

MCPHY ENERGY

CORPORATE initiation of coverage

Fair Value EUR7,5

Share price EUR4.15
Bloomberg / Reuters MCPHY FP/MCPHY.PA

Smart industries & Services | Cleantech & Energy

Time for hydrogen to realise its potential



For decades, carbon-free hydrogen has been identified as a potential game changer for multiple sectors, in particular transport. Despite obvious advantages, so far this potential has remained largely untapped. Until now.

Carbon-free hydrogen is turning a corner, shifting from small pilot to commercial-scale applications. In recent years, the average number of projects has multiplied five-fold and their average size ten-fold. Major industrials from multiple sectors have realised this and are positioning themselves.

The first factor driving this interest in carbon-free hydrogen is the enforcement of environmental regulations with a focus on reducing greenhouse gas emissions (Paris Agreement, UK Climate Change Act etc.). Businesses and law-makers are steering the ship towards a low-carbon economy and hydrogen can help to achieve this objective.

The second factor is the decline in the cost of renewables, especially solar PV and wind power. Solar PV costs have dropped 75% since 2010 and are expected to fall further ; -40% by the end of the decade and -65% by 2050.

In our view, McPhy is perfectly positioned to benefit from this transition towards a carbon-free industry. We justify our key bull cases on McPhy by :

- a **strong commercial momentum** (20 MW with Nouryon) and **top-line growth** (CAGR >30% over the next decade),
- a **structuring industrial and commercial agreement with EDF**, which is also its key shareholder,
- a **mature but cutting edge technology** (alkaline electrolysis) enforced by a partnership with De Nora.

McPhy is heading for a bright future but so far the market has completely missed its potential and the share is lagging its peers (NEL, ITM Power etc.). **We expect a strong rerating.**

We are initiating coverage of McPhy with a Fair Value of EUR 7.5 per share.

EXECUTIVE SUMMARY

L'hydrogène est depuis longtemps massivement utilisé dans de nombreux secteurs industriels, notamment le raffinage du pétrole ou la production d'ammoniac pour les engrais.

Dans l'immense majorité des cas, cet hydrogène est produit à partir de ressources fossiles, principalement du gaz naturel, via un procédé appelé SMR (Steam Methane Reforming). Ce procédé est peu coûteux mais il est très polluant. La production d'1 kg d'hydrogène s'accompagne de l'émission de 10 kg de CO₂.

Face à l'urgence du changement climatique et pour répondre aux différents objectifs de la transition énergétique (Accords de Paris etc.), il devient nécessaire de produire l'hydrogène de manière plus soutenable et écologique.

Les technologies permettant de produire de l'hydrogène de manière totalement décarbonée existent déjà et nous assistons aujourd'hui à leur montée en puissance. Depuis environ 2 ans, le nombre et la taille des projets ne cessent d'augmenter. La technologie est véritablement passée du stade du démonstrateur à celui du déploiement à l'échelle industrielle.

Les deux principales technologies pour produire de l'hydrogène décarboné sont: i/ l'électrolyse alcaline de l'eau et ii/ l'électrolyse PEM (Proton Exchange Membrane). Le principe de ces deux méthodes est similaire mais elles ont leurs propres avantages et inconvénients. McPhy est positionné sur l'électrolyse alcaline, considérée comme la plus mature. Aujourd'hui, il n'est pas possible de dire si l'une de ces deux technologies va prendre le dessus sur l'autre, le consensus scientifique et industriel plaide plutôt pour une cohabitation dans les années à venir.

Pendant longtemps, ces deux technologies sont restées peu utilisées car pas assez compétitives face au SMR (gaz naturel). Cela est en train de changer grâce à: i/ l'amélioration de la productivité, ii/ la baisse de prix des énergies renouvelables et iii/ des normes environnementales toujours plus contraignantes.

Au-delà de l'industrie, la montée en puissance de l'hydrogène décarboné devrait se traduire par le déploiement à grande échelle des véhicules à hydrogène. Les différents programmes d'investissements et de subventions publiques faciliteront cette montée en puissance.

Nous considérons McPhy comme étant l'une des sociétés les mieux positionnées pour bénéficier de ce changement de paradigme et cela se traduit d'ores et déjà par une dynamique commerciale extrêmement solide (contrat de 20 MW avec Nouryon et Gasunie aux Pays-Bas).

Pour l'aider à concrétiser pleinement son potentiel de croissance, McPhy pourra compter sur un leader mondial de l'énergie : EDF, devenu son principal actionnaire et partenaire en 2018 (20.7% du capital aujourd'hui).

Boursièrement, McPhy accuse un retard significatif par rapport à ses principaux comparables (NEL et ITM Power), nous attendons un rerating significatif.

Nous initions la couverture de McPhy avec une Fair Value de 7.5€/action.

Hydrogen has long been used extensively in many industrial sectors, including oil refining and the production of ammonia for fertilizers.

In the vast majority of cases, this hydrogen is produced from fossil resources, mainly natural gas, through a process called SMR (Steam Methane Reforming). This process is inexpensive but very polluting. The production of 1 kg of hydrogen is responsible for the emission of 10 kg of CO₂.

Given the urgent nature of climate change and in order to meet the various objectives of the energy transition (Paris Agreements etc.), it is necessary to produce hydrogen in a more sustainable and ecological way.

The technologies to produce hydrogen in a totally carbon-free way already exist and are ramping-up. Over the last two years or so, the number and size of projects has been steadily increasing. The technology has shifted from demonstration plants to industrial-scale deployment.

The two main technologies to produce carbon-free hydrogen are: i/ water alkaline electrolysis and ii/ PEM (Proton Exchange Membrane) electrolysis. The principle of these two methods is broadly the same but they have their own advantages and disadvantages. McPhy is positioned in the first of these, alkaline electrolysis, which is considered the most mature. Today, it is not possible to say whether one of these two technologies will take precedence over the other, the scientific and industrial consensus rather suggests cohabitation of the two for the foreseeable future.

For a long time, these two technologies remained on the sideline because they were not competitive enough against SMR (natural gas). This is now changing thanks to: i/ improved productivity, ii/ falling prices for renewable energies and iii/ increasingly stringent environmental standards.

Beyond industry, the rise of carbon-free hydrogen is expected to result in the widespread deployment of hydrogen vehicles. Various investment programs and public subsidies will facilitate this ramp-up.

We consider McPhy to be one of the companies best positioned to benefit from this new paradigm and this is already reflected in an extremely solid commercial dynamic (20 MW contract with Nouryon and Gasunie in the Netherlands).

To help it realise its growth potential, McPhy will benefit from its industrial and commercial agreement with a global leader in the energy sector: EDF, which is also its main shareholder and partner since 2018 (20.7% of the capital today).

McPhy's share performance lags significantly behind its main peers (NEL and ITM Power) and we expect a significant rerating.

We are initiating coverage of McPhy with a Fair Value of EUR 7.5 per share.

Bryan Garnier stock rating system

For the purposes of this Report, the Bryan Garnier stock rating system is defined as follows:

Stock rating

BUY	Positive opinion for a stock where we expect a favourable performance in absolute terms over a period of 6 months from the publication of a recommendation. This opinion is based not only on the FV (the potential upside based on valuation), but also takes into account a number of elements that could include a SWOT analysis, momentum, technical aspects or the sector backdrop. Every subsequent published update on the stock will feature an introduction outlining the key reasons behind the opinion.
NEUTRAL	Opinion recommending not to trade in a stock short-term, neither as a BUYER or a SELLER, due to a specific set of factors. This view is intended to be temporary. It may reflect different situations, but in particular those where a fair value shows no significant potential or where an upcoming binary event constitutes a high-risk that is difficult to quantify. Every subsequent published update on the stock will feature an introduction outlining the key reasons behind the opinion.
SELL	Negative opinion for a stock where we expect an unfavourable performance in absolute terms over a period of 6 months from the publication of a recommendation. This opinion is based not only on the FV (the potential downside based on valuation), but also takes into account a number of elements that could include a SWOT analysis, momentum, technical aspects or the sector backdrop. Every subsequent published update on the stock will feature an introduction outlining the key reasons behind the opinion.

Distribution of stock ratings

BUY ratings 45,9%

NEUTRAL ratings 46,5%

SELL ratings 7,6%

Research Disclosure Legend

1	Bryan Garnier shareholding in Issuer	Bryan Garnier & Co Limited or another company in its group (together, the "Bryan Garnier Group") has a shareholding that, individually or combined, exceeds 5% of the paid up and issued share capital of a company that is the subject of this Report (the "Issuer").	No
2	Issuer shareholding in Bryan Garnier	The Issuer has a shareholding that exceeds 5% of the paid up and issued share capital of one or more members of the Bryan Garnier Group.	No
3	Financial interest	A member of the Bryan Garnier Group holds one or more financial interests in relation to the Issuer which are significant in relation to this report	No
4	Market maker or liquidity provider	A member of the Bryan Garnier Group is a market maker or liquidity provider in the securities of the Issuer or in any related derivatives.	No
5	Lead/co-lead manager	In the past twelve months, a member of the Bryan Garnier Group has been lead manager or co-lead manager of one or more publicly disclosed offers of securities of the Issuer or in any related derivatives.	No
6	Investment banking agreement	A member of the Bryan Garnier Group is or has in the past twelve months been party to an agreement with the Issuer relating to the provision of investment banking services, or has in that period received payment or been promised payment in respect of such services.	No
7	Research agreement	A member of the Bryan Garnier Group is party to an agreement with the Issuer relating to the production of this Report.	Yes
8	Analyst receipt or purchase of shares in Issuer	The investment analyst or another person involved in the preparation of this Report has received or purchased shares of the Issuer prior to a public offering of those shares.	No
9	Remuneration of analyst	The remuneration of the investment analyst or other persons involved in the preparation of this Report is tied to investment banking transactions performed by the Bryan Garnier Group.	No
10	Corporate finance client	In the past twelve months a member of the Bryan Garnier Group has been remunerated for providing corporate finance services to the issuer or may expect to receive or intend to seek remuneration for corporate finance services from the Issuer in the next six months.	Yes
11	Analyst has short position	The investment analyst or another person involved in the preparation of this Report has a short position in the securities or derivatives of the Issuer.	No
12	Analyst has long position	The investment analyst or another person involved in the preparation of this Report has a long position in the securities or derivatives of the Issuer.	No
13	Bryan Garnier executive is an officer	A partner, director, officer, employee or agent of the Bryan Garnier Group, or a member of such person's household, is a partner, director, officer or an employee of, or adviser to, the Issuer or one of its parents or subsidiaries. The name of such person or persons is disclosed above.	No
14	Analyst disclosure	The analyst hereby certifies that neither the views expressed in the research, nor the timing of the publication of the research has been influenced by any knowledge of clients positions and that the views expressed in the report accurately reflect his/her personal views about the investment and issuer to which the report relates and that no part of his/her remuneration was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in the report.	Yes
15	Other disclosures	Other specific disclosures: Report sent to Issuer to verify factual accuracy (with the recommendation/rating, price target/spread and summary of conclusions removed).	Yes

Summary of Investment Research Conflict Management Policy is available www.bryangarnier.com

<p>London</p> <p>Bryan, Garnier & Co Ltd</p> <p>Beaufort House 15 St. Botolph Street London EC3A 7BB United Kingdom +44 207 332 2500</p>	<p>Paris</p> <p>Bryan, Garnier & Co Ltd</p> <p>26 Avenue des Champs-Élysées 75008 Paris France +33 1 56 68 75 20</p>	<p>Munich</p> <p>Bryan, Garnier & Co. GmbH</p> <p>Widenmayerstrasse 29 80538 Munich Germany +49 89 2422 62 11</p>	<p>New York</p> <p>Bryan Garnier Securities LLC</p> <p>750 Lexington Avenue 16th floor New York, NY 10022 United States +1 212 337 7000</p>
<p>Oslo</p> <p>Beringer Finance AS</p> <p>Beddingen 8, Aker Brygge Postbox: 0117 Oslo Oslo 0250 Norway +47 908 45 025</p>	<p>Stockholm</p> <p>Beringer Finance</p> <p>Malmskillandsgatan 32, 6th Floor 111 51 Stockholm Sweden +46 722 401 080</p>	<p>Reykjavik</p> <p>Höfðatorg, Katrínartún 2 105 Reykjavik Iceland +354 554 78 00</p>	<p>Palo Alto</p> <p>394 University Avenue Palo Alto California (CA) 94301 USA +1 650 283 18 34</p>

IMPORTANT INFORMATION

This document is classified under the FCA Handbook as being investment research (independent research). Bryan, Garnier & Co Limited has in place the measures and arrangements required for investment research as set out in the FCA's Conduct of Business Sourcebook.

This report is prepared by Bryan, Garnier & Co Limited, registered in England Number 03034095 and its MIFID branch registered in France Number 452 605 512. Bryan, Garnier & Co Limited is authorized and regulated by the Financial Conduct Authority (Firm Reference Number 178733) and is a member of the London Stock Exchange. Registered address: Beaufort House 15 St. Botolph Street, London EC3A 7BB, United Kingdom.

This Report is provided for information purposes only and does not constitute an offer, or a solicitation of an offer, to buy or sell relevant securities, including securities mentioned in this Report and options, warrants or rights to or interests in any such securities. This Report is for general circulation to clients of the Firm and as such is not, and should not be construed as, investment advice or a personal recommendation. No account is taken of the investment objectives, financial situation or particular needs of any person.

The information and opinions contained in this Report have been compiled from and are based upon generally available information which the Firm believes to be reliable but the accuracy of which cannot be guaranteed. All components and estimates given are statements of the Firm, or an associated company's, opinion only and no express representation or warranty is given or should be implied from such statements. All opinions expressed in this Report are subject to change without notice. To the fullest extent permitted by law neither the Firm nor any associated company accept any liability whatsoever for any direct or consequential loss arising from the use of this Report. Information may be available to the Firm and/or associated companies which are not reflected in this Report. The Firm or an associated company may have a consulting relationship with a company which is the subject of this Report.

This Report may not be reproduced, distributed or published by you for any purpose except with the Firm's prior written permission. The Firm reserves all rights in relation to this Report.

Past performance information contained in this Report is not an indication of future performance. The information in this report has not been audited or verified by an independent party and should not be seen as an indication of returns which might be received by investors. Similarly, where projections, forecasts, targeted or illustrative returns or related statements or expressions of opinion are given ("Forward Looking Information") they should not be regarded as a guarantee, prediction or definitive statement of fact or probability. Actual events and circumstances are difficult or impossible to predict and will differ from assumptions. A number of factors, in addition to the risk factors stated in this Report, could cause actual results to differ materially from those in any Forward Looking Information.

Disclosures specific to clients in the United Kingdom This Report has not been approved by Bryan, Garnier & Co Limited for the purposes of section 21 of the Financial Services and Markets Act 2000 because it is being distributed in the United Kingdom only to persons who have been classified by Bryan, Garnier & Co Limited as professional clients or eligible counterparties. Any recipient who is not such a person should return the Report to Bryan Garnier & Co Limited immediately and should not rely on it for any purposes whatsoever.

This Report is based on information obtained from sources that Bryan, Garnier & Co Limited believes to be reliable and, to the best of its knowledge, contains no misleading, untrue or false statements but which it has not independently verified. Neither Bryan, Garnier & Co Limited and/or Bryan Garnier Securities LLC make no guarantee, representation or warranty as to its

accuracy or completeness. Expressions of opinion herein are subject to change without notice. This Report is not an offer to buy or sell any security.

Bryan Garnier Securities, LLC and/or its affiliate, Bryan Garnier & Co Limited may own more than 1% of the securities of the company(ies) which is (are) the subject matter of this Report, may act as a market maker in the securities of the company(ies) discussed herein, may manage or co-manage a public offering of securities for the subject company(ies), may sell such securities to or buy them from customers on a principal basis and may also perform or seek to perform investment banking services for the company(ies).

Bryan Garnier Securities, LLC and/or Bryan, Garnier & Co Limited are unaware of any actual, material conflict of interest of the research analyst who prepared this Report and are also not aware that the research analyst knew or had reason to know of any actual, material conflict of interest at the time this Report is distributed or made available.

Notice to US investors

This research report (the "Report") was prepared by Bryan Garnier & Co Limited for information purposes only. The Report is intended for distribution in the United States to "Major US Institutional Investors" as defined in SEC Rule 15a-6 and may not be furnished to any other person in the United States. Each Major US Institutional Investor which receives a copy of this Report by its acceptance hereof represents and agrees that it shall not distribute or provide this Report to any other person. Any US person that desires to effect transactions in any security discussed in this Report should call or write to our US affiliated broker, Bryan Garnier Securities, LLC, 750 Lexington Avenue, New York NY 10022. Telephone: 1-212-337-7000.