

European Commission Statement IPHE Steering Committee Meeting

Kyoto, 14-15 September 2005

1. European Union latest policy developments
2. Evolution of the European Hydrogen and Fuel Cell Technology Platform. Moving from planning to implementation
3. Proposal for a European Joint Technology Initiative (JTI) for Hydrogen and Fuel Cells
4. European Commission contribution to IPHE activities
5. European Commission position regarding some issues for discussion during this Steering Committee meeting

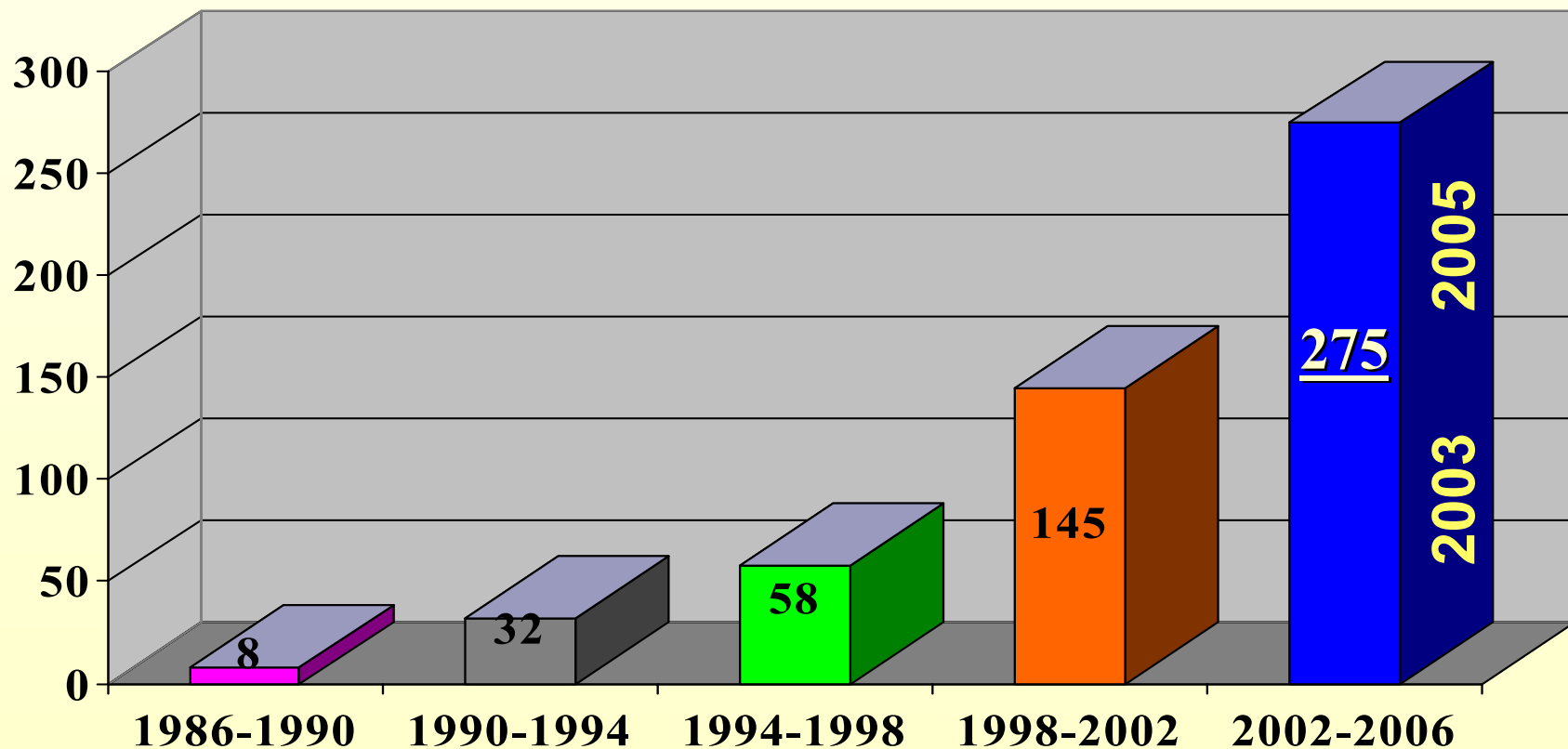
- **Green Paper on Energy Efficiency: “doing more with less”**
- **Communication “Winning the Battle Against Global Climate Change” (see annex 1)**
- **Creation of CARS21. A High level group with car industry aiming at improving its competitiveness**
- **Adoption of the Seventh Framework Programme for Research (2007-2013). Doubling current EU research funding.**



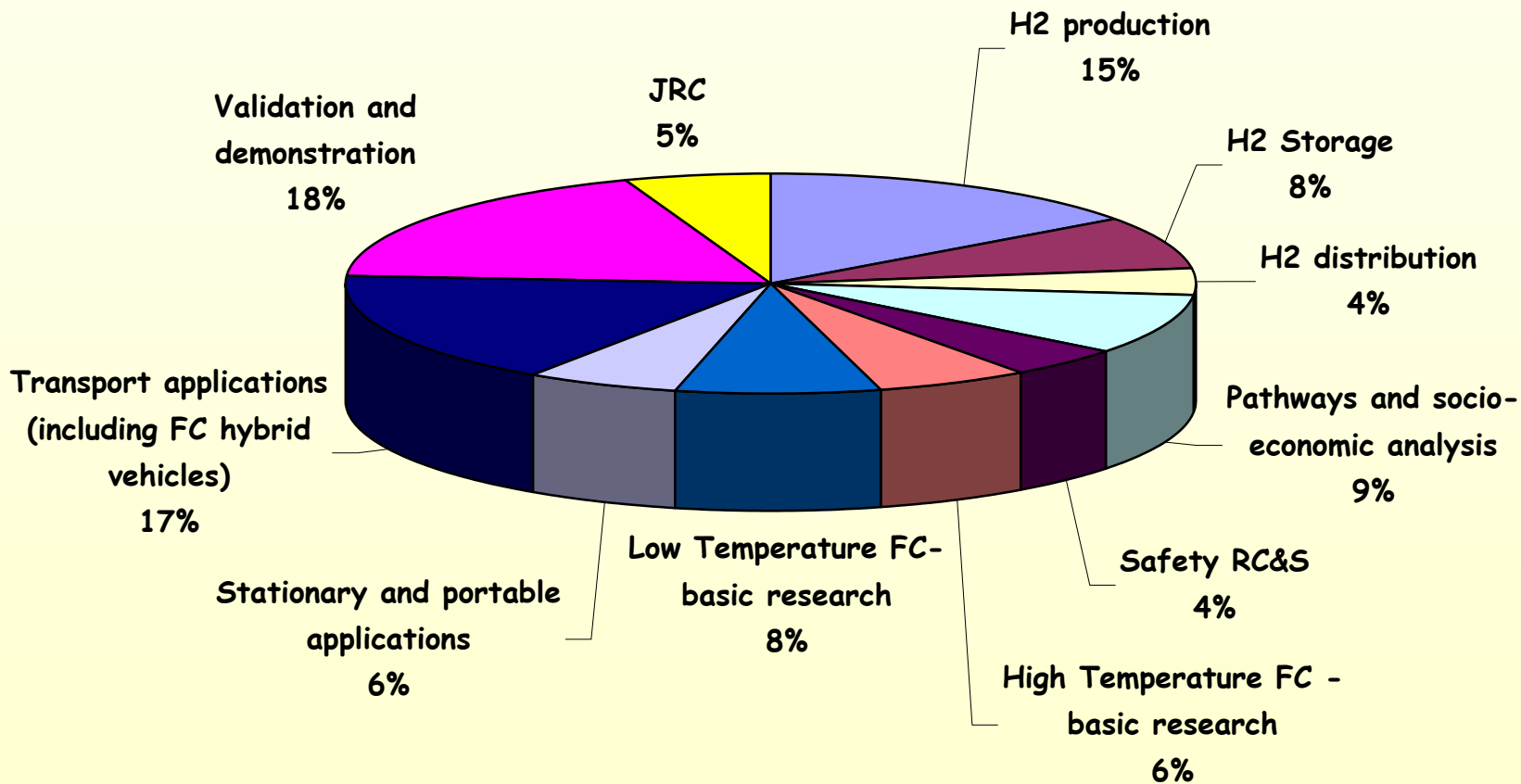
From planning to implementation

- Hydrogen and Fuel Cell investment in projects in the current Framework Programme has reached 600 M€
- Endorsement by the Technology Platform of the two foundation documents: Strategic Research Agenda and Deployment Strategy; and adoption by the Advisory Council of an Strategic Overview
- Now the foundation and strategic guidelines are set, the European Union moves towards implementation

EC Support to Fuel Cell and Hydrogen R&D in Framework Programmes



FP6 Budget Breakdown for H2/FCs



Total EC Contribution ~275 M€



Key points of Strategic Overview

H₂

European Hydrogen & Fuel Cell
Technology Platform

Strategic Overview



Need for a highly focused, 10 year RD&D programme:

- reduce FC system costs by a factor 10 (100 for transport applications);
- enhance performance and durability of FC systems by a factor ≥ 2
- reduce costs of hydrogen delivered by a factor ≥ 3

Need to combine private and public investment at EU scale including EU, MS and regions – to double present effort

Need to develop Policy frameworks and financial schemes

Integrated RTD + D programme including large-scale demonstrations (« Lighthouse Projects ») to bridge the gap between R&D and commercialisations.

The aim would be to establish early markets – including portable applications – could be established by 2010, with stationary applications achieving commercialisation by 2015 and mass transport applications by around 2020

European Joint Technology Initiative (JTI)

✗ The JTI is a new management structure that will allow a more efficient organisation of the R&DD resources in Europe and will have the necessary critical mass. Some key features would be:

- ✓ Concentrate efforts and funding from the industry and research communities with those from European, National, Regional and Local programmes in the form a Public Private Partnership
- ✓ Goal-oriented approach, aimed at achieving specific targets and intermediary milestones (quality gates)
- ✓ Optimal integration of research and demonstration actions, with continuous interaction to accelerate progress
- ✓ Concerted effort over the whole supply chain
- ✓ Driven by the industries that will have to take large-scale commercialisation decisions



Possible content of a JTI

- ✘ European fuel cell development programme – focussed R&DD programme with key milestones
- ✘ Sustainable hydrogen supply programme – accelerated development of the critical technologies of hydrogen production, storage and distribution
- ✘ Lighthouse demonstration programme – phased approach, with stepwise improvements in technologies and increasing number of sites and demonstrators / quality gates to select the most promising technologies
- ✘ Market framework preparatory activities (cross-cutting) – proactively fostering business opportunities and early market applications in Europe and removing non-technical barriers

Timeline for the JTI

- ✘ **Already included in the Commission proposal for the Seventh Framework Programme**
- ✘ **The political discussion with the Council and the European Parliament will follow now**
- ✘ **Now the European Commission is gathering the Expressions of Interest from possible partners in the JTI**
- ✘ **The target would be to have the JTI management structure established by the end of 2006.**



EC contributions to the IPHE Scoping papers and events

- × **Development of scoping paper on Regulations codes and standards** (*presentation by M Steen, JRC*), and contributions to all the other scoping papers
- × **Co-chairing of the IPHE Evaluation Team**
- × **Opening and expand workshops to IPHE, « FC Test » Seminar** (Ulm, September 2004) and **Fuel Cell buses** (Porto, November 2004, to be continued in Vancouver, December 2005)
- × **Hosted IPHE workshop on Hydrogen Storage** (Lucca, Italy, 20-22 June 2005)
- × **Hosted IPHE event on hydrogen safety, last week** (Pisa, Italy, 8-10 September 2005)
- × **Hosting and sponsoring IPHE workshop on hydrogen production from renewable primary energy sources** (Seville, Spain, 24-26 October 2005)

In annex 2 you can find further details on these events

EC contributions to the IPHE Projects

- HyWAYS – hydrogen pathway analysis
- HySAFE network for hydrogen safety
- × **NESSHy** – Novel efficient solid storage for hydrogen
- × **HARMONHy** – gap analysis strategy for pre-normative RTI
- NATURALHy – distribution of H₂/NG mixes
- FCTESTQA – fuel cell tests
- × **CUTE** – Fuel cell buses demonstration

EC contributions to the IPHE Projects

- ✘ **New European Union projects which include IPHE partners have been recently established:**
 - ✓ HyFLEET:CUTE (China, Norway, Iceland and Australia);
 - ✓ HyApproval (Japan, China, Iceland, Norway and the US);
 - ✓ FCTESTQA (US, Japan, China, Russia, Korea)
 - ✓ NESSHy (US, Norway, Iceland)
- ✘ **The EU has given priority and will allocated some budget to the topic: “Enhancing strategically international cooperation initiatives”, which aims at integrating IPHE partners in on-going projects (see annex 4) to deliver results of relevance to the IPHE process.**



Issues for discussion in this Steering Committee meeting (1)

- ✘ The new **IPHE Projects** are good basis for research and demonstration cooperation. This will produce joint deliverables in the medium term.
- ✘ More projects should be recognised ASAP
- ✘ Processes for generating new projects and activities must be facilitated and streamlined
- ✘ **IPHE roadmapping** exercise underway should plan for close links with Member's Programmes and IPHE projects



Issues for discussion in the Steering Committee meeting (2)

- × We need to pay careful attention to an uncontrolled **expansion of IPHE** membership
- × **New management structures** or bodies that would streamline the IPHE activities could be considered, but EC is clearly reluctant to the creation working parties and task force that lead to an uncontrollable and gigantic structure that we are neither able to staff nor to monitor.
- × Efforts to **raise awareness** about the IPHE with emphasis on the benefits it may provide to the stakeholder community, in particular those involved in the development, validation and deployment of the technology, must be continued and intensified



ANNEX 1 – Climate change

Kyoto Protocol entered into force on 16/02/05

- ✓ **GHGs - 8% over 2008 - 12 compared to 1990**
- ✓ **Burden sharing agreement (EU-15)**
- ✓ **On track so far**
 - **ECCP identified cheapest routes**
 - **ETAP for specific action**
- ✓ **EU Greenhouse Gas Trading Directive – trading started Jan 05**
- ✓ **“linking” directive transferring CDM and JI credits into the EU GHG trading directive.**
- ✓ **Kyoto is only a first step.**



Communication from the EC (February 2005) :
“Winning the Battle Against Global Climate Change”

Challenges : More drastic GHG reductions will be needed
max. 2°C increase, max. 450 ppmv,- 50 / 60% by 2050

- × **Participation Challenge: Include all major emitters**
 - ✓ share of EU-25 in world GHG emissions will decline to <10%
 - ✓ share of developing countries will expand to >50%

- × **Innovation Challenge**
 - ✓ *Pulling technological change:* Stimulate markets to promote adoption of new technology

 - ✓ *Pushing technological change:* Invest in knowledge economy to give EU a competitive edge in a low carbon future

- × **Adaptation Challenge**

Communication from the EC (February 2005) : “Winning the Battle Against Global Climate Change”

Conclusions

- × The inclusion of more policy areas:
 - ✓ widen scope of international action to cover all greenhouse gases and all sectors.
- × **Enhanced innovation to transform energy and transport systems**
 - ✓ **optimal mix of technology ‘push’ (RTD) and ‘pull’ (Market Stimulation) instruments**
- × The continued use of market based and flexible instruments
- × The inclusion of adaptation policies
 - ✓ More resources need to be allocated in the EU to adapt effectively to climate change
- × **The broadening of participation**
 - ✓ **Specific projects/ programmes with major emitting nations to improve energy efficiency or to promote development and adoption of low-carbon technologies**

CLIMATE CHANGE - POST 2012

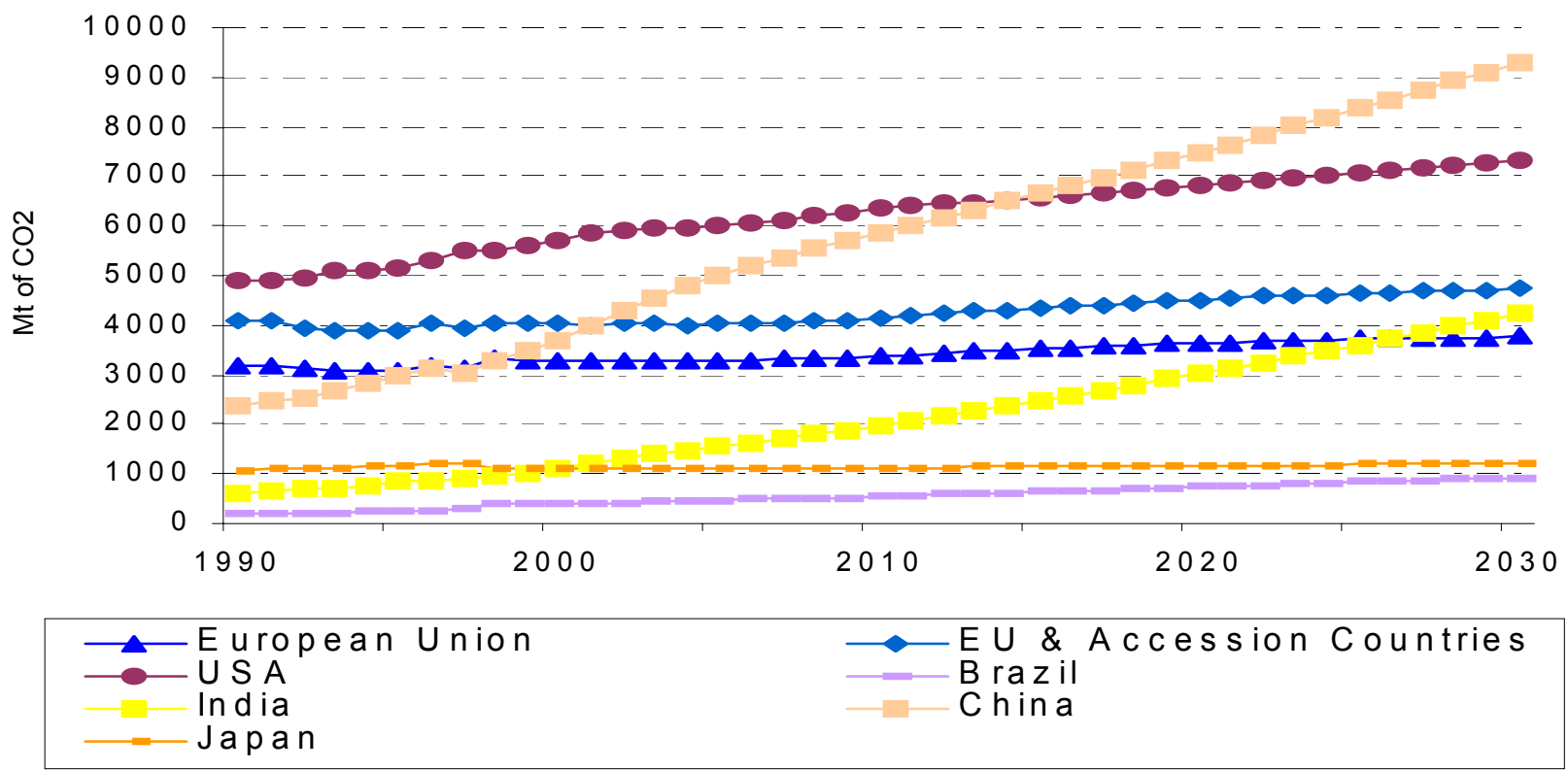
Communication from the EC (February 2005) :
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EC recommendations for a post-2012 EU Climate Change Strategy: NEXT STEPS

- × Immediate and effective implementation of agreed policies
Kyoto Protocol, ETAP, Energy Efficiency Initiative.
- × Increased public awareness
- × **More and better focused research**
increased EU funding under the 7th Framework Programme
- × Stronger co-operation with third countries
technology transfer, scientific R&D cooperation
- × European Climate Change Programme in 2005
 - ✓ energy efficiency,
 - ✓ RES,
 - ✓ the transport sector: biofuels and hydrogen
 - ✓ **carbon capture and storage.**



Energy Related CO₂ Emissions (WETO - EC DG RTD)





Annex 2

IPHE events in the European Union in 2005



Details of IPH events involving EC

Topic	Place	Dates	Current Status
Hydrogen storage	Lucca, Italy	20-22 June 2005	<ul style="list-style-type: none"> - Scientifically: Big success - Only a few projects identified for IPHE collaboration - Collaboration scheme not well understood - Interaction with IEA still an issue
	Pisa, Italy	8-10 September 2005	<ul style="list-style-type: none"> - 1st international conference on safety - Conference just held – no feedback yet - IPHE requests integrated in programme - Side meetings to discuss IPHE collaborations
Renewable H₂ 	Seville, Spain	24-26 October 2005	<ul style="list-style-type: none"> - Programme completed and speakers confirmed - Invitations sent (~200); 120 positive responses

Annex 3

EU Projects selected in 2005



FP6 Last Call for proposals: 29 new contracts 152 Meuro – Projects to start in 2005/2006

Area		Number of contracts	EC funding (MEURO)
Hydrogen	H ₂ production	7	24.93
	H ₂ storage	1	7.5
	H ₂ safety, regulations, codes & standards	2	4.4
	H ₂ pathways and roadmaps	4	12.47
	Total Hydrogen		
Fuel Cells	High Temperature Fuel Cells	1	6.5
	Solid Polymer Fuel Cells	3	11
	FC Transport applications	2	14.13
	FC Stationary applications	1	7.5
	Hybrid vehicle auxiliary components	5	20.45
Total Fuel Cells			59.58
Validations & Demonstrations	Transport & Hydrogen infrastructure	2	43
	Power Production	1	

Annex 4

Call FP6-2004-Energy-4 M-L



Call FP6-2004-Energy-4 M-L Research Activities

A limited budget has been allocated to the topic: “Enhancing strategically important international cooperation initiatives”: draft can be available now published on 22 of September.

Proposals for activities to facilitate and enhance the international cooperation dimension of **running FP6** projects dealing with major technical and non technical barriers to hydrogen and fuel cells deployment

Preference will be given to proposals designed to stimulate co-operation and exchange through the established **IPHE** framework

Activities could include: workshops, studies, dissemination, cross validation and calibration of theoretical and experimental results, benchmarking, round-robin testing, gap analysis and development of complementary research action plans and strategies

Third country partners can apply but consortia should include European partners(s) representing the running FP6 project (e.g. co-ordinator or work package leader).



Call Energy-4: Theme 2

Enhancing strategically important international cooperation initiatives

- ✓ Preference will be given to proposals designed to stimulate co-operation and exchange through the established international cooperation frameworks IPHE and CSLF and their recognised projects.
- ✓ Activities could include, for example, workshops, studies, joint dissemination activities, actions addressing cross validation and calibration of theoretical studies and experimental results, benchmarking, round-robin testing, gap analysis and development of complementary research action plans and strategies.

