



# Brief Country update – France

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**15<sup>th</sup> IPHE Steering Committee Meeting-Vancouver, 2011**



- 34 Billions Euros will be invested in the public domain to prepare France to a new economy
- 3.6 Billions Euros will be devoted for sustainable technologies
  - 1.6 Billions Euros for decarbonated and renewable energies.
  - 1 Billion Euros for transport (750 M€ for ground transport ).
- 2 Billion Euros for Technological Research Institutes



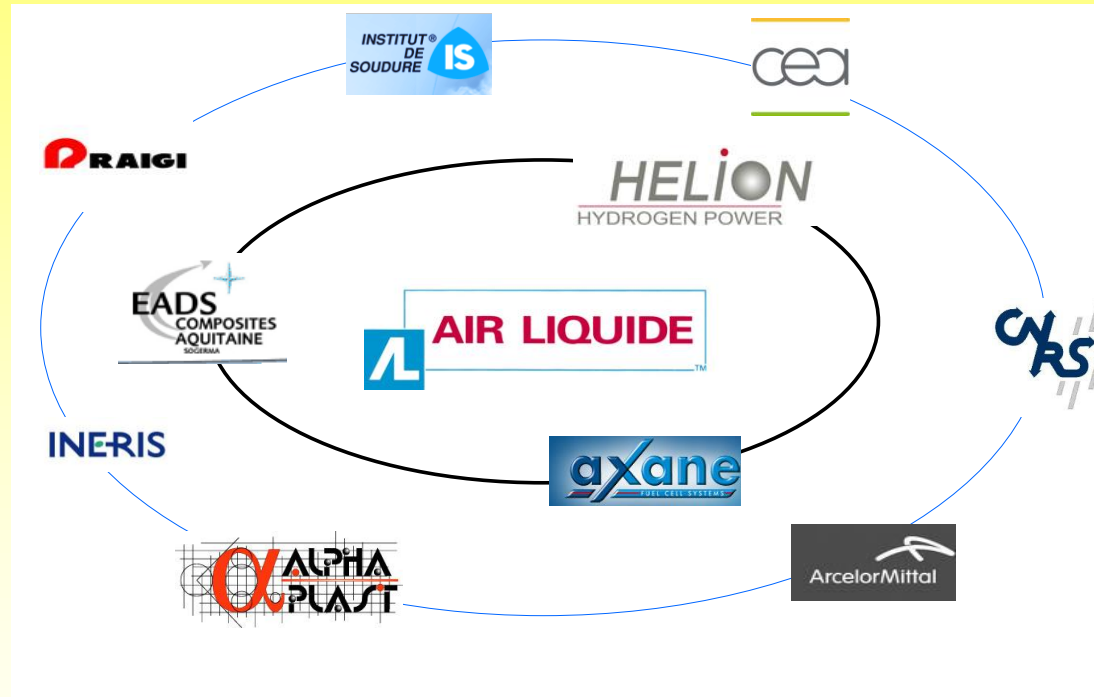
2005-2010 Hydrogen and Fuel Cells Public-Private partnerships projects have received 200 Million Euros



The French National Research Agency will manage a new fund of 16.9 Billion Euros over 5 years by calls of proposals.

# H2E: Horizon Hydrogen Energy

An **deployment** program of 200 M€ coordinated by Air Liquide  
A Public-Private-Partnership federating national competencies



*19 partners, 150 FTE*

*7 years, 2009 - 2016*

*Funding: Private - 123 M€ & Public 67 M€*



## Success of HYPAC !!!

- HYPAC, group of 70 french members from research, industry, regions was created in 2009, followed by a two years action and lobby
- **Gouvernemental French Road map** (Ademe, April 2011), [www.ademe.fr](http://www.ademe.fr)
- **Three « calls for interest »** for projects will be published by Ademe in 2011 in the frame of the IA programme, Energy Part:
  - A first call, launched 6th may, focused on Stationnary, early markets, and Renewable/hydrogen coupling projects (excluding automobile) estimation of the public budget around 100 M€
  - A second published in June, focused on future mobility technologies, in which possible applications like range-extendors for cars are included
  - A 3rd one, in december dedicated on Hydrogen infrastructure



L'hydrogène énergie  
et les piles à combustible

**NEW**

ADEME will invest 1350  
Million Euros on  
demonstrators in the domain  
of renewable energies and  
« Green chemistry »

**About 100 Millions**



FEUILLE DE ROUTE STRATÉGIQUE





- Hydrogen:
  - « Low carbon hydrogen » and « renewable hydrogen »
- Emphasize system integration
- Smart energy grid, smart buildings, systems for sustainable cities, urban transportation, cars
  - *Clean hydrogen production for industry (chemistry, synfuel, biofuels, oil refineries, cement, steel, ...)*
  - *Hydrogen as a temporary storage for increasing the share of renewable energies or direct use (Mix with natural gas, biogas,...)*
  - Stationary
  - Transportation and niche markets
  - Automobile : significant interest in range extender



# Road map

**Massive and centralized  
use for Hydrogen**

*Low carbon Hydrogen  
For Industry*

*Renewable Hydrogen  
for industry*

**H2 centralized production**

**H2 Decentralized production**

*Low carbon Hydrogen  
In National grid*

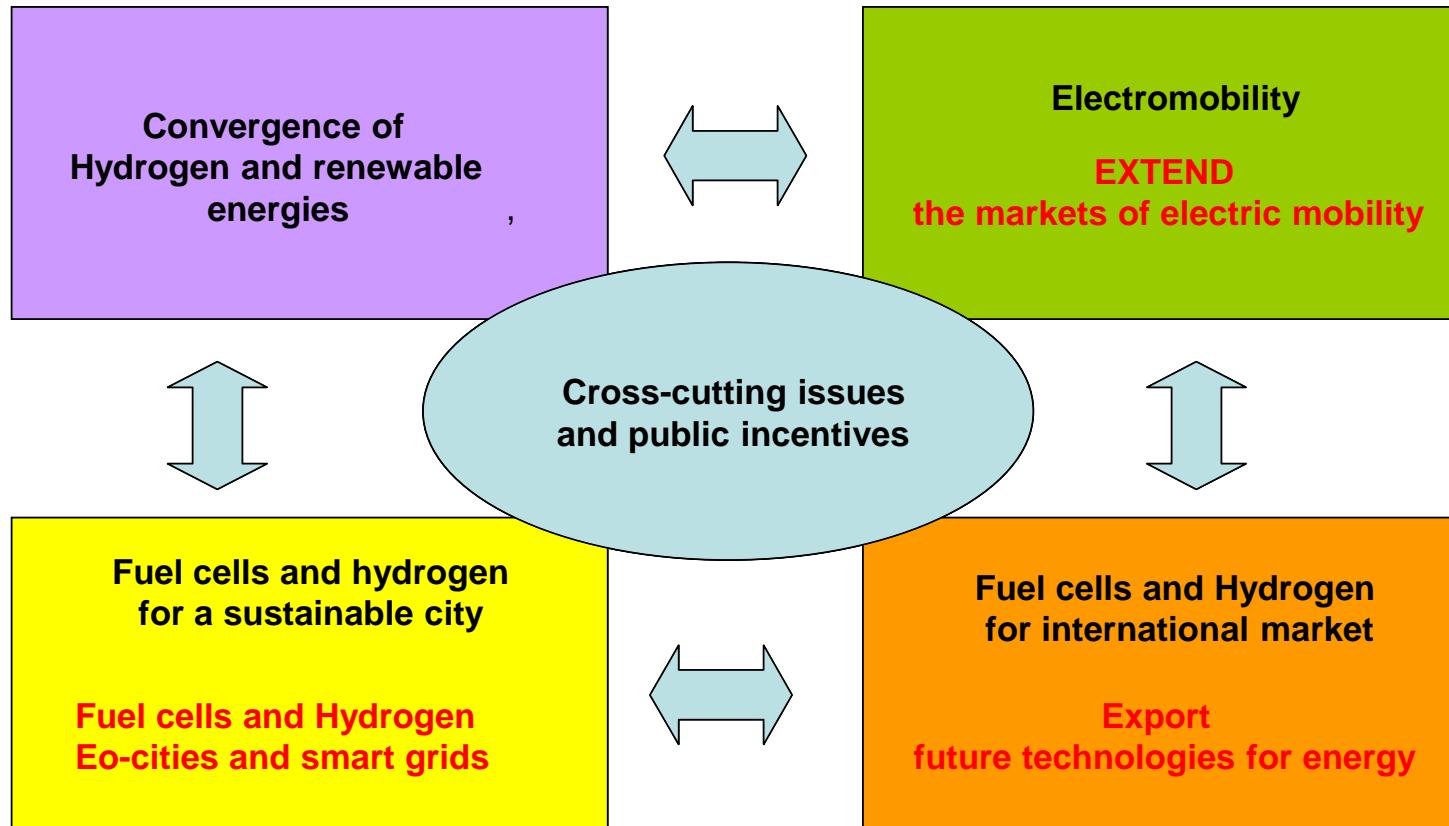
*Renewable Hydrogen  
for a local economy  
Interconnected local network*

**Diffuse and decentralized  
use for Hydrogen**

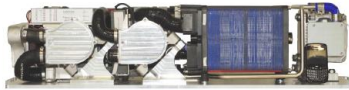




## 2020 vision

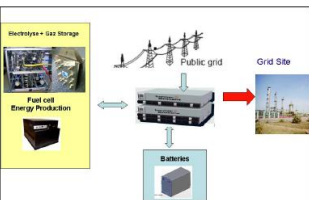


## New companies are emerging



### Mainly Focussed on

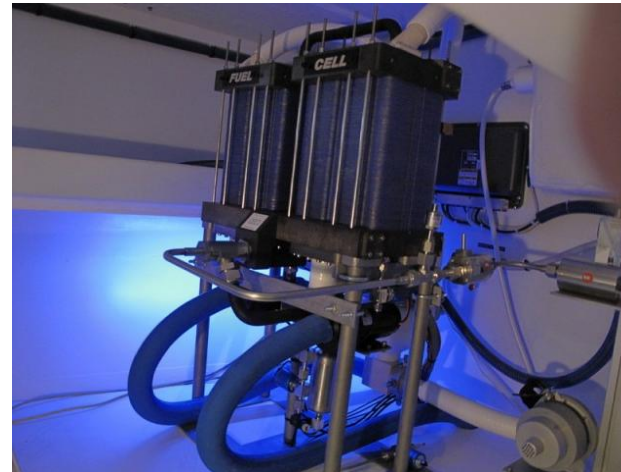
- Back up system
- Renewables storage
- Autonomous systems
- Stationary for remote area
- High power system
- for heavy transportation or fleets, ship trains...



## ZERO CO2 sail



The project's objective is to sail around the Mediterranean using a yacht powered by a clean carbon-free auxiliary motor (petrol motors are commonly used in yachts for all manoeuvres in port). The yacht will sail this Year around Mediterranean sea. A 12m craft built by the RM shipyard of La Rochelle, the "Zero CO2" is equipped with an electric motor driven by a hydrogen fuel cell, developed by CEA.



35 kW PEMFC  
10.5 kg H<sub>2</sub> (350 bar)

# **JTI / European Member States Representative Group**

- **Hydrogen and Fuel Cells will have a significant impact in the domain of new energy technologies**
- **Strong policy support is necessary. Regulations are a priority**
- **De-risking is essential**
- **Member states and Regions need to increase their collaborative efforts with EU and other countries**
- **Hydrogen has a full part in the EU Set-Plan**
- **Joint Calls??????**



France thanks Canada, Germany  
and the IPHE Secretariat for their  
excellent preparation of this meeting