

# UNLIMITED HYDROGEN

DESIGNER AND MANUFACTURER

OF EQUIPMENT  
FOR THE PRODUCTION  
& DISTRIBUTION

OF ZERO-CARBON HYDROGEN

BY **McPhy**

**McPhy Full-Year 2020 Results**

March 09, 2021

# Agenda

2020 Highlights

McPhy at a glance

Scale-up Strategy

Summary



**Laurent CARME**

Chief Executive Officer



**Emilie MASCHIO**

Chief Financial Officer

# 2020 Highlights



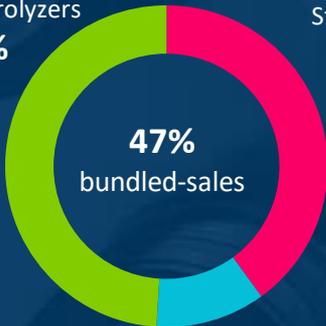
## | 2020 Highlights

**13.7 m€**

revenue  
+20% vs. 2019

Large electrolyzers  
**49%**

Stations  
**40%**



Small electrolyzers & Piel  
**11%**



**23.0 m€**

order intake,  
+75% vs. 2019

**15.2 m€**

backlog  
+154% vs. 2019

**-8.8 m€**

EBIT

**197.7 m€**

cash balance



# Projects delivered [selection]

| Delivering to our customers



## Diax

Piel electrolysis

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

**DIAX**



## Le Mans

Station 20 kg/d

1<sup>st</sup> H<sub>2</sub> 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

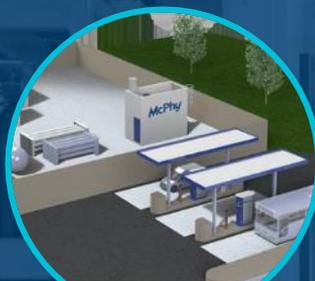
4 MW

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

**Nouryon** **gasurHE**  
crossing borders in energy

**NOBIAN**  
A Nouryon company

## 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)

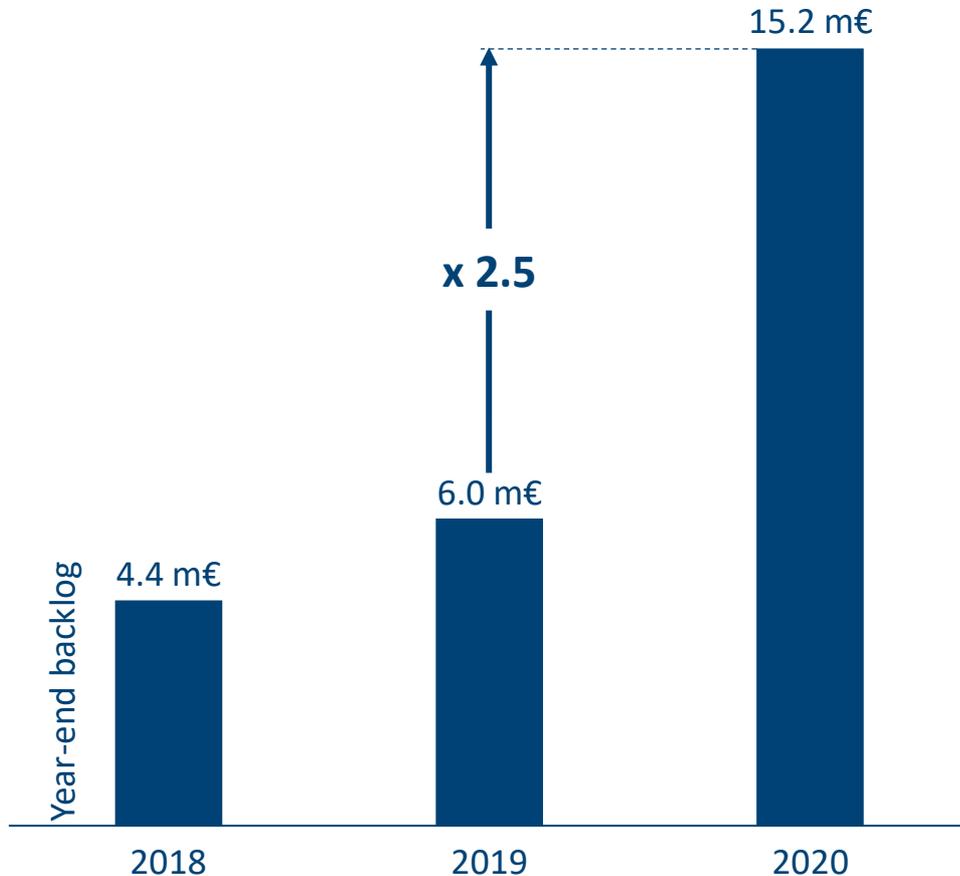
Booked: 3.6 m€

Timeline: 2021



# Backlog evolution

| Capturing massive market potential



A portfolio approach and an offer  
in line with European ambitions:

**6 GW** by 2024 <sup>(1)</sup>

**750 stations** by 2025 <sup>(2)</sup>

(1) European Commission in the framework of the Green Deal

(2) Hydrogen Roadmap of 2019 FCH-JU

# 2020 financial highlights

IFRS (in €m)	2020	2019	2018
<b>1 Orders</b>	<b>23.0</b>	<b>13.0</b>	<b>8.0</b>
<b>2 Sales revenue</b>	<b>13.7</b>	<b>11.4</b>	<b>8.0</b>
<b>3 EBITDA</b>	<b>(7.6)</b>	<b>(3.9)</b>	<b>(7.3)</b>
<b>4 Current Operating Income (EBIT)</b>	<b>(8.8)</b>	<b>(6.5)</b>	<b>(9.4)</b>
Operating Income	(9.0)	(6.5)	(9.4)
<b>Net income (loss)</b>	<b>(9.3)</b>	<b>(6.3)</b>	<b>(9.5)</b>
Operating Cash flow	<b>(7.3)</b>	<b>(7.5)</b>	<b>(7.0)</b>
<b>5 Change in cash</b>	<b>184.7</b>	<b>(1.9)</b>	<b>10.6</b>
<b>Closing cash</b>	<b>197.7</b>	<b>13.0</b>	<b>14.9</b>

- 1 Signing of major commercial contracts** in France and Europe: a +75% growth
- 2 Revenue increase:** +20% to reach 13.7 m€  
47% of the 2020 revenue generated by bundled-sales, coupling electrolysis and hydrogen refueling station
- 3 In 2019: 3.0 m€ in other ordinary income** linked to the cancellation of the repayment of the debt as part of the Pushy project
- 4 Growth in purchases and external charges** in proportion to the activity and in line with the strategy to **continue to invest in R&D** and to onboard people: **recruitment** of 12 net new employees, total number of employees of 110 as of December 2020
- 5 Success of the capital increase** in October 2020: 180 m€ raised

# McPhy at a Glance

| Driving clean energy forward



# A leading company in zero-carbon H<sub>2</sub> 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



## 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

Electricity  
production

Production

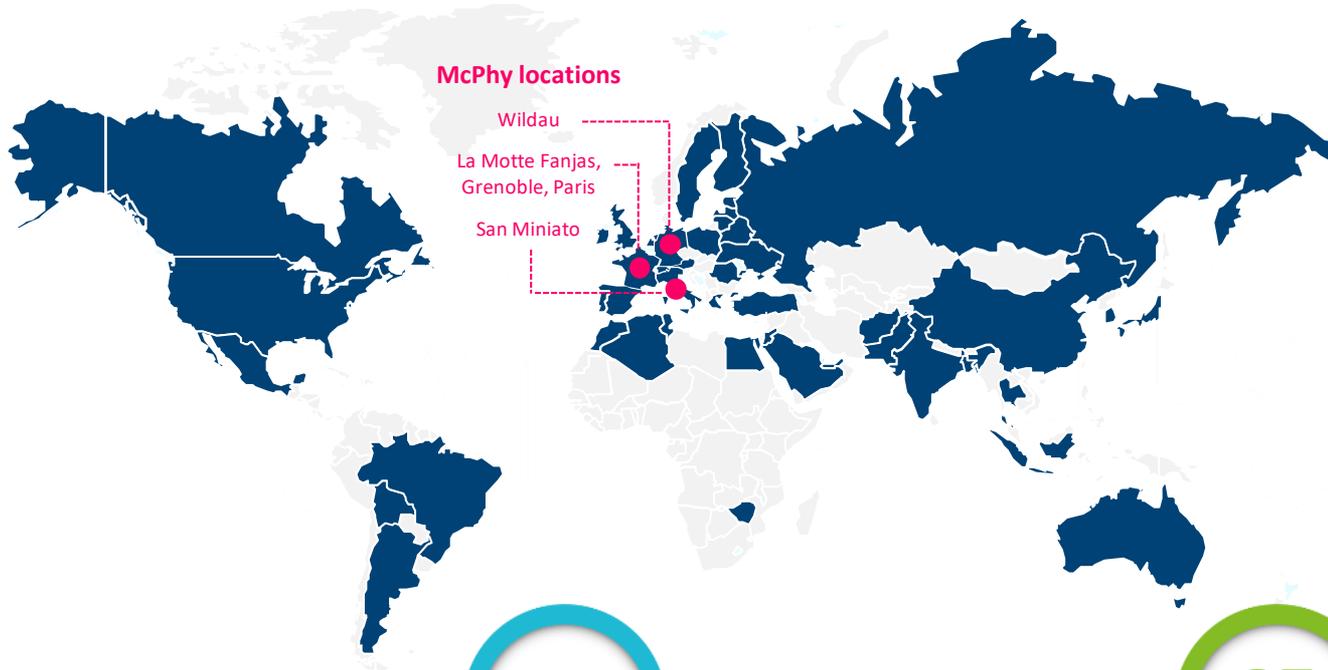
Transport  
& Storage

Distribution

End-use

# A global presence

| EU industrial footprint, global commercial reach



## Countries covered

### Small Electrolyzers (PIEL)

- Global reach, 50 countries
- > 1000 installed

### Large Electrolyzers

- EU focus, 5 countries
- 44 MW in reference

### Stations

- EU focus (France, Germany + UK)
- 35 stations in reference



**Electrolyzers**

in reference

**44**  
MW



**Stations**

in reference

**35**  
stations

\*References that are already operational, being installed or under development [1st March 2021]



# Scale-Up Strategy



# Vision



***Strengthen our position  
as a global leader in hydrogen  
equipment manufacturing***

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*Partner with our customers*

*Accelerate our industrial scale-up  
to increase the competitiveness*

*Cover the whole value-chain*

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# The means of our ambition

| 180 m€ of capital increase to finance our 4-pillar strategic plan

## Invest in TECHNOLOGY



- Maintain leadership in electrolyzers and hydrogen stations
- Focus on XL sizes (100+ MW / 2 000+ kg/d)
- Ensure state-of-the-art safety of the systems

## Build up strong REFERENCES



- Increase bankability of value proposition through emblematic references
- Build partnership & alliances
- Accelerate international commercial ramp-up

## Improve COMPETITIVENESS



- Grow capacities to generate economies of scale: new capacities for stations and electrolyzers
- Deliver cost out roadmap

## Invest in PEOPLE



- Hire key talents and capitalize on them: 50 recruitments planned in 2021
- Structure organization and processes

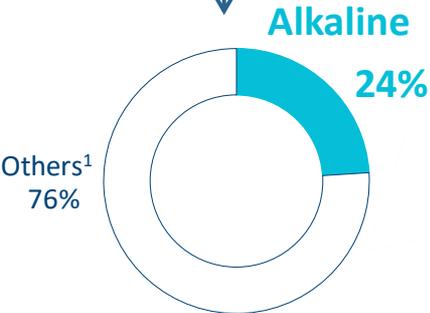


# Positioned on prime technology: alkaline

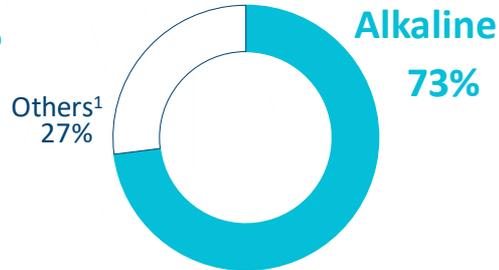
| Proven long-term resilience and stability

## Distribution of hydrogen projects in Europe

By number of projects



By MW installed



Pressurized alkaline electrolysis is the most selected technology to answer the broad-scale needs of decarbonization



## Pressurized alkaline technology highlights

- Proven-technology (200+ years)
- Innovative high-current density electrodes  
co-developed with: 
- Long term resilience and stability
- Lower CAPEX (precious metals avoidance, ...)
- Compacity
- Flexibility suited to integration with renewables
- Better suited to large projects

**The best way to move towards large-scale green hydrogen**



# 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  $900 \text{ m}^2$
- Highest quality & safety standards



# 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, 50 trucks or 100 buses refueling*



# Building partnership ecosystem around technology

## | Integrated offer along the value-chain

### | STRATEGIC SHAREHOLDERS



#### Customer for industry, mobility and energy

- 1<sup>st</sup> commercial success AUXR\_H2

#### Joint technology development

- Performance test on real conditions
- Interaction with low carbon and renewable energies (grid versatility)



#### French sovereign funds' support

- Supports innovative companies involved in the deployment of green energies



#### Manufacturing and liquid H<sub>2</sub> expert

- Market access North America in heavy-mobility ; c.10 mid term opportunities (300+ MW / 10+ stations)
- Expertise in manufacturing scale-up and supply chain
- Joint technology development (e.g. liquefaction, storage, ASME norms)



#### EPC preferred partner for GW-scale electrolysis

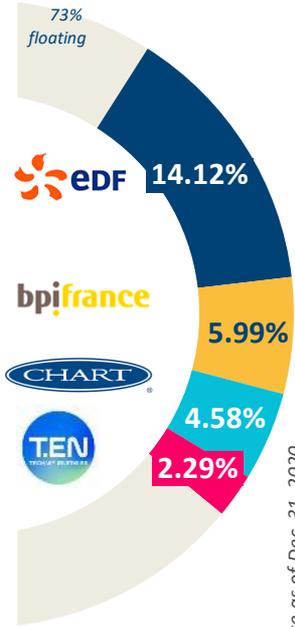
- Expertise in H<sub>2</sub> process integration ; >5 short term joint tenders (350+MW)
- Market access to Oil & Gas and downstream chemicals
- Position in strategic geographies (e.g. US, MEA)

### | TECHNOLOGY PARTNER



#### Technology partnership

- Exclusivity on high current density electrodes
- Joint technology development



Capital structure as of Dec. 31, 2020



# Deep involvement in the hydrogen ecosystem

## | Sharing a vision of hydrogen in the global decarbonation scenarios



Engagée pour la transition écologique  
250 members from the whole H<sub>2</sub> value chain



Comité stratégique de filière



Conseil National de l'Hydrogène  
16 members



Hydrogen Europe



European Clean Hydrogen Alliance



DWV  
Deutscher Wasserstoff- und  
Brennstoffzellen-Verband



Hydrogen Deutschland & Italia



Hydrogen Council

109 companies from 20+ countries  
are members of this global CEO-led initiative

### Contributions

- Senior management involvement
- Studies, market data
- Thematic working groups
- Regulatory workshops

### Benefits

- Funding (IPCEI, Green deal, private, incentives, National recovery plans, ...)
- Visibility, positioning, credibility
- Change in policy & legislation
- Commercial & Partnerships
- Technical X-fertilization

**Strong contribution and advocacy to unlock market potential**



# Hydeal Ambition

## HyDeal Ambition: Europe's first open and integrated green hydrogen consortium

- **Solar developers:** DH2/Dhamma Energy (Spain), Falck Renewables (Italy), Qair (France)
- **Electrolysis OEMs, engineering and EPC providers:** McPhy Energy (France), VINCI Construction (France)
- **Gas TSOs:** Enagás (Spain), OGE (Germany), SNAM (Italy), GRTgaz (France), Teréga (France)
- **Energy and industrial groups:** Gazel Energie, subsidiary of EPH (France), Naturgy (Spain), HDF Energie (France)
- **Infrastructure funds:** Cube, Marguerite, Meridiam
- **Consultants and advisors:** European Investment Bank, Corporate Value Associates (CVA), Clifford Chance, Cranmore Partners, Finergreen, Envision Digital, Energy Web

Announcement: Feb. 2021

### McPhy is part of this unique industrial initiative

- 30 energy players initiate an integrated value chain
- Collective goal: deliver green hydrogen across Europe at €1.5/kg before 2030
- Ambition is to achieve 95 GW of solar and 67 GW of electrolysis capacity by 2030 , to deliver 3.6 million tons of green hydrogen per year
- First initiative expected within a year in Spain, based on a portfolio of solar sites with a capacity of close to 10 GW



# Increasing manufacturing capacities

| Serve market growth



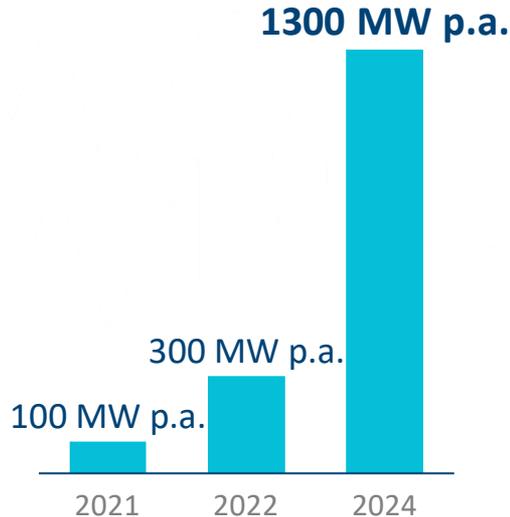
## Electrolyzers

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

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

**Giga Factory - France**  
| 1 GW p.a.

- Go decision: summer 2021
- Additional capacities to McPhy San Miniato
- Operational in 2024

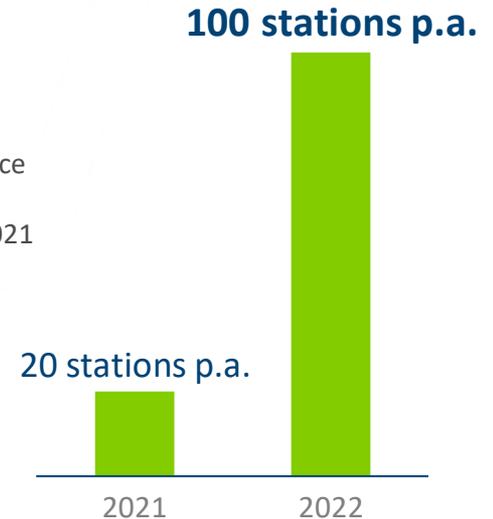


## Stations

**La Motte Fanjas**  
| 20 stations p.a.

**Stations Factory**  
| 100 stations p.a.

- New capacities in France
- Communication on location by summer 2021



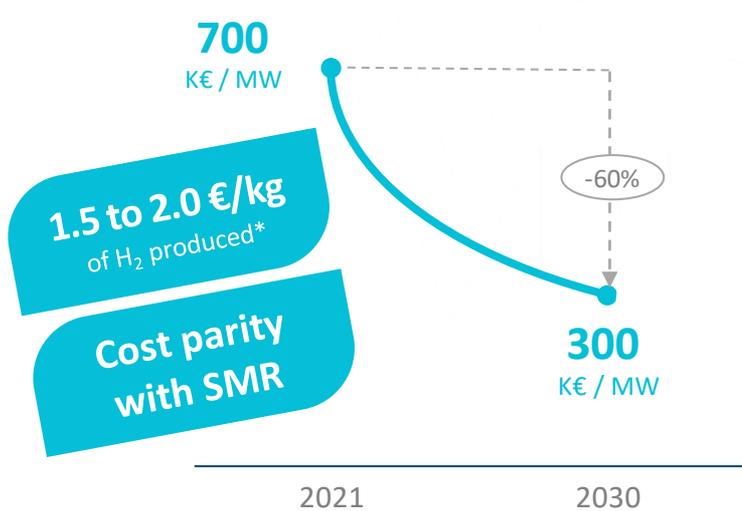


# Acceleration of equipment cost decrease

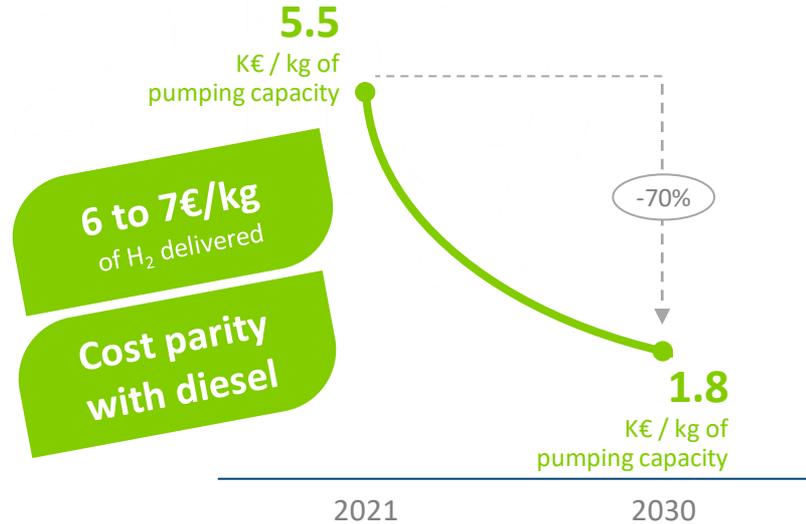
| Make renewable hydrogen commercially viable



## Electrolyzers



## Stations



**Cost-parity with fossil before 2030**



# Invest in McPhy people

| “One McPhy” team and strengthened operating model



## Diverse

20+ citizenships  
25+ % female  
3 countries:  
50% France,  
25% Germany,  
25% Italy

## Experienced

Executive Committee:  
~25 years  
of average working  
experience  
Board of Directors:  
10 senior experts  
and CEOs

## Qualified

Top EU & global  
engineering  
universities  
and schools  
50+% PhD  
or Engineers

## Growing

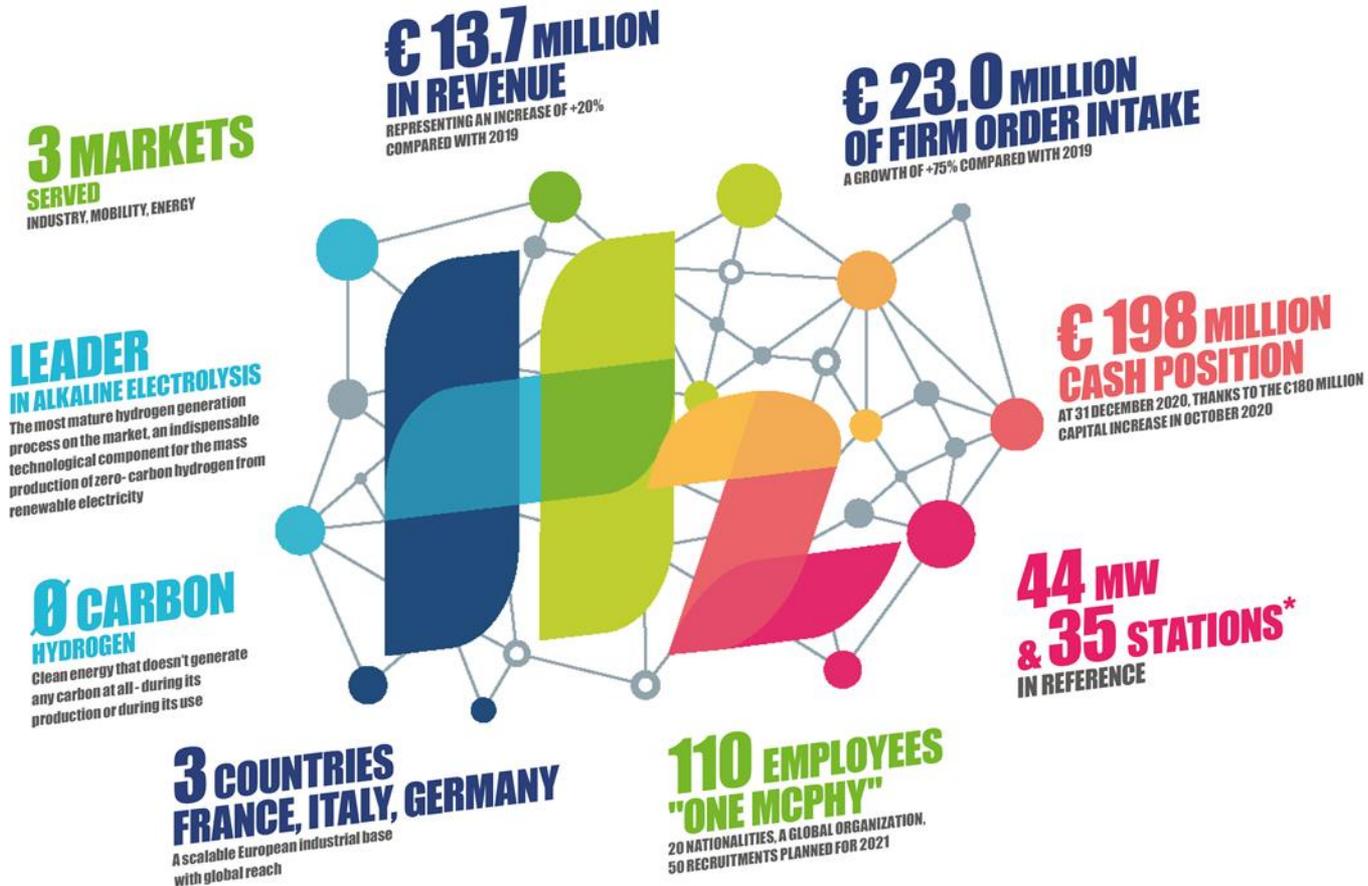
110 people  
+50% in 2021

# Summary



# Snapshot 2020

| In 2021, let's continue driving clean hydrogen forward



\* References that are already operational, being installed or under development [03 August 2020]  
Among them: 4 MW ELY and 2 HRS are conditional part of the ZEV framework contract [18 June 2020]

# Appendices

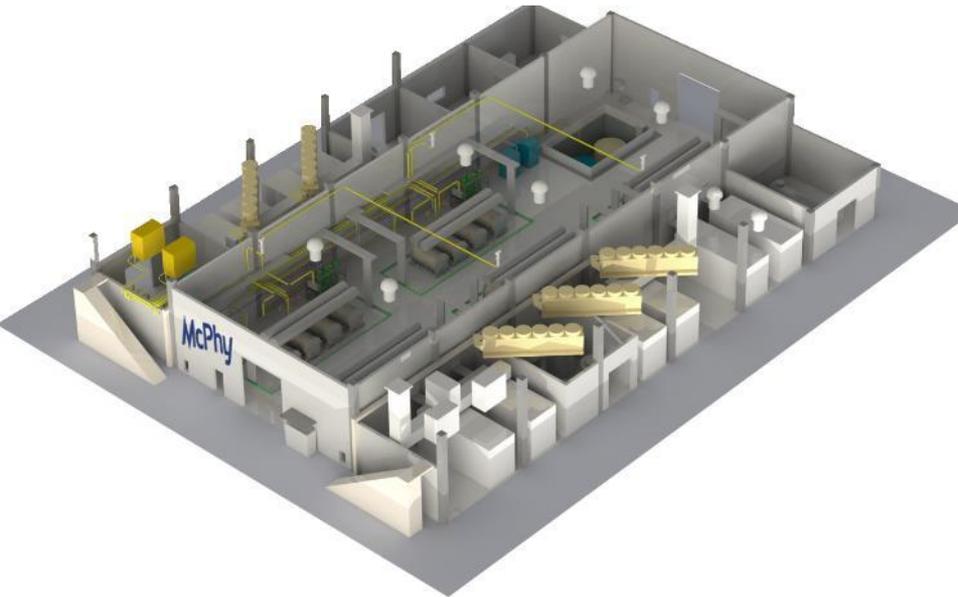
| Build strong references



# Djewels



## The largest zero-carbon H<sub>2</sub> production unit in Europe Located in the heart of a chemical park



- Electrolysis: 20 MW alkaline electrolysis platform
- High current density electrodes
- 3 000 tons of zero-carbon H<sub>2</sub> / year and 27 000 tons of Co<sub>2</sub> emissions avoided / year
- Key project to establish zero-carbon hydrogen competitiveness at large-scale
- Industrial use: chemicals
- Timeline: 2022
- 1 m€ booked | *scope of McPhy: 15 m€*

CONTRIBUTOR NETWORK



A PROJECT SUPPORTED BY



The funding provided by the Fuel Cells and Hydrogen Joint Undertaking (FCU) is part of the Horizon Europe programme and is subject to the development of production scale-up contracts, jointly developed with the industrial partners, under the leadership of the Fuel Cells and Hydrogen Joint Undertaking.

# Zero Emission Valley



## The largest H<sub>2</sub> mobility deployment project in France, one of the most ambitious at a European level

- Electrolysis: 4 MW of alkaline electrolysis\*
- Stations: 5 stations of 400 to 800 kg/d (each)
- The MAT consortium led by McPhy will, in total, deliver 4 MW of electrolysis and 14 stations
- Timeline: 2020 to 2022
- Booked: 7.8 m€ | *scope of McPhy*: >11 m€



# Hyport



## The first hydrogen production and distribution system to be implemented in an airport area

- Electrolysis: 1 MW alkaline electrolysis platform
- 1 Dual Pressure high-capacity station: 400 kg/d to be deployed in a public zone
- 1 Starter Kit (20 kg/d at 350 bar), to be set up in a private restricted zone for airport services
- Timeline: end of 2021
- Booked: 4.0 m€

HY PORT

ENGIE  
Solutions

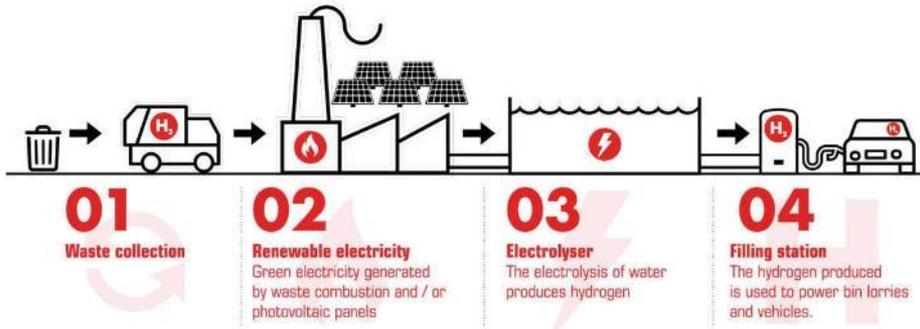


# Dijon Métropole Smart Energy



## Development of the H<sub>2</sub> infrastructure of the metropolis of Dijon

- Electrolysis: 1 MW alkaline electrolysis platform
- 2 stations of 400 kg/d (each), 4 distribution terminals in total (heavy and light vehicles)
- Zero emission mobility: fleet of 27 buses, 9 garbage trucks and ~15 light vehicles
- Contract signature: 2020
- 4.6 m€



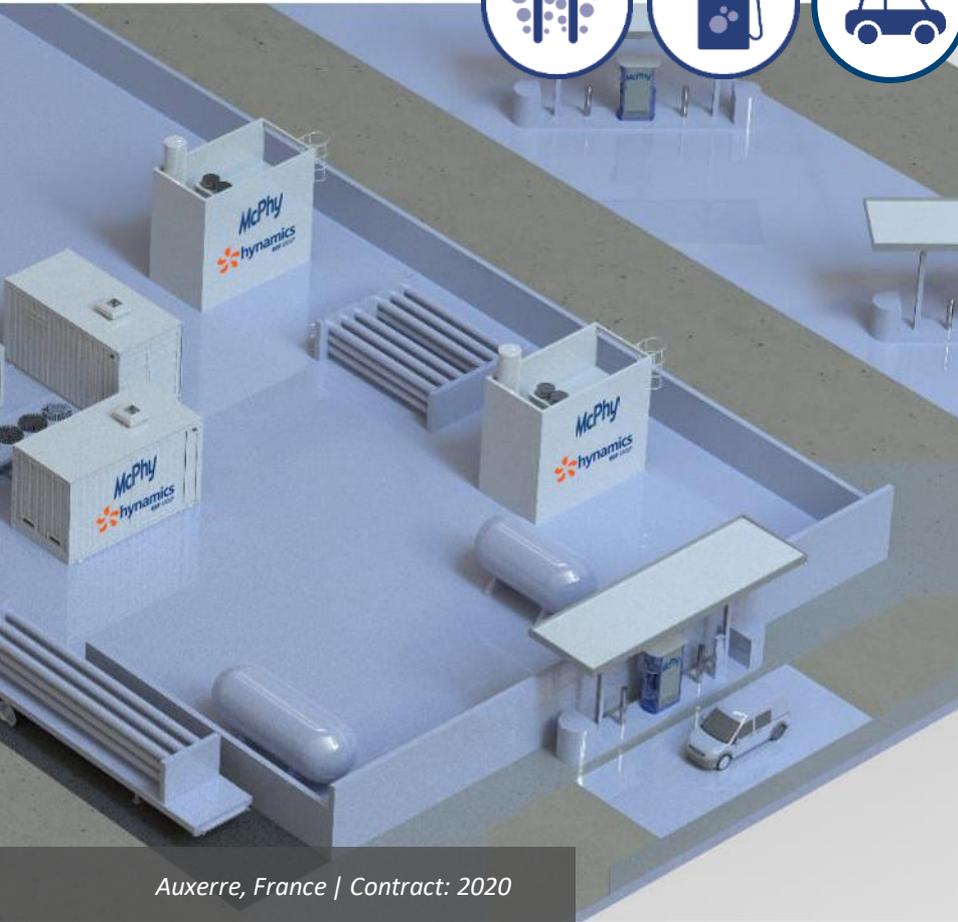
Rougeot Energie ©



storengy



# AUXR\_H2



## Multimodal ecosystem H<sub>2</sub> in the heart of the auxerrois territory

- Electrolysis: 1 MW alkaline electrolysis platform
- Station 200 kg/d
- Multimodal platform: recharging 5 buses in phase 1, but also distributing to light vehicles and trucks
- Hydrogen produced from “guaranteed origin” electricity, 2 200 tons of CO<sub>2</sub> avoided per year
- Commissioning: autumn 2021
- Booked: 3.6 m€



# Jupiter 1000



Jupiter 1000 ©

Fos-Sur-Mer, France | Commissioning: 2019

## First Power-to-Gas project at a MW-scale in France

- Electrolysis: 1 MW of electrolysis, 0.5 alkaline + 0.5 PEM
- Industrial + Energy end-uses
- Testing the performance of two electrolysis technologies (alkaline & PEM) under real conditions and on a real scale
- Commissioned in 2019
- 2.4 m€



# Sinopec Hebei



## A strong expertise in international projects management

- Electrolysis: 4 MW of alkaline electrolysis
- Zero-carbon hydrogen production platform, from a wind farm
- Very fast dynamic response, adapted to renewable energy variations
- Strengthens McPhy's positioning on international multi-MW projects
- Commissioned in 2021
- 6.4 m€



Guyan, Hebei Province, China | Commissioning: 2021

# Management Team



# A highly experienced, international, Executive Committee



Chief Executive Officer  
**Laurent Carme**

## Product, Sales & Marketing



Chief Commercial Officer  
**Bertrand Amelot**

## Operations



Chief Operations Officer  
**Gilles Cachot**

## Manufacturing & Procurement



Chief Manufacturing & Procurement Officer  
**Antoine Ressicaud**



Electrolyzers Chief Technology Officer  
**Michael Wenske**



HRS Chief Technology Officer  
**Jean-René Cavallé**



Chief Project Management Officer  
**Alexander Picco**



Chief Customer Service Officer  
**Marco Luccioli**

## Support Functions



Chief Financial Officer  
**Emilie Maschio**



Strategy Director  
**Olivier Juino**



Human Resources Manager  
**Franck Tallieu**



Corporate Lawyer  
**Marc Lepelé**



Quality & EHS Manager  
**Tantely Rabemanantsoa**



Communications Manager  
**Aurore Gauthier**

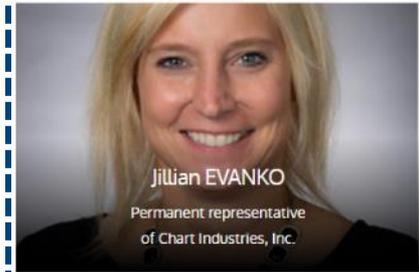
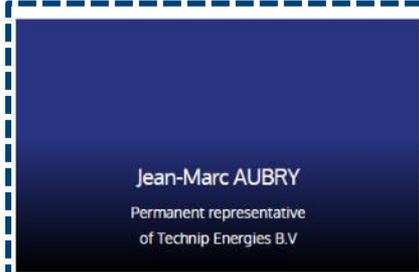
## Countries

France  
**Jean-René Cavallé**

Germany  
**Michael Wenske**

Italy  
**Marco Luccioli**

# Board of Directors made of senior experts and CEOs



2 new directors since Jan. 2021:

**Jillian EVANKO**, Permanent representative  
of Chart Industries, Inc.

**Jean-Marc AUBRY**, Permanent representative  
of Technip Energies B.V.

# McPhy

Driving  
clean energy  
forward

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