

ADEME-NEDO

Toyota H2 mobility projects in Europe Focus on French projects

Sophie Glémet
Toyota Motor Europe, Paris office
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Agenda

1. France H2 plan: a positive environment
2. Car: H2 taxi fleet in Paris
3. Marine: Partnership with Energy Observer vessel
4. Bus: 3 month-experiment with Caetano H2 bus and RATP

Toyota Group: Toyota/Lexus/Kinto, Daihatsu and Hino



AA (1936)



Corolla



RAV 4



1st Prius



Mirai

1937

1966

1994

1997

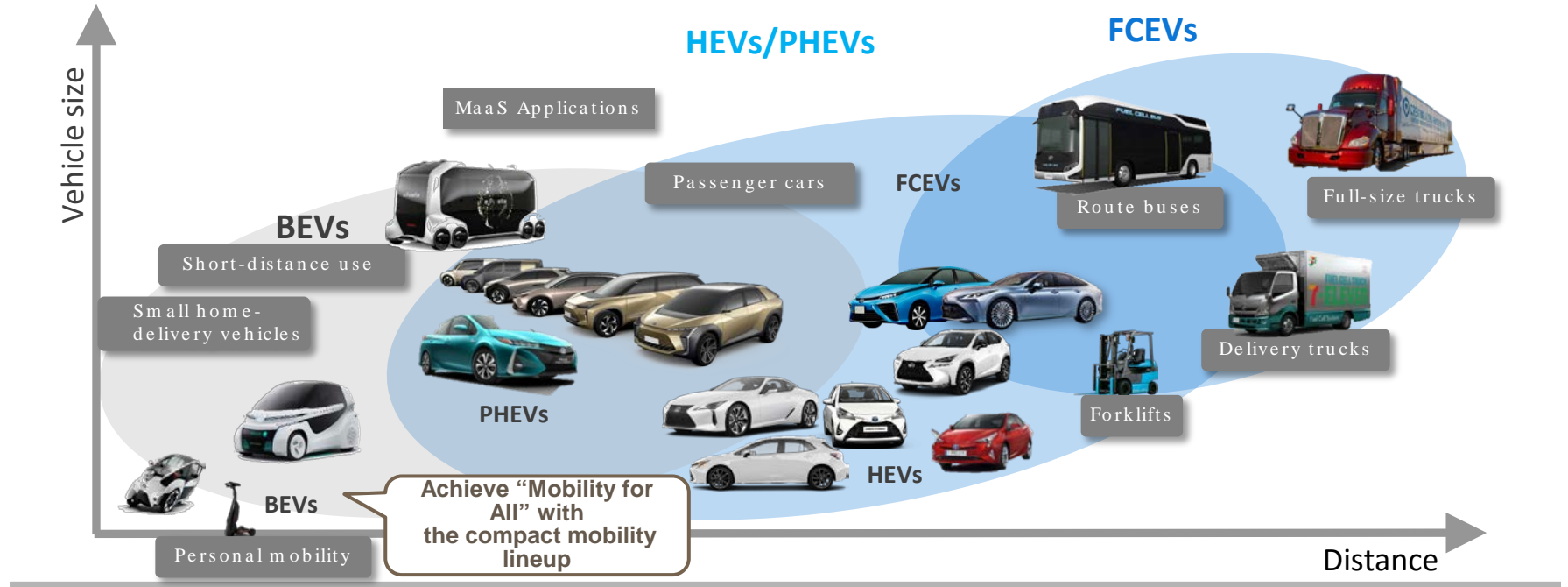
2017

- Employment: 360,000 people
- Worldwide production/sales CY2019: 10.5 million vehicles
- **Worldwide hybrid sales: 16 million units since 1997**
- Sales, number of countries: 170 countries
- Production sites: 62 sites, including 12 sites in Japan
- **R&D budget: 9 billion euros**
- **Environmental challenge 2050**

Sources : Fiscal exercise, ending on March 31st, 2020 (1 Euro = 121 yens)



Diversification of technologies: Battery electric, hybrid, plug-in and hydrogen



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A massive investment plan to make France a leading player in Green H2

France hydrogen plan, August 2018

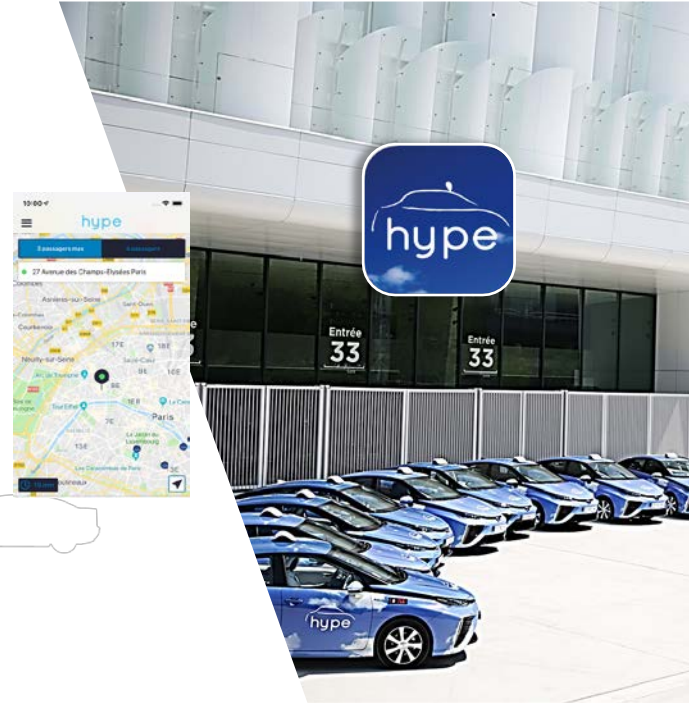
	2023	2028
Vehicles & HRS	5,000 Light vehicles (incl. Hype taxi fleet)	20,000 to 50,000 units
	200 Heavy vehicles (Buses, Trucks, trains, boats etc)	800 to 2,000 units
	100 HRS (local production of H2)	400 to 1,000 stations
	10% of "green" H2 production	20% to 40% by 2028

France hydrogen incentives, September 2020

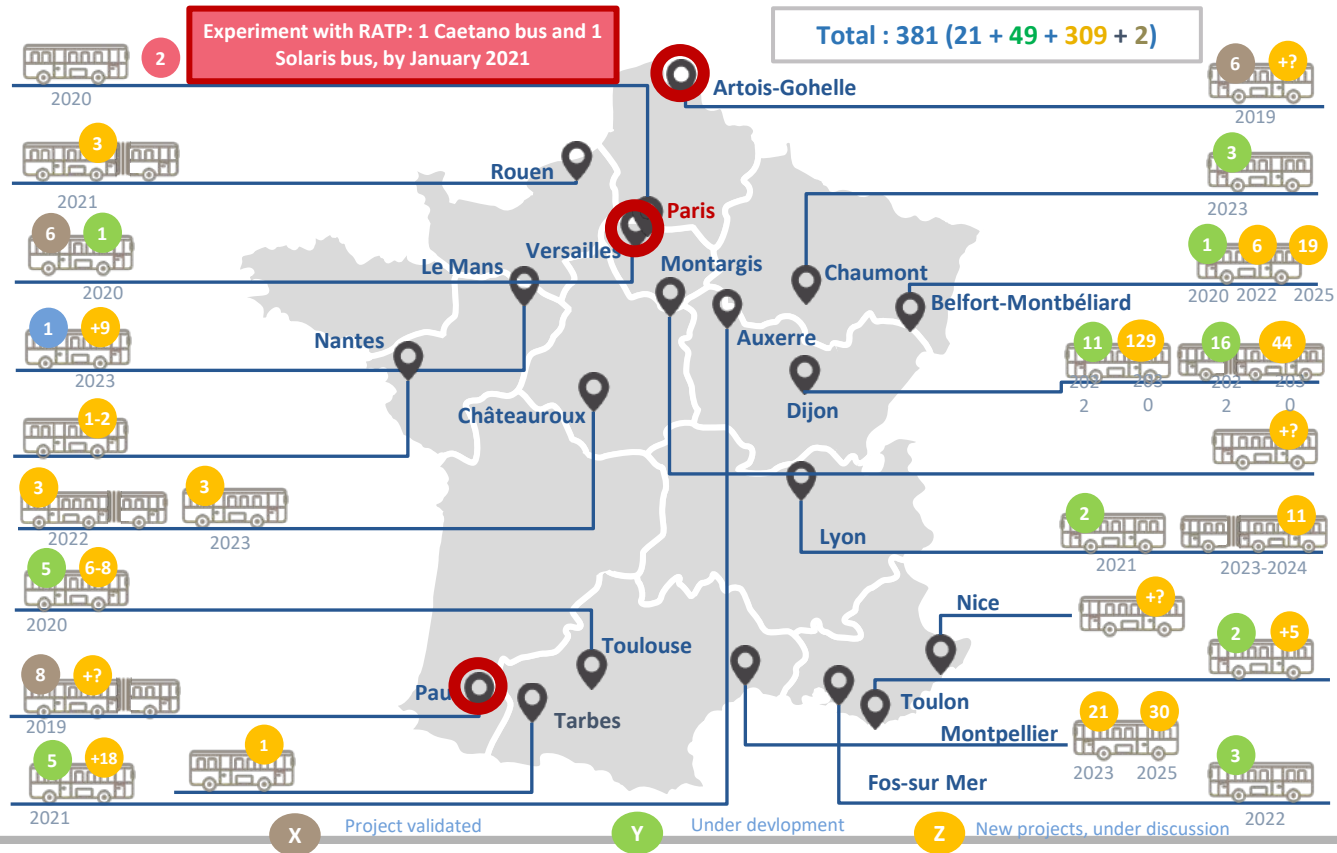
	Investment & incentives	Purpose
1. Build a French decarbonated hydrogen industry of international scope	€7.2 bn by 2030, with €2 bn by 2022	<ul style="list-style-type: none"> a hydrogen industry in France 6.5 GW capacity of decarbonated hydrogen by 2030 50,000 to 150,000 jobs in France (direct and indirect)
	▶ €1.5 bn for a transformation of the French industry	<ul style="list-style-type: none"> (1) industry and (2) Electrolyzer Gigafactory projects in France
	2020	
	▶ Support from ADEME (1) €350 mio by 2023 (2) €275 mio by 2023	(1) Call for projects for demonstrator & building blocks ▶ support to Hype H2 taxi fleet ecosystem (2) Call for project for industrial development to build "territorial hubs of hydrogen" ▶ support to H2 buses and bus depot
1. Specific focus on heavy mobilities and R&D	▶ €1.6 bn "Investments for the Future" platform	<ul style="list-style-type: none"> Innovation
	2021	
	▶ €1.5 bn	IPCEI on H2: e.g. Create an Airbus of H2 electrolyzers, fuel cells ...
▶ €65 mio	Call of Expressions of interest for research in next generation H2 technologies dealt by ANR (National Agency for Research)	

A H2 taxi fleet in Paris

- Creation of “Hysetco” in Feb 2019 with Hype Paris taxi, Air Liquide & Idex
- 100 H2 taxi today, mainly Mirai
- 600 units by 2021
- More than 72,000 rides
- Over 2.1 million km driven so far



H2 bus achievement & plans



RATP, a key player of urban mobility today in France and abroad

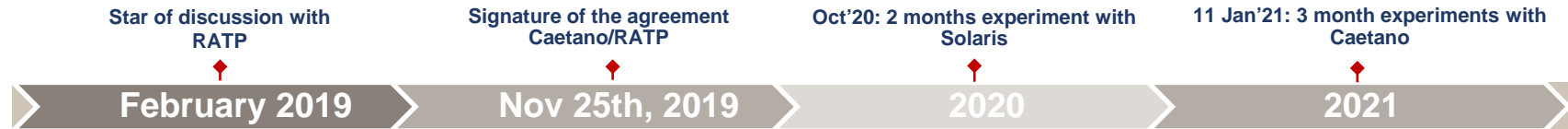
- The RATP Group is a state-owned public transport operator and a global leader in urban mobility;
- Responsible for most of the public transport in the Greater Paris area and abroad, including the Paris Métro, Île-de-France tram and RATP Bus Network with 351 lines;
- RATP will operate a **100% “clean buses”** fleet, after Paris decided **“only zero emission buses by 2025”**;
- With 4.700 buses and 25 depots:
 - from diesel to BEV (70%) and biogas (30%) at the beginning
 - and Hydrogen today as a potential solution for electric buses



Caetano H2 City.Gold experiment with RATP



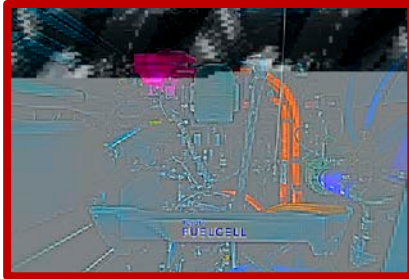
- February 2019: start of discussion with RATP, Toyota and Caetano, a long standing partner of Toyota in Portugal, on an experiment with H2 bus; RATP started discussion also with Solaris (Urbino 12 model);
- July 2019: meeting on H2 between the Japanese and French Government, followed by a meeting between Paris region, CEOs of French mobility operators (SNCF, RATP, Keolis, Transdev) and Toyota;
- November 2019: Signature of the agreement between Caetano and RATP;
- January 2021: 3 month experiments on a dedicated line (189) in South-western Paris, 15 km from the Air Liquid R&D technical center and HRS



Marine mobility: Toyota partner of Energy Observer vessel



“Energy Observer Developments” creation
Subsidiary dedicated to bring to market innovative
renewable & clean energy solutions



EO Boat in Tokyo during Tokyo Games

2013

“Energy Observer”
Renewable Energy Boat project



2017

Energy Observer boat
Boat launch, Partnership with TOYOTA

2019

Toyota Fuel Cell System Implemented in EO
Boat

2020

EO Boat Partnership extended for 3 years with Toyota
First deliverables developed with TOYOTA FC
FC range extender for Boats + FC generator

2021

H2 Power Generators
for land use



Toyota is a Premier Partner of the Olympic and Paralympic Games

2020

2022

2024



SHOWCASE OF HYDROGEN SOCIETY AND REDUCED EMISSIONS!



Mirai 2nd generation

And soon, the worldwide launch of the Mirai 2nd generation



Thank you for your attention.

