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# MobyPost

## GA n°256834



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# Project description

Carbon neutral vehicle for postal delivery, based on a solar hydrogen and fuel cell system:

- Hydrogen production, storage and refueling infrastructures built on two existing postal centers in Franche-Comté (France)
- A fleet of 5 fuel cell powered vehicles per center, used everyday for postal services

## SMEs:



## Research centers:



## Large companies:



LA POSTE

# Project milestones

02-2011



- Vehicle
  - Power train*
  - Mechanical structure*
  - Ergonomics and style*
- Infrastructure
  - Dimensioning of equipment & monitoring system*
  - Safety and regulation analysis*

02-2013: start running both infrastructure and vehicles.



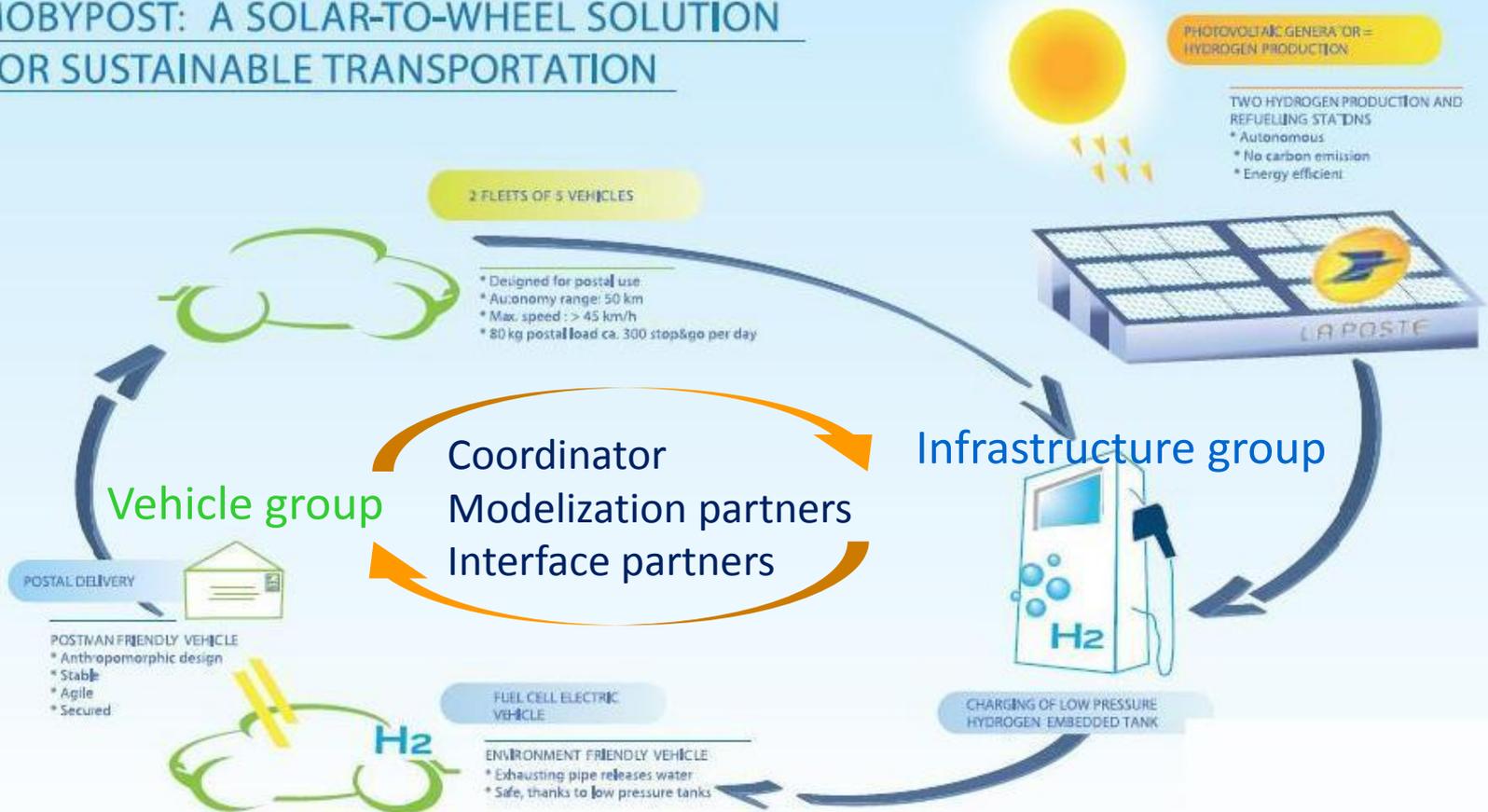
- Vehicle
  - Power train final test*
  - Manufacturing of 10 FCEV*
  - Homologation*
- Infrastructure
  - PV generator*
  - Electrolyser*
  - On-site storage*
  - Refueling station*
  - Certification*



- Vehicle
  - Postmen training*
  - Deployment of the FCEV*
  - Performance monitoring*
- Infrastructure
  - Performance monitoring*
- Dissemination and knowledge transfer*

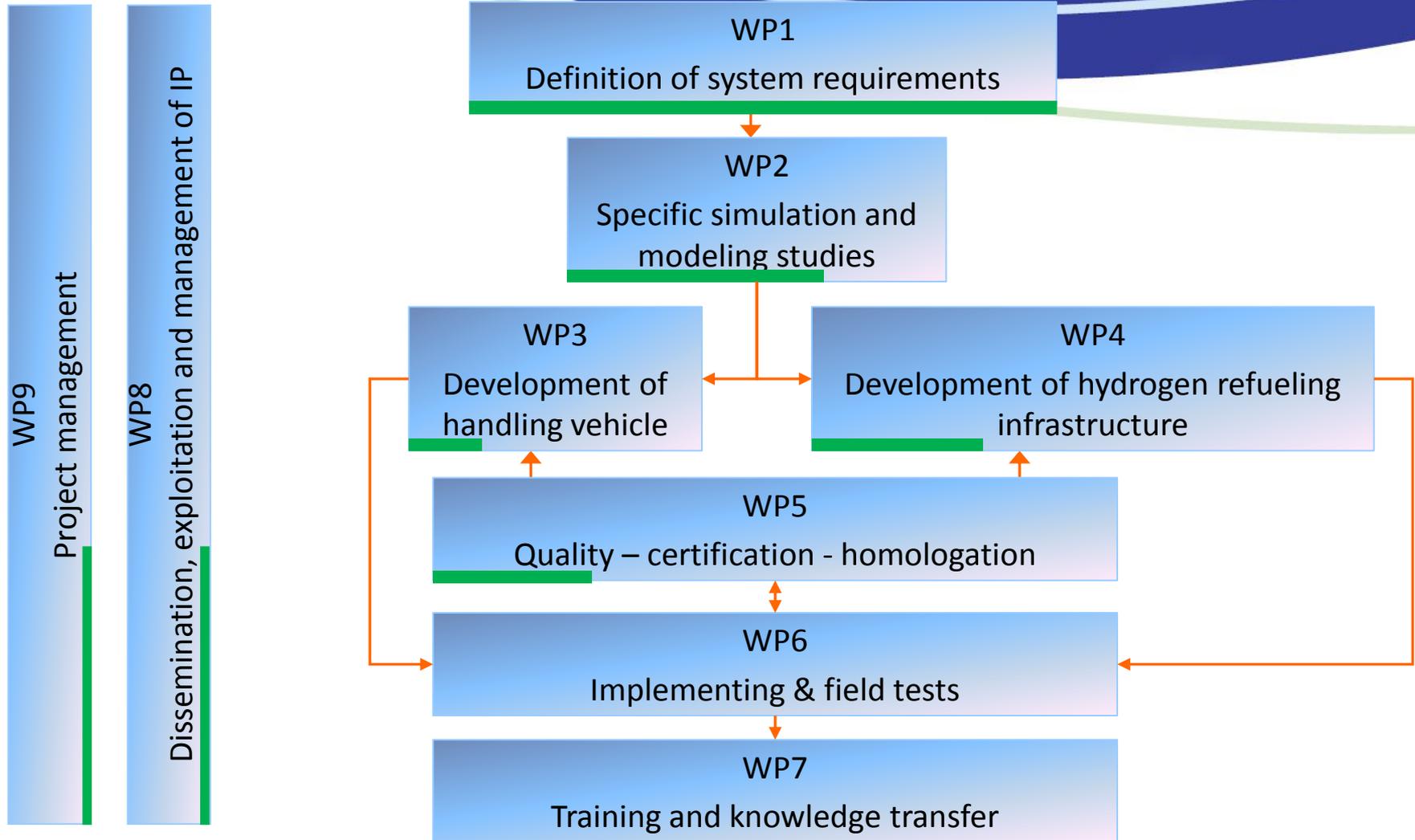
## Project

### MOBYPOST: A SOLAR-TO-WHEEL SOLUTION FOR SUSTAINABLE TRANSPORTATION



# Approach

## Work packages



# Technological breakthroughs

## Demonstration

- Complete solar to wheel solution implemented on existing industrial sites
- FCEV used every day on heavy duty cycle and under demanding climatic conditions
- Autonomous energy production by coupling an electrolyser to solar energy
- Guaranteed safety with low pressure storage on board of the vehicle

## Performance indicators

- Fuel cell cost and lifetime
- Cost of renewable hydrogen
- Acceptance of an innovative transportation mode meeting the requirements for the future

# Alignment to MAIP/AIP

## Application area

- MobyPost belongs to the « early markets » category of the 2009 call
- It is a demonstration project (includes RTD activities)
- Show the technology readiness of specialty vehicle including the related hydrogen refueling infrastructure
- Demonstrate the components and systems lifetime, cost competitiveness, reliability and sustainability

## Technology

- PEM Fuel cell on mobile application
- Decentralized H<sub>2</sub> production thanks to alkaline electrolyze fed by solar energy
- Low pressure H<sub>2</sub> storage (metal hydrides)

# Alignment to MAIP/AIP

## Key figures

	Call 2009	MobyPost
Total cost of FC system	< 4000 € / kW	~ 5000 € / kW
Hydrogen price at pump	< 13 € / Kg	~ 10€ / Kg
System efficiency (tank to wheel)	> 40%	0.45
Refueling time	< 5 min	3-4 hours

# Alignment to MAIP/AIP

## Activities

- Cooperation in RTD activities of SMEs, large companies, Research centers
- Design of the solution strongly linked to real use (final user La Poste)

## Results

- Run 10 vehicles and 2 hydrogen plants for a one year monitored experimentation
- Allow the technology to progress and the companies to increase their competitiveness
- Reduce the greenhouse gases emissions of postal activities

## Safety, regulation, codes and standards

- French regulation on hydrogen production (Low quantities, no commercial use)
- FCEV homologated according to European regulation
- Action of fuel cell and electrolyzer manufacturers on standards

## Dissemination & public awareness

- Direct and large diffusion thanks to the postmen and the distribution centers of La Poste
- Impact on societal acceptance by showing a safe, friendly and clean vehicle
- Other means:
  - Expositions, events, forums, scientific meetings
  - Scientific publications, press releases
  - Indirect diffusion – professional and private network

# Enhancing cooperation and future perspectives

## Technology Transfer / Collaborations

- MobyPost beneficiates from similar successful experiences (F-City H2)
- MobyPost beneficiates and feeds associations / projects covering the same activities (H2, FC)
- French national call for H2 and Fuel cells (ADEME) – Mobilihytest – includes certification center for H2 storage solutions in the same region as MobyPost experimentation
- “East of France” : development of hydrogen field of activity :FC LAB2 testing facilities for FC, PVF-ITS platform for vehicle testing.

## Project Future Perspectives

- Data collected during the experimentation year will be used for future projects
- Partners cooperation will lead to new projects
- Successful demonstration will accelerate the market growth

Any questions ?



Thank you for your attention !