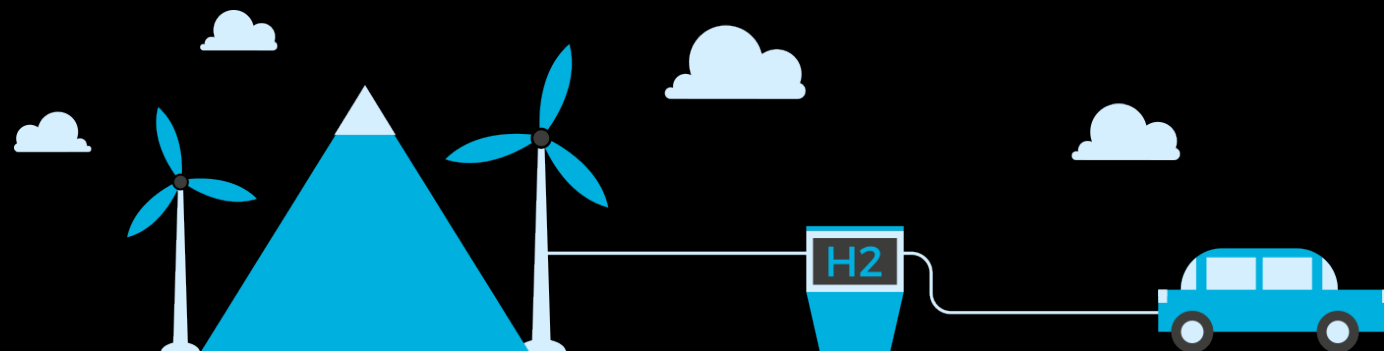




Producing and storing renewable hydrogen

Fourmies 03/09/2021



Green hydrogen - what complementarity with RE?



VDN in 2021

- ✓ 8 years in the business
- ✓ 3 agences, 14 employees
- ✓ Wind turbines : 69MW operated / 121MW in construction / 600MW in development
- ✓ Solar : 145 MWc in development
- ✓ Hydrogen : 5 projects in development

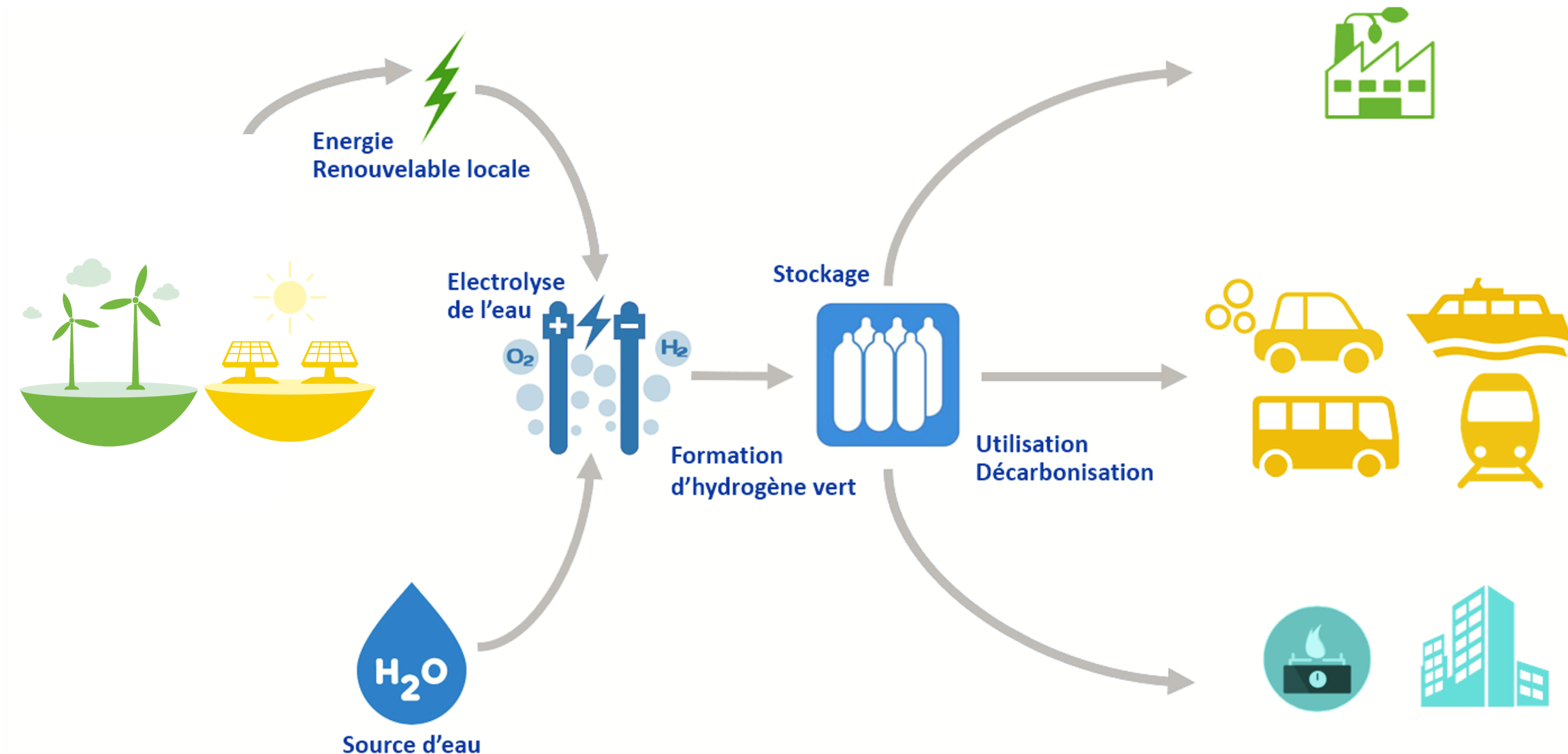
VDN, a producer of renewable electricity, uses its wind & solar farms to produce green hydrogen



Why Hydrogen ?

- **A synergy with RE**
which solves their variability (storage)
- **Local revaluation**
of the energy produced
- **A sustainable approach:**
no emissions during production or use
(production by electrolysis of water).
- **Source of innovation and employment**
- **Varied applications**
Mobility, industry, networks...

Green hydrogen - what complementarity with RE?



Green hydrogen - a solution for mobility a solution for mobility

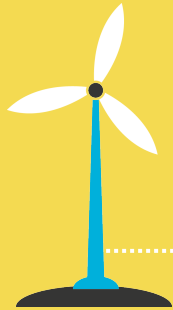


Commune
de TUPIGNY



Project of 6 wind turbines coupled to an H2 recharging station

- Provision of 2 vehicles for people,
- Opening up of the territory,
- **Direct use of the energy produced** on the municipality.



Storage of overproduction of electricity in
hydrogen



- Refuel in a few minutes
- 1kg of H₂ : 100km autonomy
- **Emission-free driving** (only discharge: water)



Trophées Hydrogènes, 2019



Borne H₂ MacPhy & Kangoo ZE-H₂ à Tupigny, Juin 2018



Green hydrogen - a solution for mobility



Bohain-en-Vermandois
Round trip
30 km



Saint - Quentin
Round trip
66 km



Bruxelles
Round trip
300 km

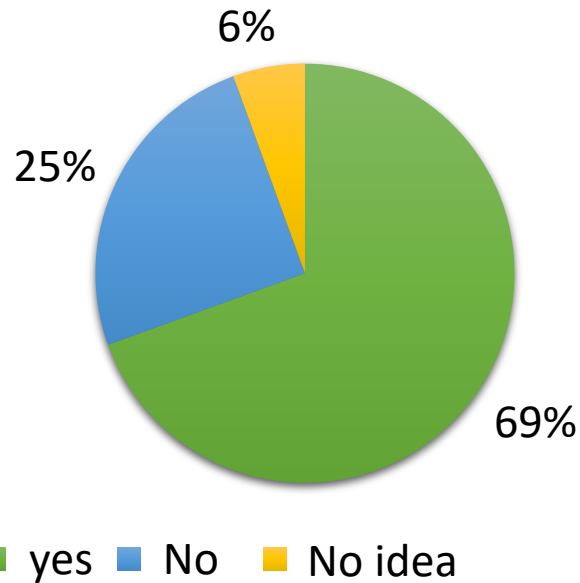
Braderie de Lille
Round trip
210 km



Reims
Round trip
200 km

Green hydrogen - a solution for mobility

Would you use a vehicle made available by the municipality?



** On the basis of 36 responses (10% of the population of Tupigny)*



Expectation of about ten
users / week



Occasional / weekly user Retirement home



Main use

Shopping within a radius of 0 to 60 km



Can be used all day long



Estimated average speed

Round trip of 30 km to the supermarket: 70 km/hr.

Calculation of the H2 requirement depends on the following parameters :

- The type of vehicle: full power H2 or electric hydride/H2
- The driver's speed
- The length of journeys





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