

France Statement

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Significant changes in the funding of French National R&D

- Ministry of Research: creation of the National Research Agency
- Ministry of Industry: creation of the National Agency for Industrial Innovation
- Selection of specific projects of regional development. In the domain of energy:
 - Rhône-Alpes region (Lyon - Grenoble)
 - Provence region (Marseille - Nice)



HYDROGEN AND FUEL CELLS NATIONAL ACTION PLAN

DEVELOP THE HYDROGEN ECONOMY IN FRANCE

- 2010: 55 MW installed in France
- Beyond 2010: install > 20 MW/year

RESEARCH

R&D program built on the partnership between public research organizations and industry. Strong involvement of France in the EU Hydrogen Technology Platform.

SHORT TERM

Deploy specific **markets** (micro cogeneration, emergency power supplies, decentralized electric production, transports, portable applications ...)

TARGET BUDGET FOR 5 YEARS : 200 M€(+ 400 M€Industry)



Research Program

- ❑ Fuel cells: PEMFC, (SOFC et PCFC)
- ❑ On board storage and safety : compressed gas, hydrates,
- ❑ Transport and distribution : materials, networks, etc.
- ❑ Sustainable production: HT electrolysis, HP electrolysis, thermochemical cycles
- ❑ Cross cutting issues: technical and socio-economics, education and formation.



Hydrogen selection of proposals 2005

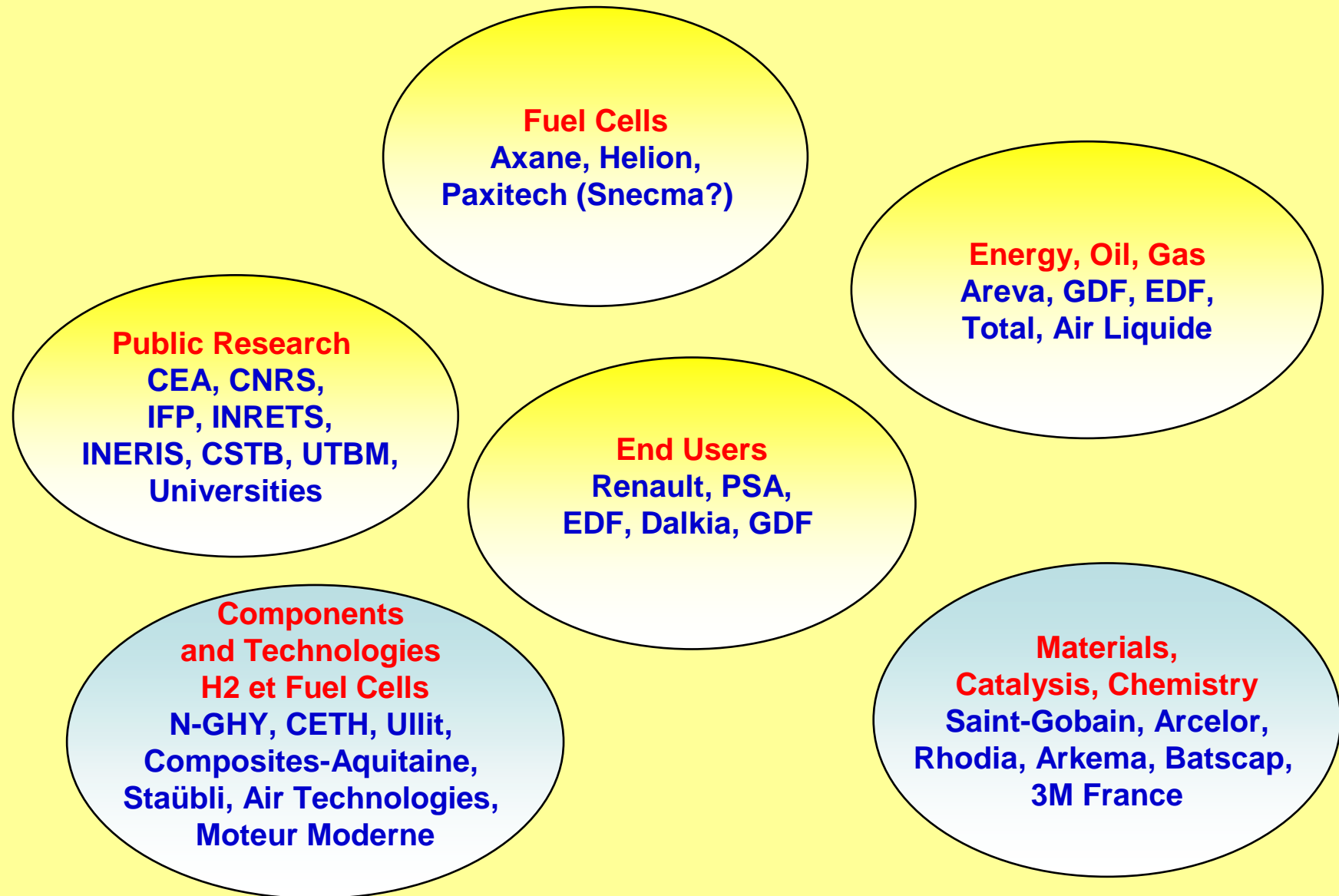
Two step evaluation

- Scientific evaluation committee, chaired by Jerome Perrin (Air Liquide)
- Strategic Committee, chaired by Anne Lauvergeon (Areva)

Process to be completed September 26

Budget 2005 30 M€ + (10 M€ Ademe)

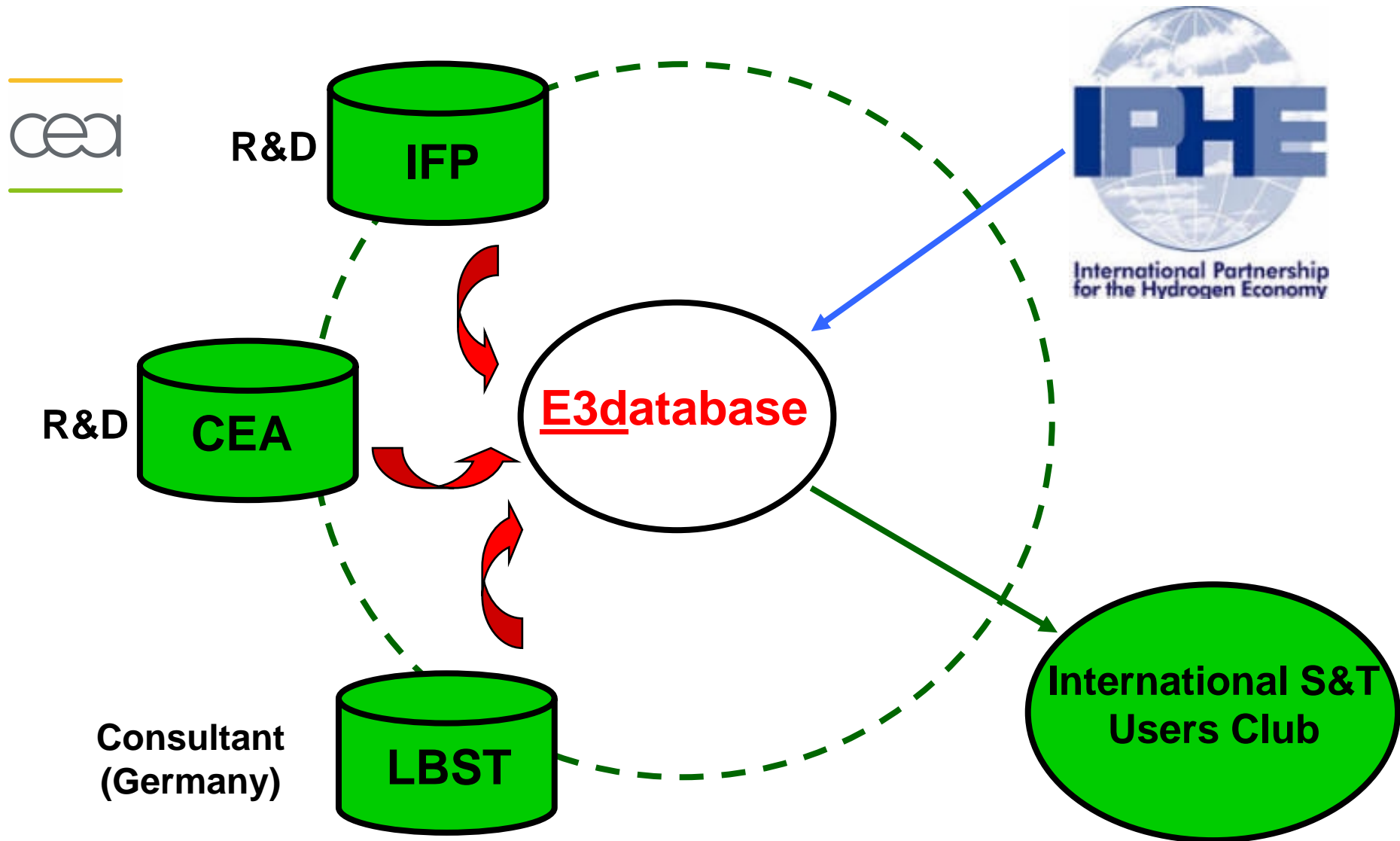
French Research on Hydrogen and Fuel Cells





- ☐ Hydrogen will accelerate the introduction of renewable energies
- ☐ A revolution : decoupling the the primary energy sources from the applications
- ☐ The hydrogen vector has significant advantages
 - ☐ Stationary and transport applications : a global energy economy
 - ☐ encourages to develop energy efficient chains from production to utilisation
- ☐ Numerous synergies between natural gas and hydrogen on the whole chain : a “natural” transition
- ☐ Gaz companies have considerable experience with customers : production, transmission, distribution, safety, marketing, maintenance of large gas networks

E3database an international tool for data integration



Fuel cell R&D

PSA PEUGEOT CITROËN



Development of a 60 kW fuel cell in collaboration with CEA (2003 – 2006) in the framework of PAco

Tests and integration of de 10 kW fuel cells on electric vehicles with range extender

Collaborative Research

- National Research Agency
- National Agency for Innovation and Industry
- EU Commission (Program Hysys)

Ambition : technological leadership on range extender in 2009

Genepac project

Partnership: PSA/ CEA / CNRS

- Definition and prototype of a PEM system : nov 2005

Net power: 60 kw

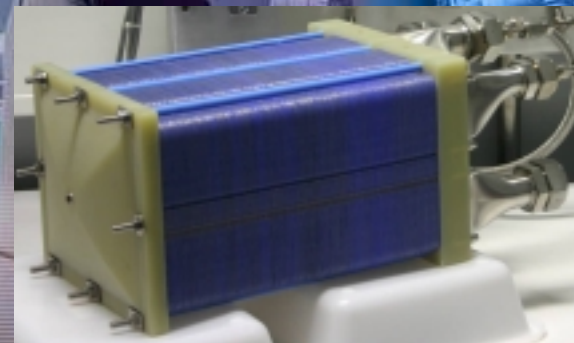
Cold start at - 20 °C

- Objectives

Compacity: 1,5 kw/l

System efficiency > 45 % at max power

Fuel Cell efficiency: > 50 %





Shanghai
2004

4 seats
850 kg
400 km







After Los Angeles,
Heidelberg,
San Francisco,
Shanghai and Kyoto

Please note

The BIBENDUM CHALLENGE

Will take place in Paris

June 9 - 12, 2006

Technical tests, driving tests and technological center will take place on the CERAM circuit in Mortefontaine, close to Paris that will welcome us around the village of the Bibendum Challenge

The rally will take us to Paris where we will stop in the center of the capital for a special event to meet the public Sunday, June 11

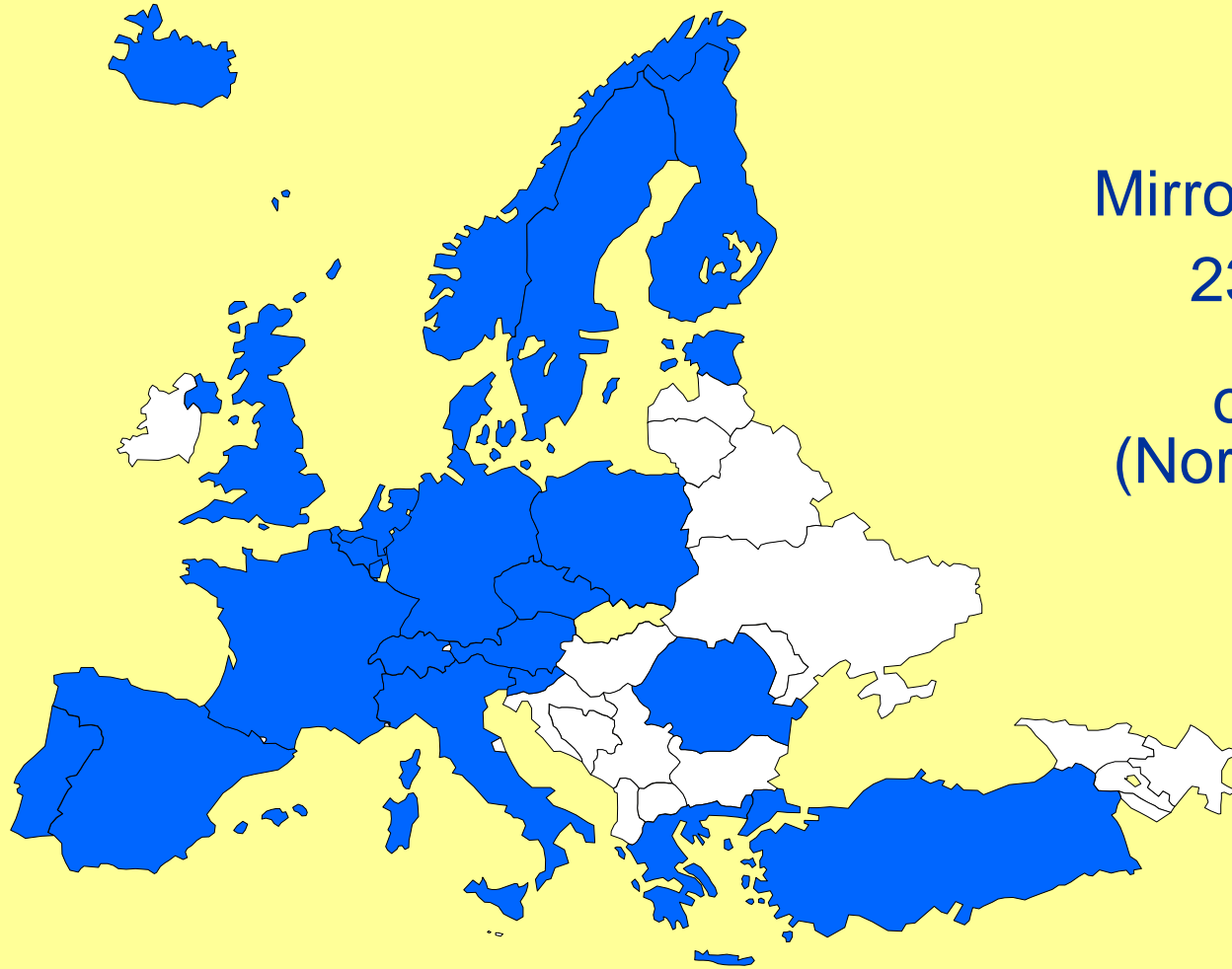
An international symposium on sustainable mobility will take place in Paris Monday, June 12.

Visit our Web site

www.challengebibendum.com



Working together



Mirror Group (MG):
23 countries
+
one region
(Nordic countries)
+
EC

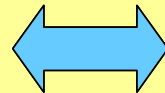


A POWERFUL SYSTEM

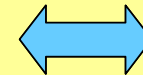
Council of
Ministries



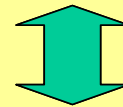
Ministries

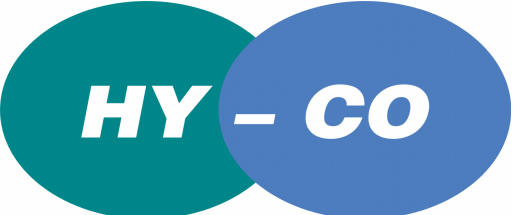


Mirror
Group



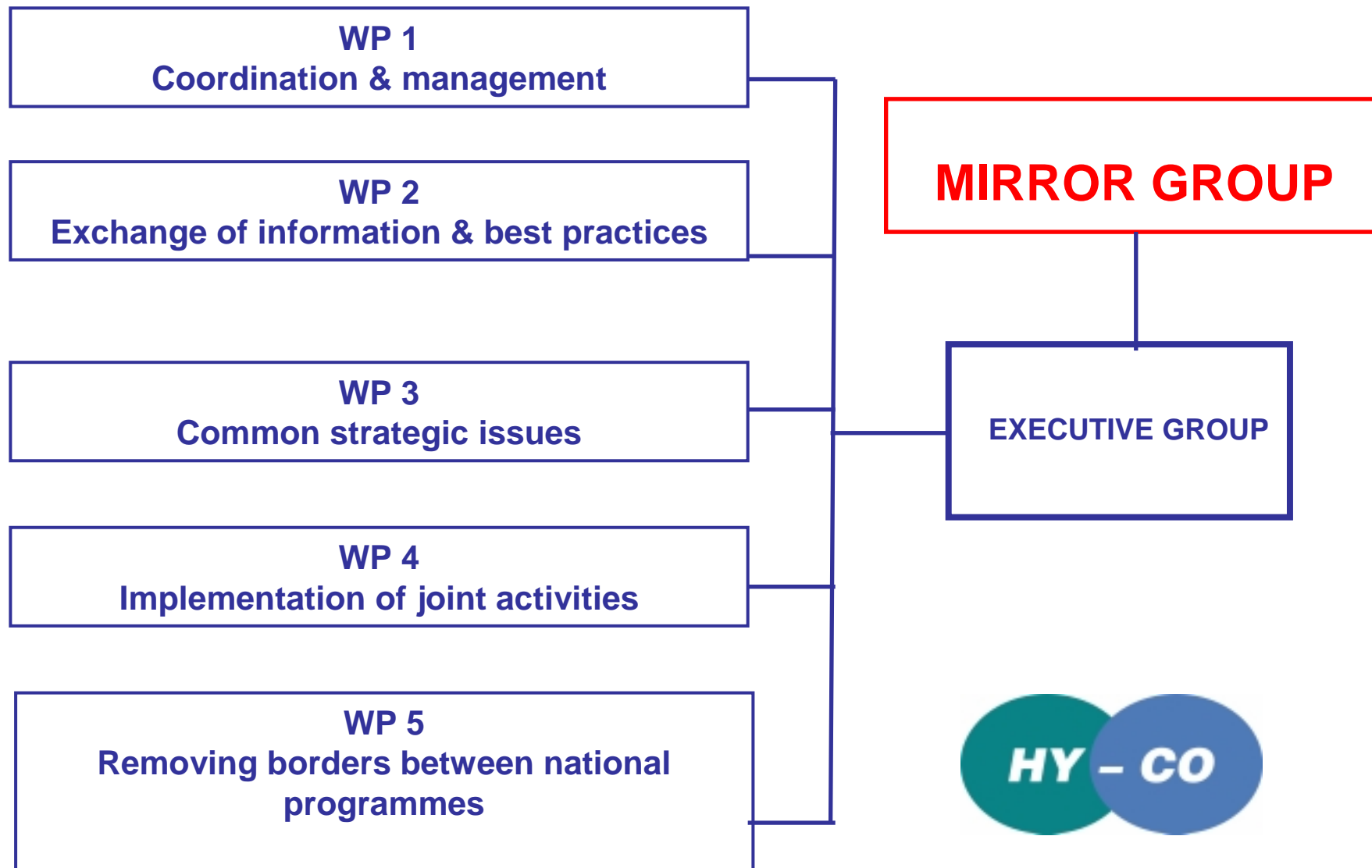

Advisory
Council





2.7 M€

budget



16th World Hydrogen Energy Conference

16^{ème} Conférence Mondiale de l'Hydrogène Energie



Conclusions

- The last two years have seen the development of a major interest for hydrogen in France and in the rest of the world.
- Major industry is convinced that the time has now come to be part of a world effort.
- France is part of the EU Technology Platform. The strategic agenda and the deployment strategy are now completed. The mirror group works at removing the borders between member states
- The 7th EU Framework Program will develop important new initiatives (Joint Technology Initiatives).
- The IPHE contribution is a powerful forum to link all the world efforts. IPHE is a success.





