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## **Hydrogen: tomorrow's world leaders are being structured today**

Hydrogen: this energy source covers the whole color spectrum - grey, green, blue, yellow, turquoise... - and triggers opinions ranging from enthusiasm to distrust, and everything in between. Some, like the French government, are definitely in the optimistic category, those who see hydrogen as the clean energy source that can lead them to carbon neutrality. In the automotive world, opinions - and ambitions - are mixed. But whatever the positions, hydrogen leaves no player in the sector indifferent. Indeed, it is difficult to ignore the issue, as it is so closely linked to political objectives.

On 3 September 2020, as part of the recovery plan, the French government announced its ambition to become one of the leading countries in the field of low-carbon hydrogen. An ambition reiterated within the France 2030 industrial plan. A direct investment of 7.2 billion euros is planned by this date, the first sums to be released next year.

Across the Rhine, the vision for hydrogen is different, but the will is no less strong, with an investment plan of 9 billion euros on the table. And while the United States is lagging behind, Asia is moving full steam ahead towards large-scale use. Japan and South Korea have the second and third largest investment plans in the world.

On the one hand, therefore, the political will in favor of hydrogen technologies is there. On the other hand, car manufacturers are facing regulations that force them to reduce the average CO2 emissions of their vehicles.

So, is hydrogen the "miracle" energy?

Nothing is certain, or at least nothing will be easy.

## **Manufacturers: each his own way**

If the adoption of hydrogen is not massive in the automotive world, it is because many obstacles remain. Without going back over how this energy works, it should be pointed out that the fuel cells used in vehicles still have limited power and high production costs, that hydrogen, depending on its origin, is not necessarily 'clean' and that the network for refuelling hydrogen vehicles is still very limited.

Nevertheless, if some manufacturers are taking a close interest in this energy source, it is mainly for its potential for commercial vehicles, heavy vehicles and professional fleets. Fast fill-ups and a long range are major advantages over electric vehicles. Manufacturers are therefore launching into certain specific segments.

Stellantis is planning to produce medium-sized hydrogen-powered vans, Renault to equip its Master and Opel its Vivaro. In Germany, BMW has already set its sights on the private market for 2030 and is expected to build a test fleet of 100 cars later this year. Audi is quietly researching hydrogen fuel cells, even though its parent company Volkswagen has been a vocal critic of the energy. At Daimler, positions are also mixed. The manufacturer has abandoned the Mercedes hydrogen fuel cell SUV but is still active in heavy goods vehicles, in collaboration with Volvo.

The use of hydrogen is therefore part, to a greater or lesser extent, of the long-term development plans of manufacturers. Long term, because we can hardly expect massive sales over the next few years, especially in the passenger car segment. According to LMC Automotive, an international automotive consultancy, sales of hydrogen fuel cell models in Europe will not take off before 2035.

## **Structuring the ecosystem**

However, there is no question of waiting to integrate this subject into the strategic reflections of companies in the sector. The sector is now being structured and partnerships go far beyond the manufacturers. Air Liquide, Hype taxis and Toyota have created the company HysetCo. Its

objective: to develop hydrogen mobility in the Ile-de-France region. Michelin and Faurecia have created their joint venture, Symbio, which produces fuel cells.

Some Asian manufacturers are ahead of the West in equipping their vehicles with hydrogen fuel cells. They are in the process of acquiring industrial control of hydrogen and fuel cell production. The Korean Hyundai recently confirmed its ambitions in the "Hydrogen Vision 2040" plan. It aims to introduce a new generation of high-powered fuel cells from 2023 and hopes to offer a hydrogen version for its entire range by 2030. As for Toyota, a pioneer in hydrogen vehicles for private individuals, it is also multiplying its projects and announcements. From its subsidiary in Seoul and its partnerships throughout Asia, Caarea is already working alongside some of the largest Asian manufacturers at the forefront of hydrogen use and the protection of this technology.

In Asia, as in Europe, the hydrogen automotive industry is in the process of being structured. For the conditions for success to be met, the entire value chain will have to be involved. Insurers therefore also have a place to play in this ecosystem and will be an essential link in a wider market deployment.



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