

ANTICIPATION – LEARNING – OPTIMIZATION - CONTROL

POWIDIAN

POWER IN ALL MERIDIANS



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THE BEGINING

- ✓ *Started in December 2014 , 28people , France (Tours and Paris)*
- ✓  *Spin off, after 10 M€ and 4 years R&D for Airbus*

PATENTS

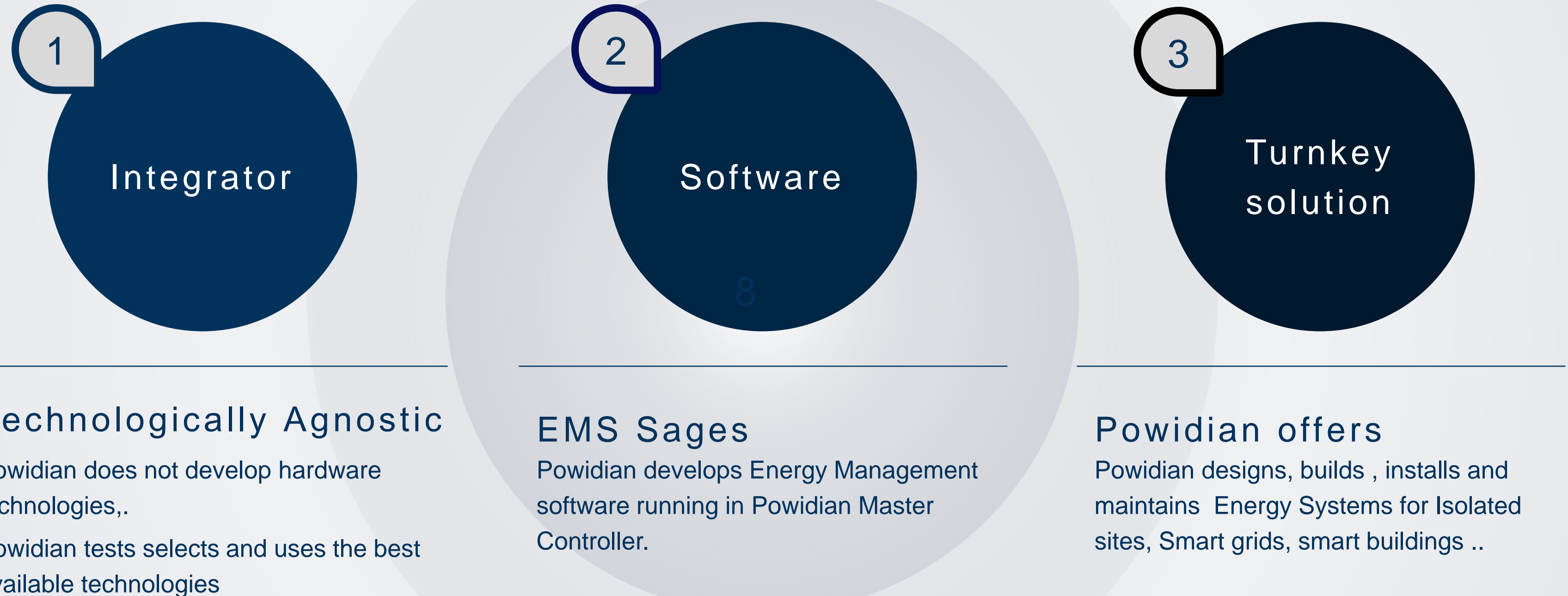
- ✓ *3 International Patents*

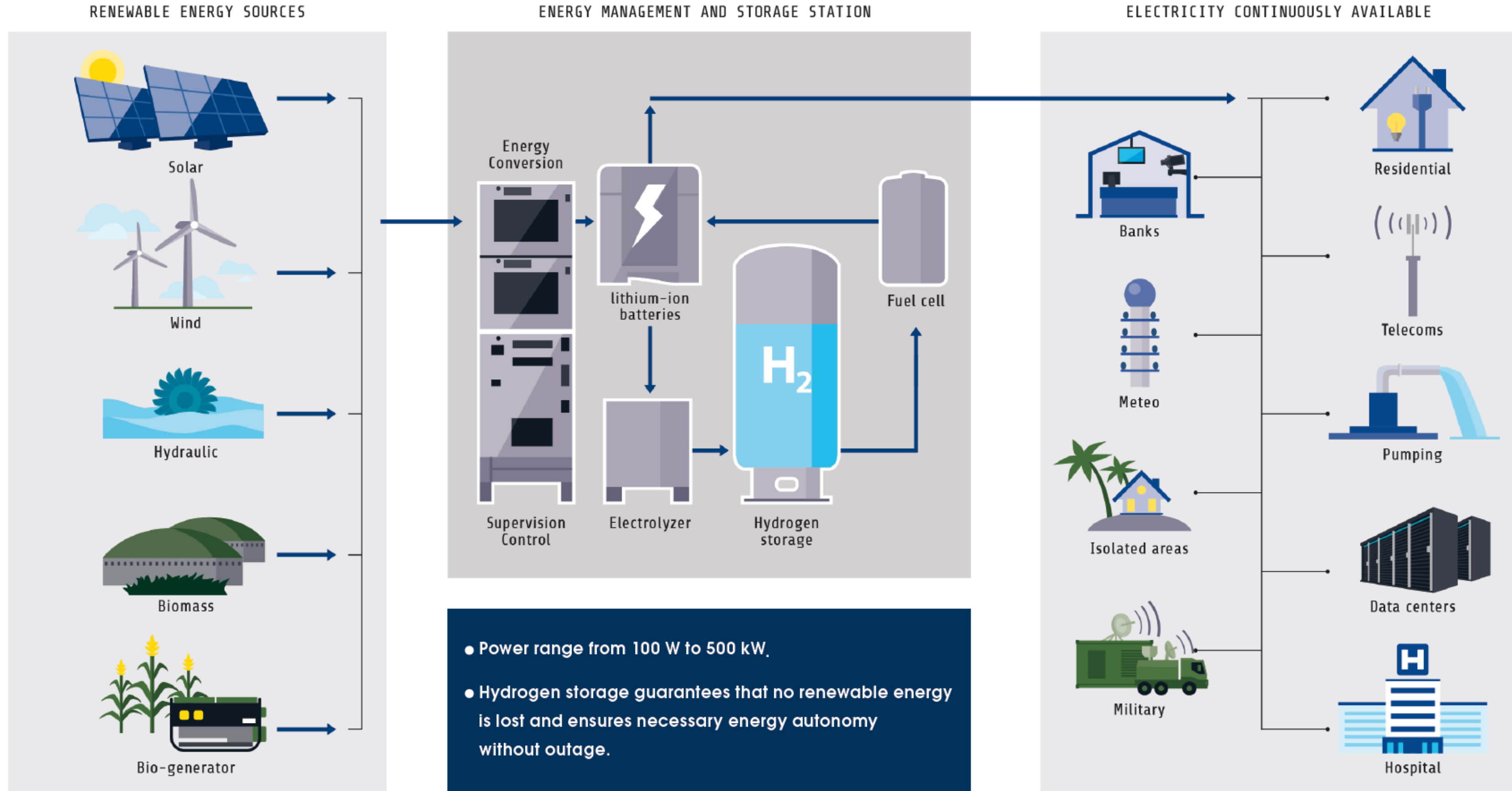
AWARDS

- ✓ *Prestigious awards (COP 21 climate change trophies...)*

History in short

Powidian's ADN





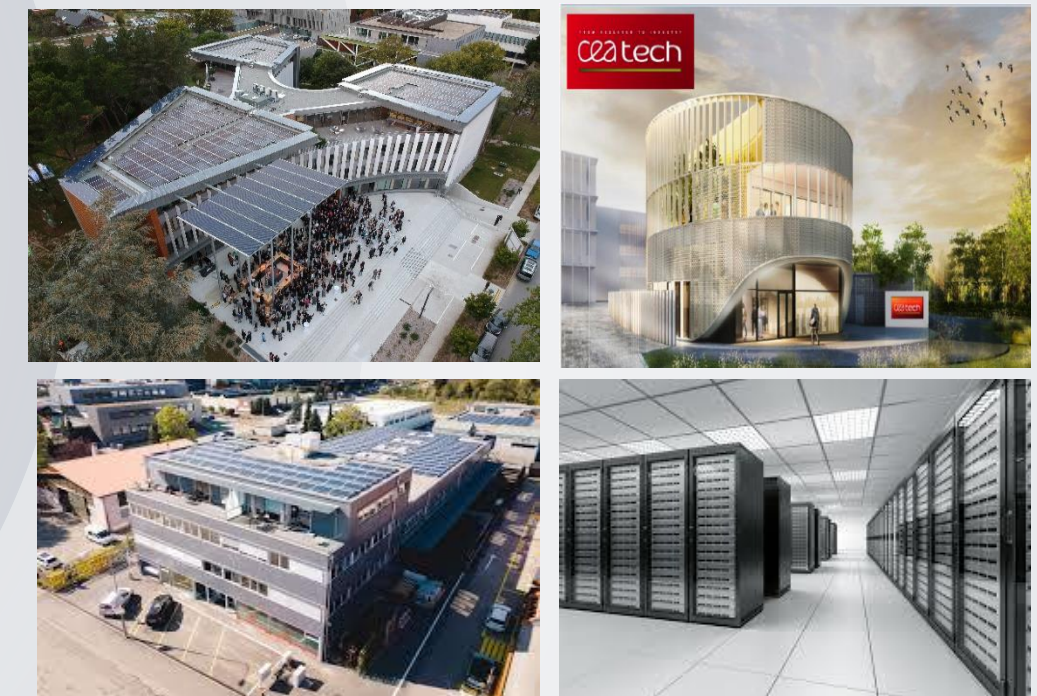
SAGES Applications

Autonomous Tactical Energy

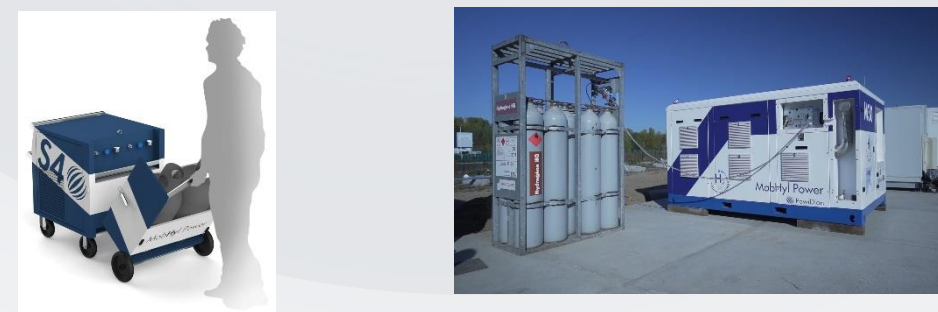
Remote sites / Micro-grids



Buildings / Grid-Connected



Mobile H2 Energy





Typical Realizations



OUR REFERENCES

DELTA GREEN BUILDING



1st Positive Energy building with Hydrogen in Nantes. Thanks to its **SAGES®** Station, this building is able to store part of renewable energies produced :

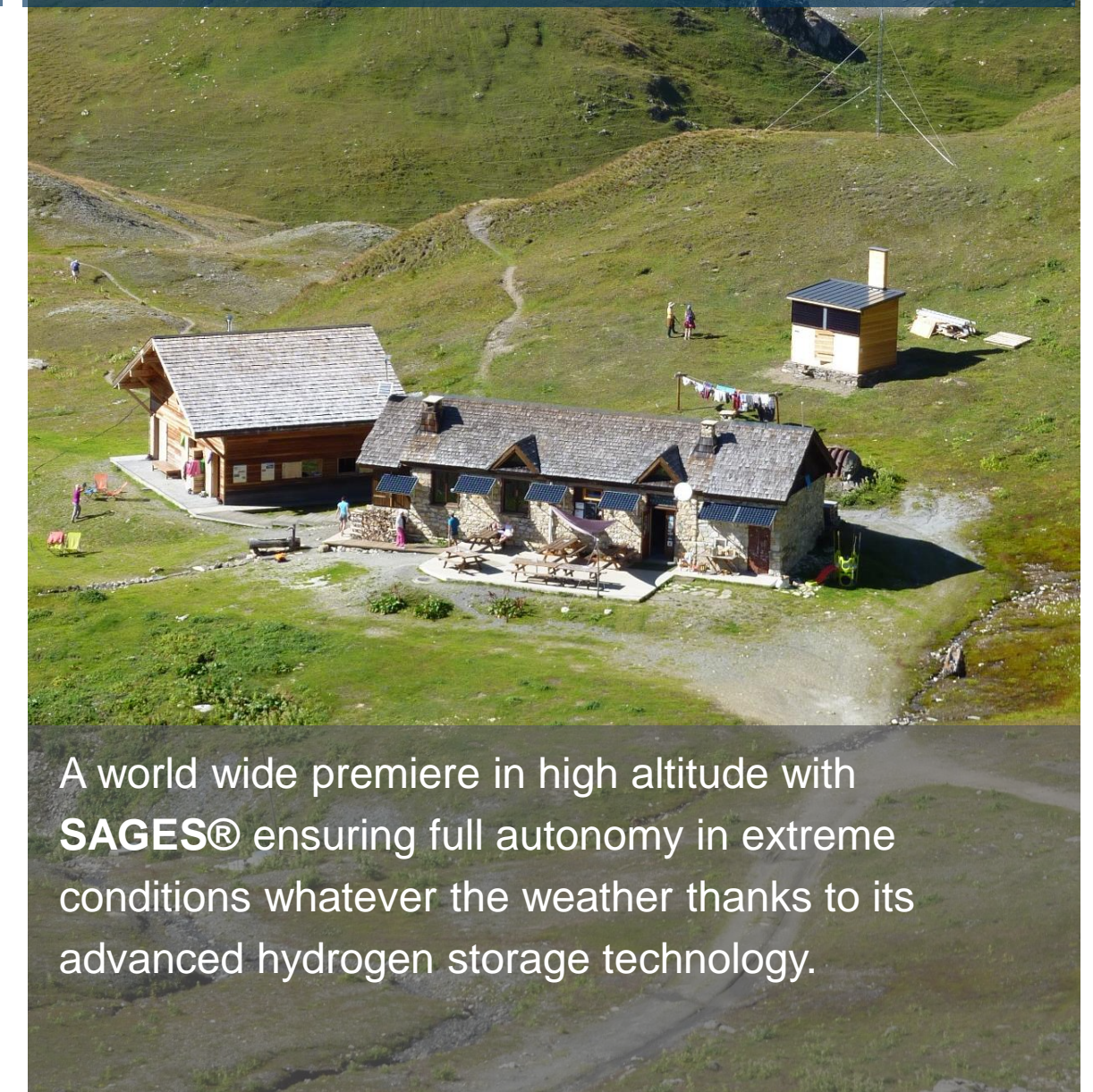
During overproduction periods , **SAGES®** stores energy in the form of hydrogen. In periods of energy peak , it feeds the building via a fuel cell

MICRO-GRID MAFATE



Pilot project commissioned by EDF for the power supply of a remote site in La Réunion island based on **SAGES®** station that combines renewable energy production and storage (**LI-Ion Batteries and Hydrogen**)

REFUGE OF COL DU PALET

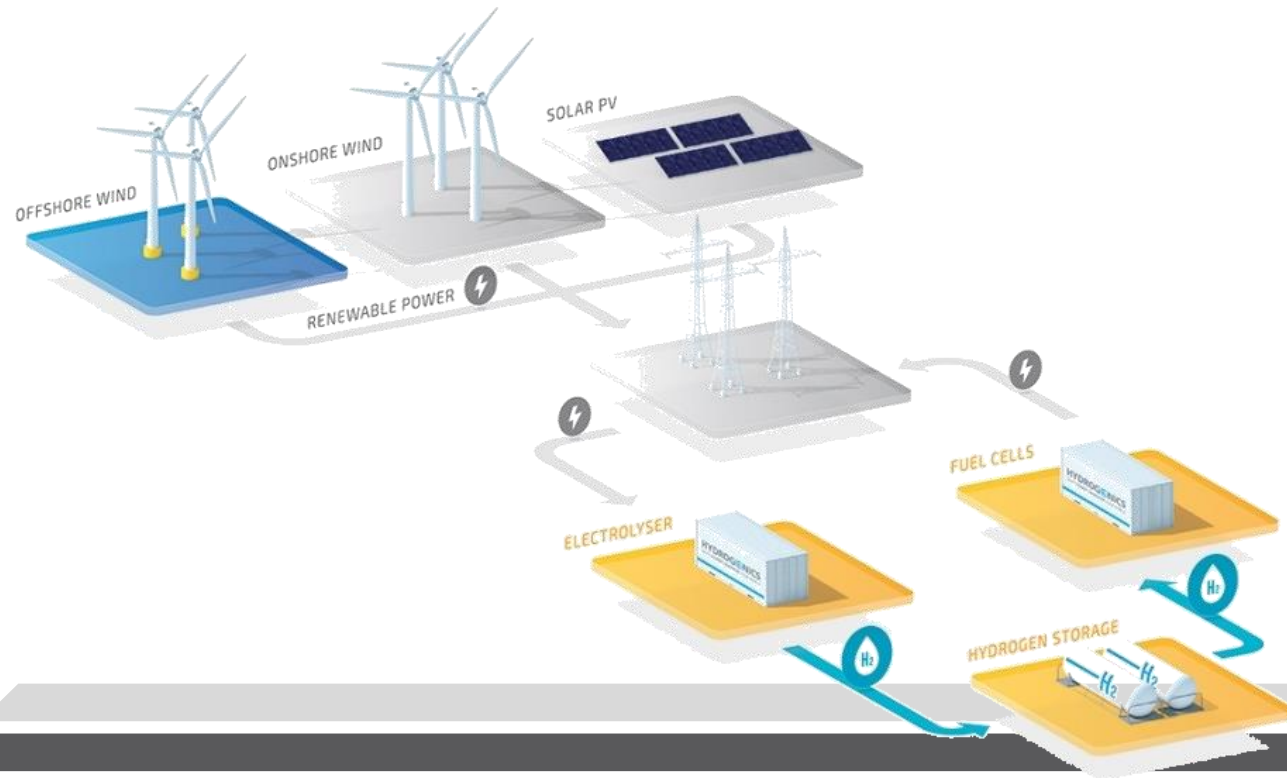


A world wide premiere in high altitude with **SAGES®** ensuring full autonomy in extreme conditions whatever the weather thanks to its advanced hydrogen storage technology.

Installed and Proven Turn key solution

Insular Micro-Grid : Norway - FROAN Islands

2017
Contract
awarded



- 50 kW peak/ 2500 m² solar panels
- 600 kW wind turbine



Hybrid storage : 2 MWh



20 houses, 1 fish farm, 50 week-end cottages



Fuel cell 100 kW
Electrolyser 100 kW 20 Nm³/h

- Annual Green Hydrogen Production and consumption up to **100 kg per year**
- **24/7 => Full autonomy green electricity**

• End of contract : 2021



Ministry of Défense : Glorieuse Island

2018
Contract
awarded



photovoltaic : 60 Kw peak



Storage : 5,6 H2 220KwhWh batteries



Electrolyser : 2 Nm3



Fuel cell : 10 KW

- Powidian delivers an autonomous turn key solution in order to replace the diesel generator.
- **After this field test, the target is to install the other islands of " Terres Australes et Antartiques Françaises"**

• End of contract : December 2019

2019
Contract
awarded



photovoltaic :19 Kw peak



Storage : 21kg H2 24 KwhWh
batteries



Electrolyser : 1,5 Nm3



Fuel cell : 5 KW

- DGAC Target : Autonomy air traffic safety
- Powidian and Bouygues Energy service will deliver an autonomous turn key solution
- There is a potential of 80 sites to follow

• End of contract : March 2020

GENSET “ZERO EMISSION”

MobHyl Power®



ADVANTAGES

- Power 30kw , 4 Kw, 100Kw without pollution emission
- Silent operation
- Reduced maintenance
- Robustness and a life time over 50 000hours (vs 15 000h for diesel)
- Simple operational management thanks to an ergonomic intuitive control, local or remote
- Quick start whatever weather conditions

Use cases :

- Industrial sites, Construction sites, Tunnel construction
- Clean cities, Sport events, Movie sets



Rotterdam Harbor : Field test

2019
PowiDian
selected



- Rotterdam harbor selected PowiDian for a MobHyl Power M30 field test in the second semester 2019, following an European tender.
- The aim is replace all diesel generators (estimated 150 units)

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