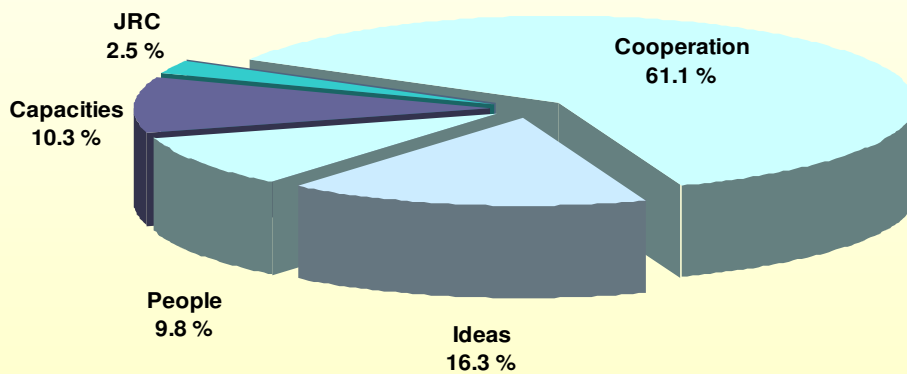
+

JRC (non-nuclear)

JRC (nuclear)

Euratom

Seventh Framework Programme* Commission proposal [COM(2005) 119] (72,726 M€, 7 years)



(* Overall amount for Euratom Programme (3,092 M€) not included

FP7 (2007-2013)

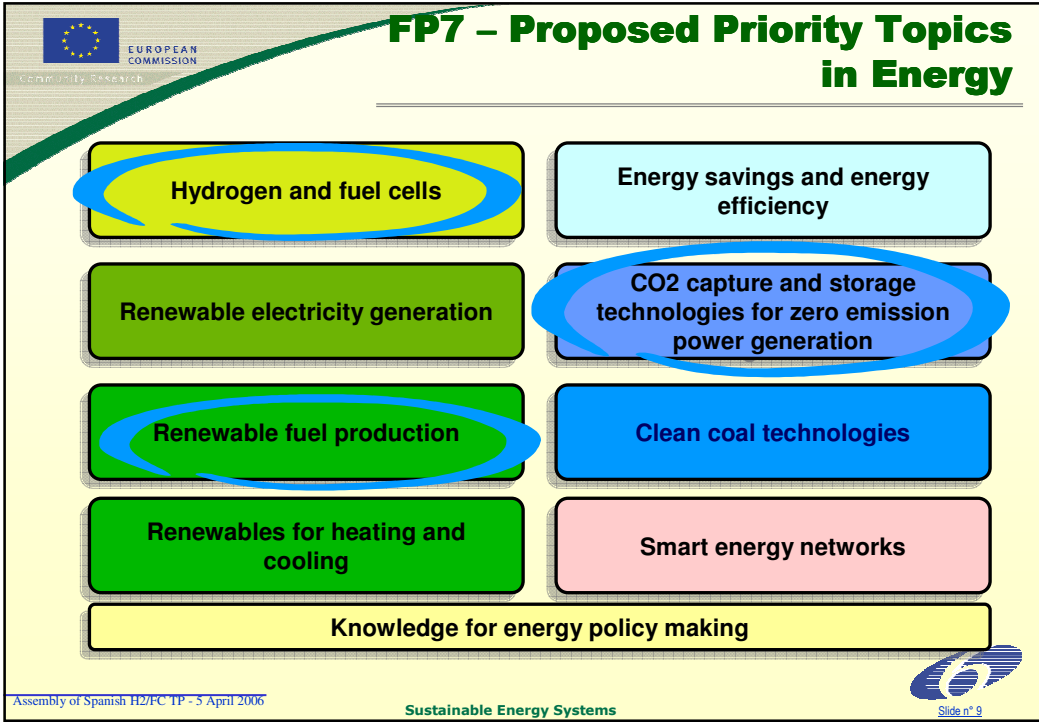
'Cooperation' budget breakdown per theme as proposed by the Commission

Theme	Budget Breakdown (% of total)
1. Health	18.7
2. Biotechnology, food and agriculture	5.5
3. Information society	28.5
4. Nanotechnologies, materials and production	10.9
5. Energy	6.6
6. Environment	5.7
7. Transport	13.4
8. Socio-economic research	1.8
9. Security and space	8.9

Energy Research in FP7

OBJECTIVE

Transforming the current fossil-fuel based energy system into a more **sustainable** one based on a diverse portfolio of energy sources and carriers combined with enhanced energy efficiency, to address the pressing challenges of **security of supply** and **climate change**, whilst increasing the **competitiveness** of Europe's energy industries.



Overview of the European Hydrogen and Fuel Cell Technology Platform (HFP)

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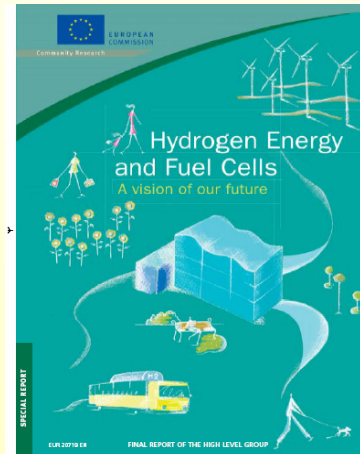
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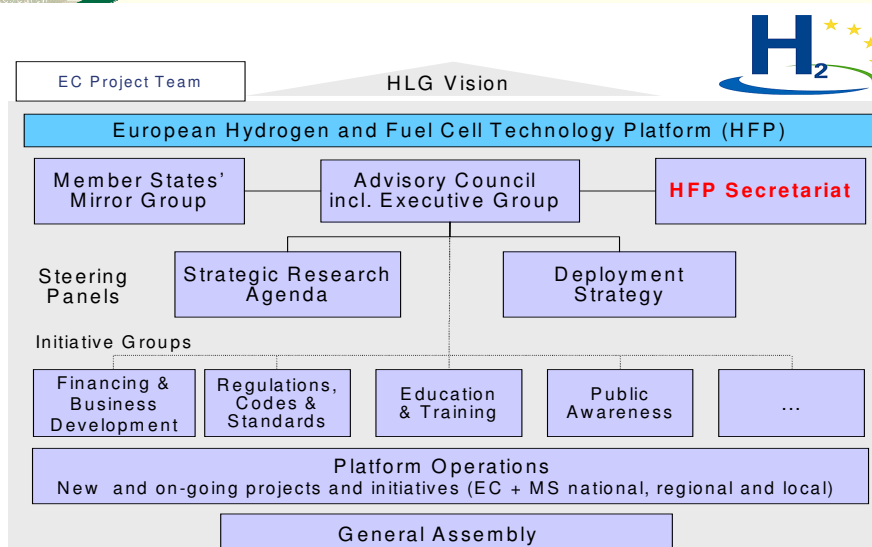
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Main milestones: translating the HLG Vision Report into the H2/FC JTI

- High Level Group (2002-2003)
Vision report : *“Hydrogen energy and Fuel Cells – A vision of our future”*
- President Prodi’s Communication proposing **European Hydrogen Partnership** (September 2003)
- European Technology Platform **on Hydrogen and Fuel Cells** (Launch January 2004 – General Assembly)
- Strategic documents of the Platform **“Strategic Research Agenda”**
“Deployment Strategy”
“Strategic Overview” (Endorsed March 2005 at General Assembly)
- **Joint Technology Initiative proposed for FP-7 (2007 - 2013)**



The Initial HFP Structure



www.HFPEurope.org

Key Points of Strategic Overview



Need for a highly focused 10 year R&D&D programme

- reduce FC system costs (**stationary by 10; transport by 100**)
- enhance performance + durability of **FC systems (factor ≥ 2)**
- reduce costs of hydrogen **delivered (factor ≥ 3)**
- novel storage materials to **increase vehicles' operating range**

Need to combine private and public investment at EU scale

- combine funding from EU, Member States and regions
- double **present effort to 250 M€/y**

Need to develop policy frameworks and financial schemes

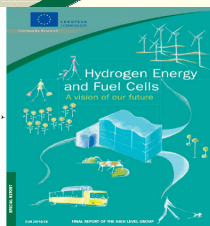
- integrated RTD + D programme
- large-scale demonstrations ("**Lighthouse Projects**")
- bridge the gap **between R&D and commercialisation**

Aim

- Early markets by 2010
- Commercialisation of stationary applications by 2015
- Commercialisation of transport applications by 2020



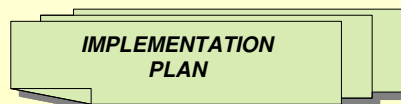
Moving Forward Building the Content



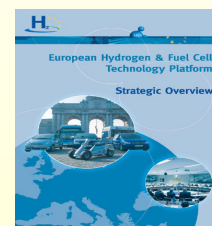
VISION
(2003)

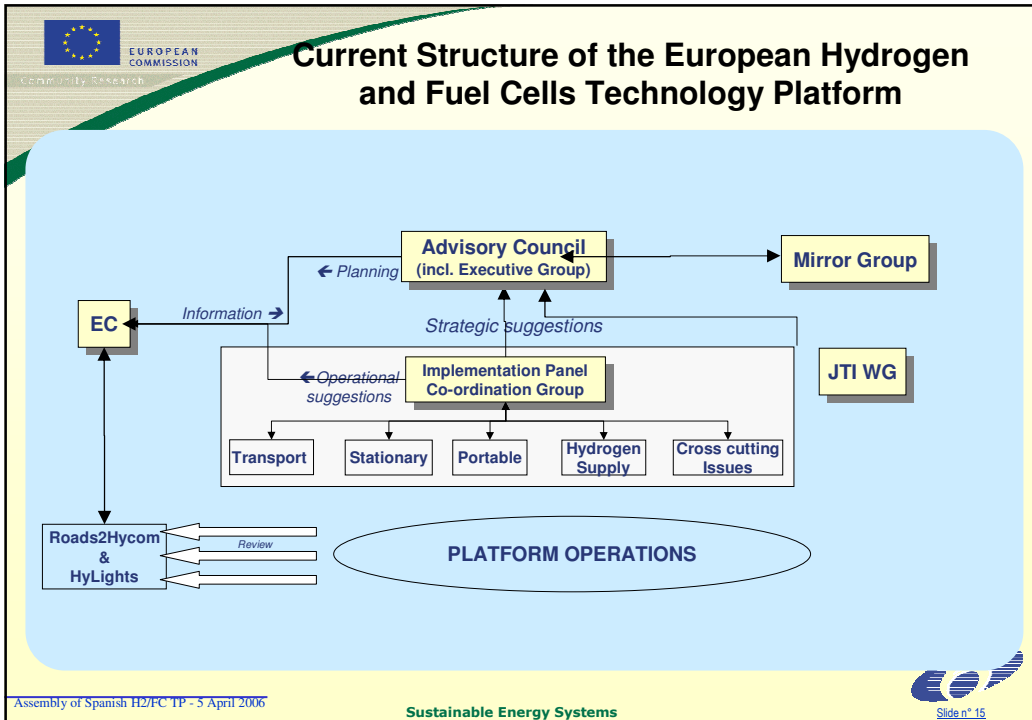
STRATEGY
(2005)

IMPLEMENTATION
(2006)



Implementation Panel HFP Body





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- ## HFP – IMPLEMENTATION PANEL
- × **The IP is the only operational Panel under the direction of the Advisory Council (AC) of the HFP**
 - × **Mandate:** to take forward the strategy outlined in the Strategic Research Agenda, the Deployment Strategy and the Initiative Group Action Plans
 - × **Objective:** contribute to the definition of scope and structure of actions to implement the strategy, through:
 - ✓ **FP7 and its programmes and instruments, including the proposed JTI, in conjunction with**
 - Member States Programmes
 - Industrial RTD&D Investment Plans
 - × **Deliver:** A detailed **IMPLEMENTATION PLAN** (2006)
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Joint Technology Initiatives (JTI)

New management structure to allow more efficient organisation of R&D&D resources and a critical mass: Based on Art. 171 EC

Key features

- ✓ Combine efforts and funding **from the private sector with those from European, national, regional and local programmes in the form of a Public Private Partnership**
- ✓ Goal-oriented, **with specific targets and intermediate milestones**
- ✓ Integration of research and demonstration actions, **with continuous interaction to accelerate progress**
- ✓ Concerted effort **over the whole supply chain**
- ✓ Driven by industries **that will have to take large-scale commercialisation decisions**

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Why a JTI is needed for H2/FCs?

- ✗ Until recently this sector was unstructured, dispersed and **lacking strategic direction**.
- ✗ Transition to a H2-oriented economy implies a complete **transformation of the energy system** and a **large capital investment**. However, market forces alone will not be sufficient; **public support and funding** is crucial to leverage private finance, the main engine of change.
- ✗ The nature of the **challenge** of this sector is fundamentally **different** from others with long established and already profitable industries
- ✗ Despite accelerated technological progress, current **H2 and FC industries** are immature, competencies are dispersed and the EU competitors are racing ahead.
- ✗ From current experiences it is evident that normal FP instruments are not adequate – a **new instrument** is needed in order to enhance coherence, effectiveness and efficiency.
- ✗ **Industry** has strongly confirmed its **commitment** to the JTI concept and its readiness to proceed at the earliest opportunity.

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Possible content of a H2/FC JTI

Four broad themes:

- ✗ Fuel cell development programme
- ✗ Hydrogen supply programme
- ✗ Lighthouse demonstration projects
- ✗ Market framework preparatory activities

HFP Implementation Panel will substantiate

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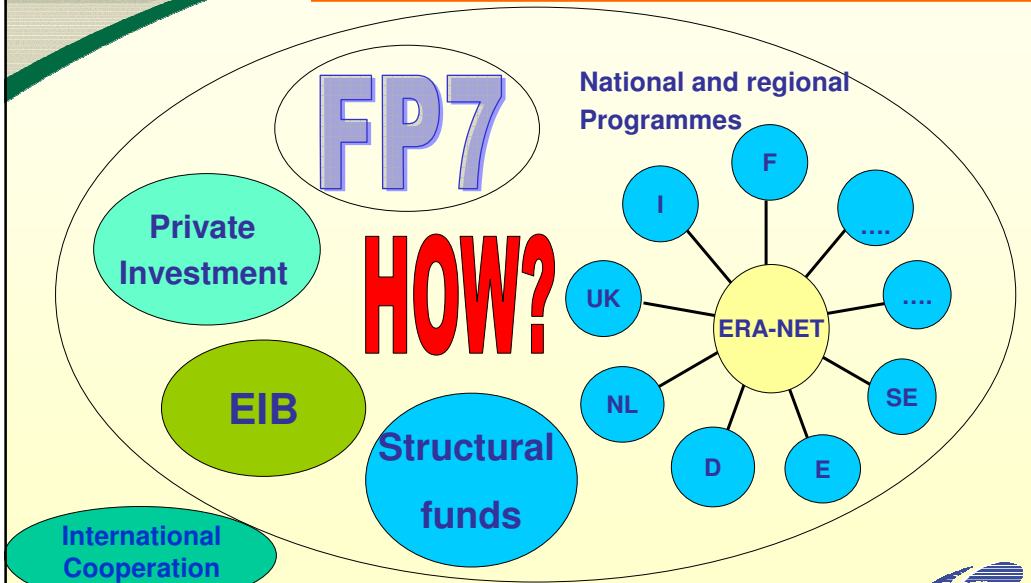


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Key Messages of EoI Letters for a JTI

- ✓ Hydrogen and Fuel Cell Technologies have huge potentials
- ✓ Strong agreement with HFP strategy – JTI a ‘natural’ sequence – strong support
- ✓ A JTI would be an incentive to invest in Europe
- ✓ The proposed JTI will be a tool tailored for both SMEs and large Industrial Companies
- ✓ EC participation will ensure transparency and neutrality
- ✓ A “European” JTI will be the ideal complement to local and regional public/private partnerships
- ✓ Favouring applied RTD, large demos, market framework preparatory activities

JTI will require public & private funds



Members of the JTI

- ✗ **The European Community, represented by the Commission**

AND

- ✗ **Industry**

To be determined, and currently under discussion, the role of:

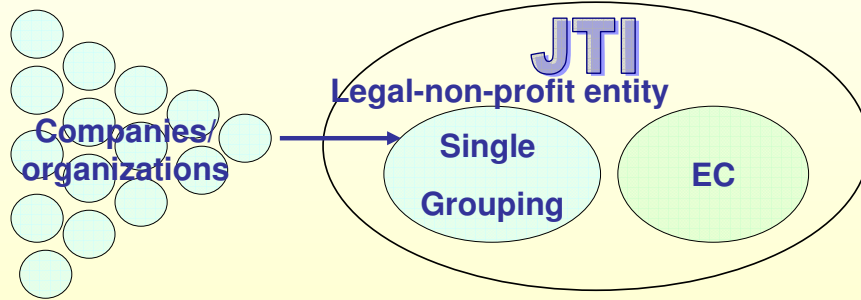
- ✗ **Leading research providers**
- ✗ **Regional authorities (especially those with H2 programmes willing to host large-scale demonstration actions)**
- ✗ **Member States**

MS and Regions involvement?

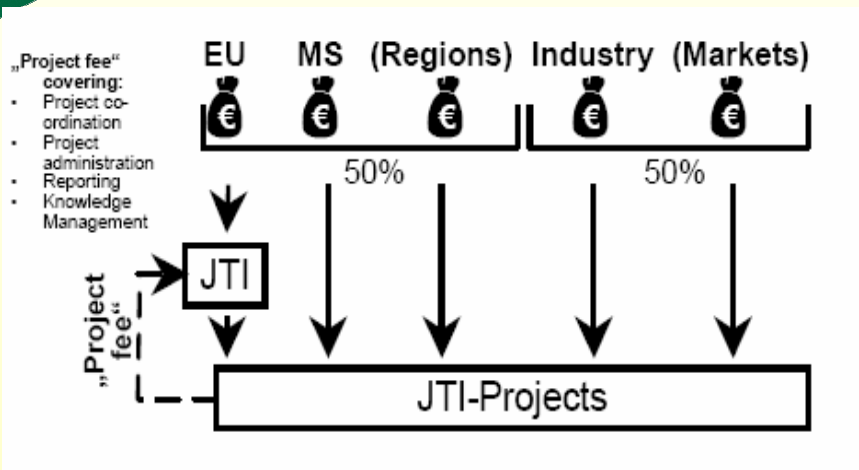
The JTI should be the central pillar of a truly integrated European effort:

- ✗ **How can the MSs and regions contribute to the JTI?**
 - **Contribute directly to the JTI budget (Membership) ?**
 - **Contribute directly to JTI projects (funding national partners)?**
 - **Collectively (several Member States) take a part of the JTI programme?**
 - **Run complementary activities in parallel with the JTI (aligning with its objectives)?**
- ✗ **The MS Mirror Group of the H2/FC Technology Platform working with the HyCo ERA-NET can be instrumental in answering the above questions**

HFP Industry View of a Possible Membership via a Single Grouping



HFP View of potential JTI Financing Modalities



Possible Operation of the JTI

- ✗ The JTI will have a **Governing Board** of members and an **Executive Director**
- ✗ The **Governing Board** will take decisions – overall strategy, annual work programme, annual accounts and reports etc
- ✗ The **Executive Director** (appointed by and accountable to the Board, but acts independently) will execute the JTI programme (with the JTI Programme Office staff)
- ✗ The **Programme Office** will have a key role to play in driving the whole process forward and mobilising stakeholders (incl. SMEs)
- ✗ **Member States** will have a consultative (and participative?) role (to be discussed with Council)
- ✗ The **HFP AC** and **MG** will continue to have a wider consultative role embracing all activities in the field

Estimated Timeline for the JTI

- Revised EC proposal for FP7 to Council by **May 2006**
- Adoption of the FP7 proposals by Council by **Autumn 2006**
- Commission proposal for a EU Council Regulation defining JTI legal structure, operational rules and content under Article 171 **End of 2006**
- Formation of the JTI legal structure and its constituent bodies (Governing Board, Director, etc) in **1st quarter 2007**

Current uncertainties

- × **EU Financial Perspectives 2007-2013**
 - ✓ MEPs still have to agree – EP rejected initial proposal
 - ✓ Consequences for Energy RTD budget (+JTI) as yet unknown
- × **EC Art. 171 proposal for the JTI**
 - ✓ unlikely until budget issues resolved
 - ✓ will available budget justify the setting up of a new JTI structure?
- × **Adoption of the EC proposal by Council**
 - ✓ mixed signals from MSs about JTIs in general
 - ✓ will they impose unacceptable constraints/ conditions?
 - ✓ how long will the process take?

Staying informed

Energy Research web site and Energy Helpdesk:
http://europa.eu.int/comm/research/energy/index_en.html
rtd-energy@cec.eu.int

Energy Policy
http://europa.eu.int/comm/energy/index_en.html

Calls for proposals
<http://fp6.cordis.lu/fp6/calls.cfm>

Towards Seventh Framework Programme
http://europa.eu.int/comm/research/future/index_en.html

Newsletter, Information days and similar events, conferences
<http://europa.eu.int/comm/research/energy/pdf/renews4.pdf>
http://europa.eu.int/comm/research/energy/gp/gp_events/action/article_2790_en.htm

European Hydrogen and Fuel Cell Technology Platform
www.HFPEurope.org

Joint Research Centre
<http://www.jrc.cec.eu.int>



**Muchas Gracias
por su atención**



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