



Centro d'iniziativa per i **MO**tori, **VE**icoli e **Tec**nologie

Il ruolo dell'idrogeno nella transizione tecnologica ed ecologica dell'energia

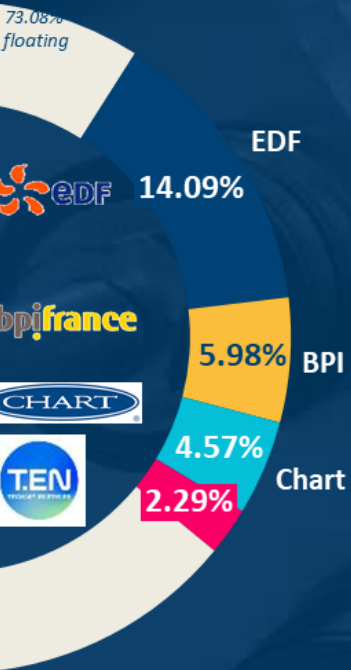
17 dicembre 2021

Generazione, stoccaggio e distribuzione dell'idrogeno: le soluzioni McPhy Energy



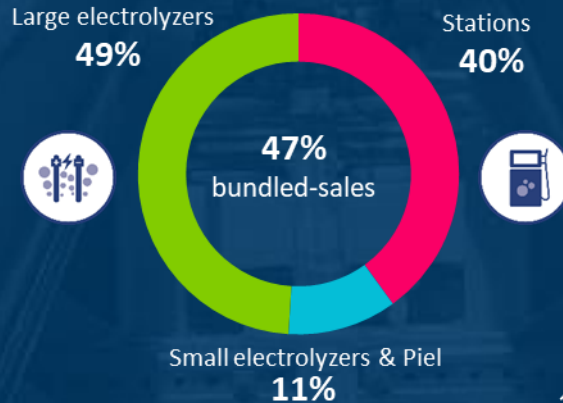
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| 2020 Highlights



13.7 m€

revenue
+20% vs. 2019



23.0 m€

order intake,
+75% vs. 2019

15.2 m€

backlog
+154% vs. 2019

A leading company in zero-carbon H₂ production & distribution equipment



Electrolyzers

- Modular design:
1MW / 4MW / 20MW / 100MW+
- Pressurized Alkaline electrolysis
(30 bar)
- High-current density electrodes
- For Industry, Mobility and Energy
markets
- Supply & Service



Electrolyzers

in reference

60
MW



Stations

- High delivery capacity:
200 / 400 / 800 / 2 000 kg/d
- All dispensing pressures:
350 bar / 700 bar / Dual Pressure
- Easy coupling with electrolyzers
- Main focus on heavy mobility
(buses, trucks, trains, etc.)
- Supply & Service



Stations

in reference

36
stations

Projects delivered [selection]

| Delivering to our Customers



Diax

Piel electrolysis

Sintering diamond tools line
Remotely commissioned
in June 2020
0.1 m€ *contract value*



Le Mans

Station 20 kg/d

1st H₂ station for Total
Opposite to Le Mans race circuit
Commissioned in July 2020
0.3 m€ *contract value*



EasHymob

8 stations 20 kg/d

Network of stations in
Normandie Region (France)
7 already commissioned
2.1 m€ *contract value*



APEX Energy

2 MW

Industrial plant
Commissioned in June 2020
2.4 m€ *contract value*



Hebei

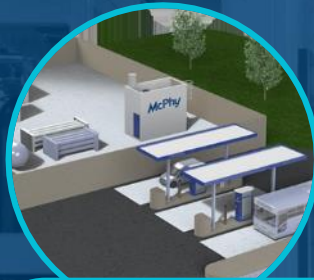
4 MW

8 stacks integrated system
Power to gas solution in
China (wind farm)
Commissioned
in January 2021
6.4 m€ *contract value*



Projects booked [selection]

| Transition to industrial scale



Djewels

20 MW

Industrial use (chemicals)
Booked: 1 m€
Scope McPhy: 15 m€
Timeline: 2022



Zero Emission Valley

4 MW + 5 large stations

High-capacity stations
400 to 800 kg/d (each)
Dual Pressure (350/700b)
Light and heavy mobility
Booked: 7.8 m€
Scope McPhy: >11 m€
Timeline: 2020 to 2022



Hyport

1 MW + 2 stations

High-capacity station
400 kg/d Dual Pressure
+ 20 kg/d at 350 bar
Light and heavy mobility,
and nearby industrial uses
Booked: 4.0 m€
Timeline: 2021



DMSE

1 MW + 2 large stations

High-capacity stations
400 kg/d (each)
Dual Pressure and 350 bar
Light and heavy mobility
Booked: 4.6 m€
Timeline: 2021



AUXR_H2

1 MW + 1 large station

High-capacity station
200 kg/d at 350 bar
Heavy mobility (buses)
Booked: 3.6 m€
Timeline: 2021
Commissioned Oct.'21





Why choosing McPhy?

| Front runner within electrolysis technology



*Containerized configuration: lower building and installation costs
Perfectly adapted to green field environment.*



Electrolyzers

- High current density electrodes
- Flexibility and fast response time
- High efficiency: $< 4.9 \text{ kWh} / \text{Nm}^3$
- High-pressure: 30 bar, no need for further compression stage
- Modular technology (standardization and replicability): 1 / 4 / 20 / 100+ MW
- Compact footprint:
20 MW installed in less than 900 m²
- Highest quality & safety standards

McLyzer 800-30



McLyzer 200-30





Why choosing McPhy?

| Ready for the zero-emission heavy transportation revolution



Stations

- Scalability of McPhy stations (storage): 200 / 400 / 800 kg/d
- As of 2 000 kg/d: a proprietary & patented architecture
- All dispensing pressures: 350 bar / 700 bar / Dual Pressure
- Increased availability and flexibility, optimized energy efficiency
- Optimized investment and operating costs
- Easy coupling with electrolyzers



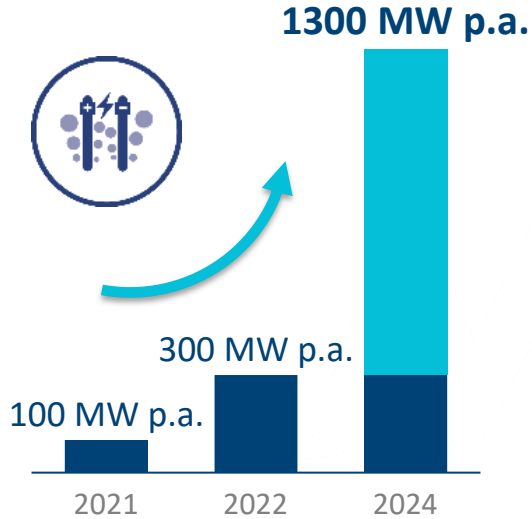
*2 000 kg/d configuration:
12 trains/d, 50 trucks/d or 100 buses/d refueling*





Increasing manufacturing capacities

| Electrolyzers



Belfort Gigafactory - France | 1 GW p.a.

- Additional capacities to McPhy San Miniato
- Site preselection: May 2021 (Belfort)
- Final investment decision: end-2021
- Operational in 2024



San Miniato - Italy | 100 -> 300 MW p.a.

- A premier industrial infrastructure
- Increased automation + 3 shifts-ready in 2022



-60% Capex
By 2030
through economies of scale

1.5 to 2.0 €/kg
of H₂ produced*

Cost parity with SMR

Assumptions => Electricity cost: from 20 to 30 €/MWh / Capacity factor: 50% / Capital cost: 8%



Increasing manufacturing capacities

| Stations



Grenoble - France | 150 stations p.a.

- New capacities in France, replacing La Motte-Fanjas, bringing together R&D, engineering, production and support functions
- A premier industrial infrastructure
- Increased testing capacities



La Motte Fanjas -France | 20 stations p.a.

- Transfer of activities to Grenoble in H1'2022



-70% Capex
By 2030
through economies of scale

6 to 7€/kg
of H₂ delivered

Cost parity with diesel

McPhy

Driving
clean energy
forward

Thank you !

Questions ?

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