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Community Research

Workshop on Regulations, Codes and Standards For H₂/FC Technologies Brussels, 25th February 2005

European Commission





Objectives of this Workshop

- ✘ Inform contractors about the current policy context
- ✘ Assimilate progress with respect to the 'Gap analysis' for RCS
- ✘ Gather recommendations for future topics for prenormative research
- ✘ Propose recommended actions, whenever appropriate, in identified priority areas





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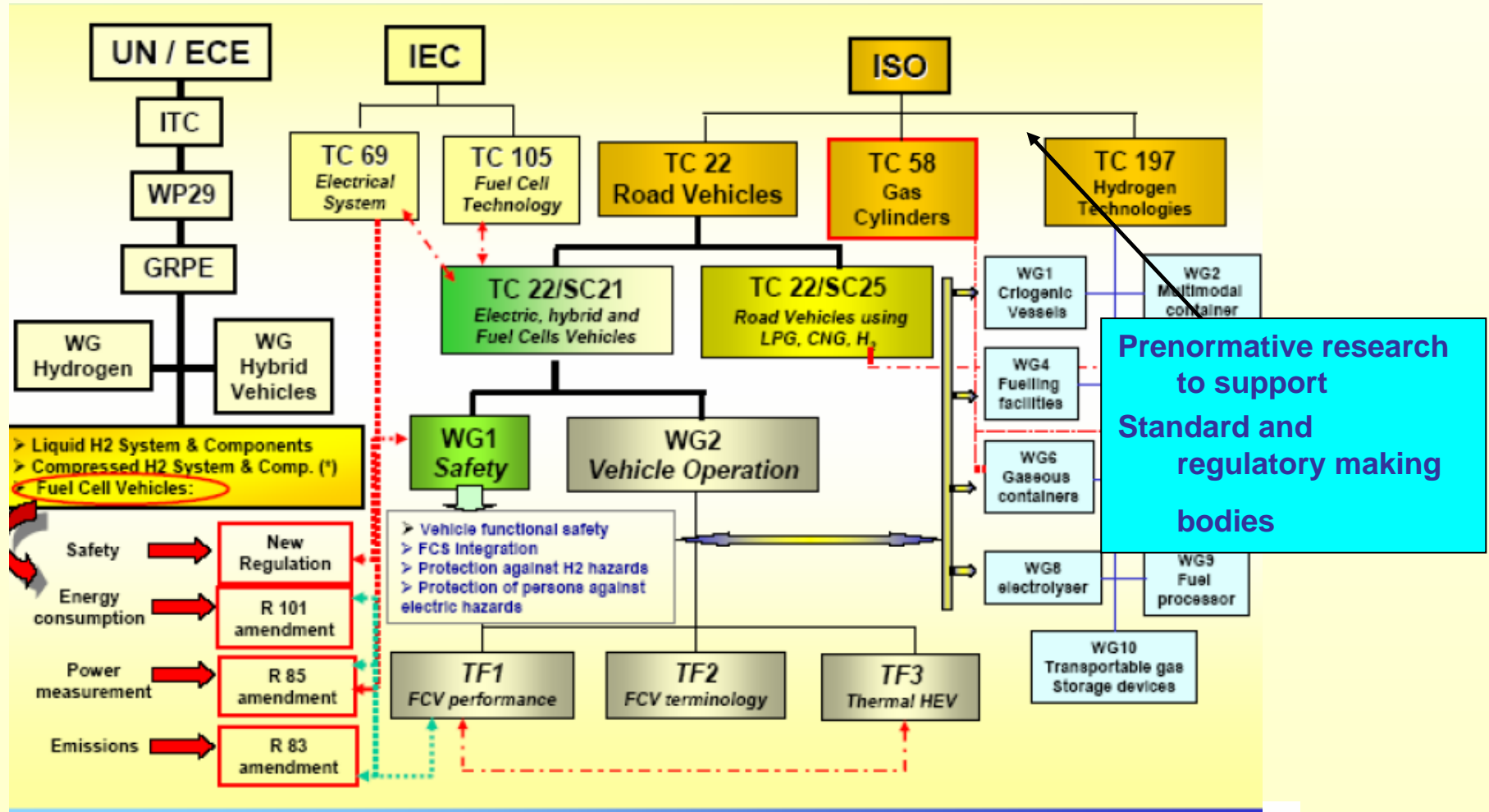
The workshop context

- × Technology Platform Initiative Group on Regulations, Codes and Standards
- × CEN Mandate M/349
- × IPHE- Scoping paper on RCS and Safety
- × EU (FP5)/FP6 projects





RCS is a complex business !



Source: HarmonHy





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7th Framework Programme

- **For the period 2007-2013**
- **Proposed substantial increase in budget**
- **Orientations presented in Commission Communication**
(COM/2004/353 of 16 June 2004)
- **Proposes concept of European Joint Technology Initiatives (JTI)**
- **Tentative timetable:**
 - ✓ EC proposal on FP – April 2005
 - ✓ EC proposal on SPs – September 2005
 - ✓ Adoption of FP and SPs – by Summer 2006
 - ✓ First calls – late 2006





Elements of a European Strategy for Hydrogen and Fuel Cells

- **High Level Group H₂ and FCs (2002-2003) - Vision report : “*Hydrogen energy and Fuel Cells – A vision of our future*”**
- **European Hydrogen and Fuel Cell Technology Platform**
- **Building an European Research Area in hydrogen**
- **Capitalising RTD and Demonstration projects in FP5 and FP6 and national programmes**
- **FP7 (2006-) –Hydrogen Joint Technology Initiative**



HLG Vision

Commission H/FC Project Team
(Inter-service Group)

H2/ FC TECHNOLOGY PLATFORM

Member States' Mirror Group

Advisory Council
(incl. Executive Group)

TP Secretariat
Information Office
IT Support Service

Steering Panels :

Strategic Research Agenda

Deployment Strategy
(incl. policy framework)

(possible) Initiative Groups :

Public awareness

Safety, codes & standards

Business development

Education & training

PLATFORM OPERATIONS

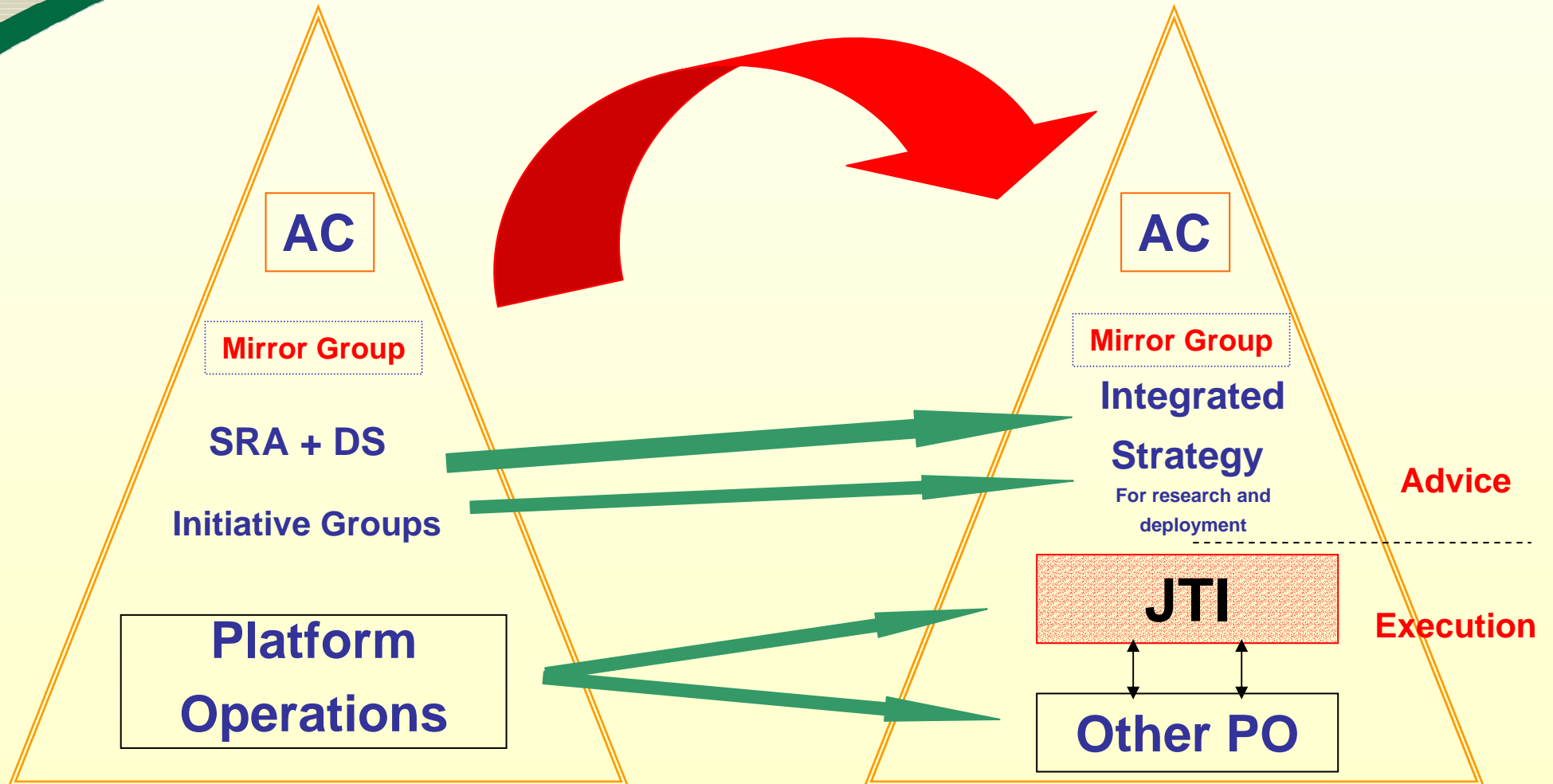
New and on-going projects and initiatives (EC + MS national, regional and local)

GENERAL ASSEMBLY

(Bi-)annual Technology Platform Forum



Evolution of the HFP





JTI concept and values

- × Addressing key EU energy, environment and industry policy issues
- × Implemented through Public-Private-Partnership; governance structure to be determined
- × Envisages strong industrial participation in shared management of integrated RTD and demonstration activities, based on the research and deployment strategies developed in the Technology Platform
- × Supporting a European Research Area
- × Developing outreach at international level
- × Capitalising on FP5 and FP6





Possible scope for JTI

- × Fuel cell systems – transport, stationary and portable
- × Hydrogen production, focus on sustainable renewable routes and transition from fossils
- × Hydrogen delivery and storage
- × Hydrogen safety and testing
- × Lighthouse projects, integrating RTD and Demonstration Collaborative fundamental research – materials, processes
- × Support to development of policy and regulatory framework, including pre-normative research, socio-economic research, education and training, dissemination





Potential areas for pre-normative research (based on IG preliminary Gap Analysis)

- × **Transport:**
- × **H2 purity (and acceptable trade off)**
- × **Metering and consumption measurement**
- × **H2 for other transport applications (e.g. ships, aircraft)**
- × **Emergency –scenario analysis, mapping incidents**
- × **Vehicle circulation- in tunnels, garages, other confined spaces, etc**
- × **Development and validation of test procedures (including performance, lifetime, crash) for components and complete systems**





Potential areas for pre-normative research (based on preliminary Gap Analysis) (1)

- × **Production/distribution/storage**
- × On-site H₂ production/zoning safety analysis/set-back distances
- × Home production (relevant to home refuelling and domestic CHP)
- × Trucking and storing H₂ (for distribution) e.g. in composite tanks
- × H₂/NG pipelines





Key Challenges!

- × Establish baseline – map RCS activities
- × **Assimilate** ongoing effort : **Capture and structure** knowledge and experience from RTD and D projects,
- × Gap analysis plus **prioritisation** of pre-normative RTD needs – ensure enabling language in FP7, possible JTI
- × Concentrate effort on **main bottlenecks** and issues that affect EU **industry competitiveness** (e.g. hydrogen purity) – ensuring international relevance
- × Ensure **knowledge transfer** to standards and regulatory bodies
- × Pre-normative EU RTD aimed at **supporting** standards-making process –contributes to the body of knowledge!
- × SRA and DS identify time horizon of 2010 (stationary), 2015 (transport) – **very short window** for comprehensive RCS frame, if pre-normative RTD needed!

