CONSORTIUM GATHERING MANY PLAYERS OF THE VALUE CHAIN: FROM ENERGY TO END USERS

Many players of the value chain, from production to distribution...

... and specific actors / involved by sector

Laboratories, Consultants & Associations

Hydrogen

Production  Distribution  Operator

Hydrogen Mobility

Vehicle construction  Users

Vehicle fleets
(Operation and/or maintenance)

Manufacturers and/or integrators

automotive supplier

Laboratories, Consultants & Associations

AREVA H2Gen  Air Liquide  Engie

McPhy  Nel  Itm Power

atawey  akuoenergy  Engie

EDF  SerfinGroupe  Cnr

Toyota  Symbio  Safran

Greenerity  Faurecia  Mobivia Groupe

Hype  Ratp  Cea  Ifp Energies Nouvelles  Natureo

Justy  Tenerrdu Energy Cluster  Cara  Evere Pôle

Pôle Véhicule du Futur  PEA  Elementenergy
WHAT WE ACHIEVED

• A strategy based on captive fleets with a business model allowing to launch the market and solve at the same time the chicken and egg dilemma

• A deployment plan which is being duplicated by other European countries

• A strong involvement in large scale demo projects, with the support of European Commission (Fuel Cell Hydrogen Joint Undertaking): Zero Emission Valley, Hyport, Hyway, EasHyMob, Plan NFI, etc.

• Support from French government and official bodies: National Plan (June 2019), Strategic French automotive roadmap 2018-2022
A NATIONAL PLAN FOR HYDROGEN WAS LAUNCHED IN FRANCE IN JUNE 2018

Development of regional ecosystems of hydrogen mobility for zero emission solutions for road, rail, river, etc. transport with the deployment of:

- **By 2023**:
  - 5,000 light commercial vehicles and 200 heavy vehicles (buses, trucks, trains (TER), boats)
  - 100 hydrogen stations to refuel vehicles with locally produced hydrogen.

- **By 2028**:
  - 20,000 to 50,000 light commercial vehicles and 800 to 2,000 heavy vehicles
  - 400 to 1,000 hydrogen stations.

In 2019, 100 million euros will be earmarked for the deployment of clean hydrogen.

ADEME (French environmental and energy management agency) will support this deployment.
FOUR GREAT CONVICTIONS.

1. Electromobility must develop massively – in line with “Europe on the move” objectives moving towards « Zero emissions »
   - Electric vehicles with batteries: **less than 2% of the current fleet**
   - 2 major obstacles: **the range** (less than 300 km) and the **filling time** (8 h for a standard filling).

2. Electric vehicles with battery and hydrogen are **complementary**
   - Electric hybrid batteries / hydrogen vehicles and hydrogen vehicles: a **filling time less than 5 Mn** and a **range between 370 and 600 km**.
   - For the driver: **same use than diesel vehicle but with Zero emissions**.

3. Hydrogen mobility improves the use of renewable energies and contributes to the dynamism of the regions.

4. **Investing in mixed battery / hydrogen electric mobility will reduce the necessary investments in the network**
   - cf. document « Hydrogène : Agissons aujourd’hui pour la mobilité de demain »
... Hydrogen mobility is not the only solution available but is the only one able to address 3 challenges at the same time:

- Reduction of CO2 emissions
- Air quality
- Accelerate development of renewable energies

Source: [Mobilé Hydrogène France]
ADEME Call for Projects
« Ecosystèmes de mobilité hydrogène »

- 24 projects were submitted for this call for projects, representing a potential investment of 475 million euros.

- ADEME selected 11 projects based on 3 assessment criteria:
  - Environmental performances
  - Motivation
  - Maturity of the projects.
**Current Vehicle Deployment: Cars & Buses**

**More than 300 Hydrogen Light Vehicles Have Been Deployed in France**

More than 80 Fuel Cell buses are in the process of being deployed

- **2015**
- **2016**
- **2017**
- **2018**
- **2019**

![Map of France with deployment locations](image)

- Paris (1)
- Versailles (1)
- Le Mans (1)
- Rouen (1)
- Chaumont (1)
- Belfort (1)
- Lyon (1)
- Toulouse (1)
- Pau (1)
- Artois-Gohelle (1)

More projects in the process of being defined:

- September 2019:
  - Test of a bus H2 for 10 weeks

- September 2020:
  - Deployment supplementary envisaged

- 2022:
  - Deployment

Source: Mobilité Hydrogène France
Today: +350 hydrogen vehicles are on the road in France

- 30 stations and 50 more to come by the end of 2020
- A fleet of 100 H2 taxis in Paris

.....With regions steering the momentum

Source: Mobilité Hydrogène France
A fleet of hydrogen taxis combines several advantages:

- « Zero emission » taxis fleet
- Implementation of the captive fleet strategy for hydrogen mobility
- Vehicles with high utilization rates to optimize the business model

Hype is the world’s first fleet of hydrogen taxis.

Launched on 7 December, 2015 during COP 21, by STEP ("Société du Taxi Electrique Parisien"), with 5 first vehicles.

Today, the fleet has 100 vehicles, with targets of 200 vehicles at the end 2018 and 600 before the end of 2020.

Hydrogen taxis:
- Range up to 500 km
- Filling in 3 to 5 minutes
- « zero emission »
Focus: Zero Emission Valley:
20 stations, 15 electrolyzers, 1000 vehicles

Zero Emission Valley supported by EU founds

Avec ce projet d’ampleur inédite, La Région Auvergne Rhône Alpes ambitionne de devenir le 1er territoire hydrogène de France & en Europe.

Le programme « Zero emission valley » (voir notre article) vient de remporter le soutien financier de l’Union européenne. À la clé, 70 millions d’euros pour développer la filière, faire évoluer l’usage de la voiture à hydrogène et lutter contre les pollutions.

Source: Mobilité Hydrogène France
THANK YOU FOR YOUR ATTENTION