

The French automotive industry faces the challenge of the ecological transition

Introduction

Orianne Chenain, Deputy Director of Transport Equipment, Mechanics and Energy – Industry Department – Directorate General for Enterprise (DGE)

France faces structural change in an industrial sector

The vehicle of the future: what impact on companies and the vehicle value chain?

Carlos Tavares, Managing Director and Executive Director of Stellantis

Over the last five years, the automotive industry has entered a rapid transformation, as fast as it is deep.

Created two years ago, Stellantis aims to become a sustainable mobility tech company with the ambition to preserve the freedom of movement of citizens through a clean, safe and affordable options. Behavioral changes show that the vehicle of the future must reimagine the mobility it created more than a century ago... It must be positioned as a response to the expectations of consumers and the challenges of sustainable mobility. Thus, the vehicle of the future must be considered within the broader framework of the mobility of the future, taking into account the entire value chain. It must go beyond a simple product performance approach by integrating expectations, regulations and the environment, especially in the face of global warming, by being sustainable and accessible to the greatest number.

China, the future dominant player in the global automotive industry?

Jean-Marc Fenet, Marie-Pia Lebrun and Antoine Moisson, Regional Economic Service of the French Embassy in Beijing

In 2022, China became the world's second largest exporter of automobiles, overtaking Germany. This symbolic turnaround raises questions about China's ability to become the future dominant player in the global automotive industry. While China has been the world's largest automotive market and producer since 2009, it is now seeking to internationalise its industry. It has a major advantage with its competitive new energy vehicles (NEVs), developed over the last decade thanks to a proactive industrial policy. Now well established in

the domestic market, Chinese NEV manufacturers are expanding internationally without major obstacles and aim to meet the growing need for low-carbon mobility. At the same time, foreign manufacturers are struggling to establish themselves on the Chinese market and are facing increased Chinese competition in their traditional markets.

The Japanese automotive industry at a crossroads

Raphaël Keller, Minister Counsellor for Economic Affairs and Head of the Regional Economic Department (Japan-Korea) in Tokyo

The Japanese automotive sector (the third largest in the world) is fully committed to the energy transition. Pioneers in electrification at the turn of the millennium through hybrid vehicles, Japanese manufacturers have nevertheless lagged behind in the transformation of their ranges. In order to meet the challenge of carbon neutrality by 2050, the Japanese government wants to accelerate the process. The manufacturers are in tune with this and are multiplying their announcements on battery electric vehicles and hydrogen vehicles. Many challenges remain for the decarbonisation of the sector, representing as many opportunities for cooperation between France and Japan.

The United States and the "Tesla model": can financial markets govern the transition?

Bernard Jullien, Bordeaux Economic Sciences

The United States can represent, in the automotive field, the two sides of financialisation seen in its competitive-complementary relationship with industrial, employment and innovation dynamics. Indeed, management focused on shareholder value, which was imposed in the Big 3 which became the Big 2, was – for good reason – incriminated to explain the disasters that occurred in 2009-2010 (Sauviat, 2009), from which the American car industry only emerged through massive state intervention (Jullien, Lung, 2011). On the other hand, Tesla seems to have benefited – and the American car industry with it – from the efficiency of the markets for technological values in order to establish an innovative model and impose – without the state having to intervene – a desirable scenario of creative destruction (Mougenot, 2015). The markets have, in fact, long accepted that Tesla should lose a lot of money and thus have the time required for the company to reach the necessary technological, industrial and commercial maturity

and, ultimately, profitability. However, after three profitable years – from 2020 to 2022 – in a small, fast-growing global electric vehicle market that it dominated by selling very expensive vehicles, Tesla is facing the question of commoditisation. Indeed, the EV market is no longer infinitesimal and is set to become the core of the automotive market. In this context, as the market becomes a mass market, the advantages of the pioneer are waning and the intensity of competition is increasing. By drastically lowering its prices, Tesla is precipitating this change for which it is not sure it is best equipped. The financial markets may have been wrong.

Transforming our future into a sustainable future: planning for the automotive transition

Didier Sepulchre de Condé, Mechanical industry

The automotive industry is in turmoil, firstly because of the economic situation, with a market deeply affected by Covid, shortages of materials and components and disoriented customers; and secondly because of the structural situation, with the forced transition to electrification.

This double crisis is a high risk for the automotive industry, but the alignment of the actions of all the stakeholders should allow the French sector to remain in the race for the automobile of the future.

Reconciling ecological transition, competitiveness and sovereignty: the challenges of tomorrow's vehicle

Bringing France into the second automotive revolution

Luc Chatel, Former Minister and Chairman of the Automotive Industry Platform (PFA)

The automotive industry is facing a historic transformation that is shaking up the sector's value chain like never before. Manufacturers are fully committed to this transformation, to the extent that the automotive sector, through the weight of its R&D investments, now appears to be the leading driver of innovation in France and in Europe.

However, the acceleration of European regulations, through the "Fit for 55" package, which makes 100% electric the only technology from 2035 onwards, implies risks for the industrial fabric and for employment, especially against the backdrop of an unprecedented downturn in a market impacted by a series of crises.

Facing these risks by transforming them into opportunities implies three levers that industrialists are already mobilising: regaining our technological sovereignty, reducing our risks of dependence and making the battle for competitiveness the major lever of a new industrial ambition.

Now, with regard to its decarbonised electricity, which constitutes a real comparative advantage, France is more than ever legitimate to position itself as the priority territory for investments linked to the electrification of mobility and to make it a lever for reindustrialisation.

The European Union and the carbon neutrality of mobility

Dominique Auverlot, Member of the General Inspectorate for the Environment and Sustainable Development (IGEDD)

In the wake of the Paris Agreement, Ursula von der Leyen, President of the European Commission, has made it a top priority to make Europe the first carbon-neutral continent by 2050. Combined with the desire to reduce local pollution, this objective has led the Commission to plan for the cessation of the sale of buses, passenger cars and heavy goods vehicles that emit greenhouse gases in 2030, 2035 and (90%) 2040 respectively, while tightening up emission standards for combustion engines. The corresponding texts, adopted or under discussion, reflect this desirable ambition for the survival of our planet. However, they foreshadow an unprecedented industrial transformation of the entire automotive sector. This transformation will be all the more successful if a dialogue of trust exists, or rather is re-established, between the players in the sector, the Member States, the Commission and the European Parliament, so that the draft regulations under discussion and their future revisions, which will have to be carried out as often as necessary, lead to pragmatic decisions that take into account both the urgency of the climate and the ability of the industrial players to evolve. Furthermore, it is necessary that various social and industrial measures to support not only the companies, but also the men and women and the territories involved, are effectively implemented.

The four paradoxes of the ecological transition of the European car industry

Alois Kirchner, Former Director of Cabinet of the Minister for Industry

The energy transition in the automotive sector is essential for achieving French and European climate objectives. However, the actions implemented come up against four paradoxes, which must be overcome if this transition is to succeed:

- the regulation on the reduction of CO₂ emissions from the tank to the wheel, to the exclusion of other sources which now represent the majority of emissions from new vehicles;
- the steering of vehicle traffic restrictions based on Crit'air stickers, leading to the prohibition of access to certain cities for vehicles that are more virtuous than others that are still allowed to enter;
- the inability to implement policies to support the production of vehicles on European soil that are sufficiently powerful to halt the fall in associated jobs; a situation that benefits production sites that are not subject to the same environmental standards;

- and the rising price of "green" vehicles, leading to a slowdown in the renewal of the fleet and the maintenance of a high level of pollution and carbon emissions.

Making a success of the battery Airbus

Interview with **Yann Vincent**, DG Automotive Cells Company, and **Matthieu Hubert**, Director of Public Affairs at ACC

The carbon adjustment mechanism at borders: a way to restore the level playing field?

Claude Cham, President of the FIEV (Fédération des Industries des Équipements pour Véhicules) and President of SAS EQUIP'AUTO

The Carbon Adjustment Mechanism at the borders (MACF) was proposed by the Commission to prevent Europe, which has put in place, as part of its objective of carbon neutrality in 2050, a pricing system for the carbon content of its products, from being penalised with regard to production in non-European countries that do not have the same ambitions as Europe.

This MACF concept may seem justified and virtuous. However, in its current state of content and timetable for implementation, it presents serious risks with counter-productive effects, both for the competitiveness of European industry and for the environment, insofar as it may encourage various "carbon leakage" mechanisms.

The FIEV therefore considers it essential that the European institutions postpone the date of application of the MACF and calls on them to carry out a broad impact assessment and make the necessary changes to the current draft regulation.

The complexity of this mechanism and the lack of visibility on its effects should also encourage the introduction of a review clause.

Hydrogen, a major asset for decarbonising heavy or intensive mobility

Philippe Boucly, President of France Hydrogène

Faced with climate change, which is becoming increasingly frequent and violent, hydrogen appears to be one of the possible solutions, particularly for heavy or intensive mobility. Within the framework of the National Strategy published in September 2020, the French players are getting organised. The first vehicle deployments (buses, refuse collection vehicles, lorries, coaches) are being set up under the impetus of local authorities and operators. Original solutions, such as all-inclusive mobility offers, are being proposed. With its strengths (vehicle manufacturers, equipment manufacturers, excellent research centres), the sector is accelerating and changing scale. Efforts to reduce costs and adapt regulations to this new energy vector, hydrogen, must be continued to enable France to remain among the leading nations in the development of hydrogen mobility. The review of the hydrogen strategy currently underway must be an opportunity to pursue the two axes defined in September 2020: decarbonisation of industry and, at the same time, that of heavy or intensive mobility. This will help maintain a strong mobility

industry in France that creates jobs and value in the regions and contributes to the decarbonisation of a sector that emits a lot of greenhouse gases.

Vehicles of tomorrow or mobility of tomorrow?

Does the small city car still have a future?

Vincent Frigant, University Professor at the Bordeaux Sciences Economiques Laboratory (BxSE, CNRS, UMR 6060) at the University of Bordeaux, and **Martin Paquette**, Doctoral student in economics at BxSE, CNRS, UMR 6060, University of Bordeaux

Generalist manufacturers have decided to eliminate the small city car from their range. However, although this choice seems to be based on technical and profitability constraints, it is a relatively risky strategic move from a competitive perspective and goes against societal expectations.

Robotics and artificial intelligence at the service of the automobile

Arnaud de La Fortelle, Heex Technologies (CTO) and Mines Paris – PSL (associate professor)

The automotive industry must reinvent itself in the context of the transformation of mobility, which is accompanied by a very significant evolution of transport systems. Indeed, information is at the heart of the intelligent transport systems that are being deployed: so how should the car evolve to be able to take its full place?

In this article, we would like to shed some technical light on the transformations underway. First of all, we will discuss connectivity: the car is integrated into the great system that is the Internet of Things, where it produces as well as consumes a lot of information. Secondly, we will look at robotisation, the autonomisation of driving: this is a considerable change which involves the management of considerable volumes of data and their processing by artificial intelligence. Finally, the overall picture is one of intelligence: that of our societies, which have to overcome considerable challenges, and, hopefully, that of the systems we are going to deploy to meet them, within which the car should retain a very important place.

The automotive industry in the energy transition

Jean-Marie Robert, National Secretary CFDT FGMM

France needs to have an industry of small electrically powered vehicles to get out of the rut and reconcile ecological, social and employment issues in the regions. With more than 100,000 fewer jobs over the last fifteen years, the French automotive industry is the one that has lost the most jobs in Europe. The CFDT FGMM calls for responsible and assumed management of jobs and skills for the next ten years. We are working for the holding of national general meetings of the sector with manufacturers, equipment suppliers and subcontractors and the organisation of regional social conferences with companies in order

to anticipate the transformations to be carried out in addition to the existing measures. This will also require a redefinition of the industrial geographical areas and international trade, which will have to take into account the notion of sustainability in the import and export of parts, components and assembled vehicles. Our relationship with the automobile is being reexamined. The evolution of the engine mix with the end of internal combustion engines, the transition from the economy of car ownership to that of car use and the mutation of the concept of mobility, all of this obliges us to make this transition a success in a fair way for all employees of the automobile industry.

Miscellany

Electrical sobriety, a justified concern or a questionable alibi for a governance failure?

Richard Lavergne, General Council for the Economy

The call to practice energy sobriety is obviously desirable in times of crisis, but, as far as electricity is concerned, sobriety as a sustainable way of life can be perceived as resignation in the face of a failing state or as a distrust in human genius, innovation and scientific and technical progress. Some considerations are proposed in this article to illustrate this issue and to reveal the ambiguities of an apparently simple concept.

Economic impact and regulation of furnished tourist accommodation

Romain Priol and **Christophe Strobel**, Sub-Directorate of Tourism (SDT) – General Directorate of Enterprises (DGE)

The market for seasonal accommodation offered by individuals via platforms appeared in the early 2010s and has continued to develop and structure itself to become a key player in the tourist accommodation sector. Article D. 324-1 of the French Tourism Code defines it as the rental of a furnished villa, flat or studio, for the exclusive use of the tenant, offered

for rent to a visiting clientele, who stay there for a day, week or month, and who do not take up residence there. Currently, nearly 20% of seasonal overnight stays in France are in furnished tourist accommodation rented by a private individual. The French market has generated nearly €3.8 billion, i.e. about one fifth of the European market, which represents nearly €20 billion. The rapid growth of these new types of accommodation can be explained by changes in tourist behaviour and new expectations of customers seeking a more autonomous and independent trip. However, the growth in self-catering accommodation is a source of concern, particularly for local communities who are faced with what they perceive as "over-tourism" or attrition from permanent accommodation. Local politicians and individuals are concerned about the scarcity of (long-term) residential supply, and even of amenities and "neighbourhood life", as well as an increase in property prices, making access to the traditional rental market difficult, especially for the most precarious populations. In this context, regulations have been developed by the public authorities, with the aim of regulating the furnished tourist accommodation sector and facilitating their control through the exchange of information between rental platforms and local authorities. However, these normative developments raise difficulties in harmonising and rationalising the sharing of data relating to furnished tourist accommodation. These issues were highlighted during an experiment conducted by the Directorate General for Enterprise (DGE) in 2022 to test the solution of a digital application for exchanges between rental platforms for furnished accommodation and local authorities. The project has shed light on the need to centralise both quantitative and qualitative information on the rental of furnished accommodation. In the broadest sense, this context invites a better evaluation of the supply of furnished tourist accommodation with a view to the adoption of dynamic, effective and sustainable sectoral regulations.

Issue editors :

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