

POLIS conference – Île-de-France Mobilités hydrogen strategy

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1. Île-de-France Mobilités

Île-de-France Mobilités is:

- the Île-de-France region mobility authority
- 10,000 buses and coaches for 5 millions trips/day on 1,500 lines
- ~140 operational bus centers
- 75 transport operators: KEOLIS, RATP, TRANSDEV...



An energy transition:

- begun on the 24th of April 2018 by Île-de-France Mobilités Council's deliberation
- in two steps:
 - 100% clean buses by 2025 in dense areas
 - 100% clean buses by 2030 throughout the entire region
- with a final mix of 75% biomethane and 25% electric (overnight charging)

2. France ambitions

Hydrogen in France:

- consumption of 900 000 tonsH₂/year
- for refining, fertilizers and cement industries
- 95% made by steam reforming – with CO₂ emissions

Announcements in 2021:

- 7.2 billions on 10 years
- in priority for the decarbonization of the industrial uses of hydrogen
- secondly for the transport (trains, lorries, planes, coaches and buses)
- with expectation on the development of a French electrolysis industry involving the creation of value and local jobs



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2. France ambitions

Why public transport:

- as a volume contributor in a captive fleet logic, it creates a ripple effect and limits the risks for project leaders
- as a strategic lever for economic actors in order to raise awareness among elected officials in favor of broad public support for the French hydrogen sector
- as an opportunity for innovation



3. Hydrogen for buses and coaches – pros and cons

Environmental:

- Green hydrogen
- Energy efficiency and water consumption

Financial:

- Subsidies and low taxes
- Cost

Technical:

- Noiseless and zero local emissions
- Sector maturity, lack of legislation
- No hydrogen network and exploitation constraints



3. Hydrogen for buses and coaches – strategy

Île-de-France Mobilités is highly solicited for experiments.

We have to select and we choose projects only if there is:

- an existing territorial dynamic around hydrogen
- an accordance with the already given support by the Region
- a leverage effect made possible by the experiment
- a possibility to increase the storage capacity for the buses and coaches
- subsidies for the vehicles

4. Ongoing experiments

Manufacturer	VAN HOOL (Belgium)	SAFRA (French)
Numbers of bus	2	5
Duration	7 years from the end of 2019	3 years from the end of 2020
Hydrogen type	Grey	
Bus Type	13m	12m
Fuell cell	BALLARD – 83 kW	SYMBIO – 34 kW
Batterie	SIEMENS – 24 kWh	SAFRA – 132 kWh
Budget	2 789 000 €	3 320 000 €
EU participation	32%	30%
Île-de-France Mobilités participation	59%	55%
Versailles collectivity participation	9%	11%
Transport operator participation	0%	4%

4. Ongoing experiments

Numerous problems.

Availability:

- global average: <85%
- uneven on time and between buses

Consumption:

- average: between 8 and 9 kgH₂/100km
- Uneven on time and between buses



Conclusion