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European battery regulation: an exemplary step forward in more ways than one

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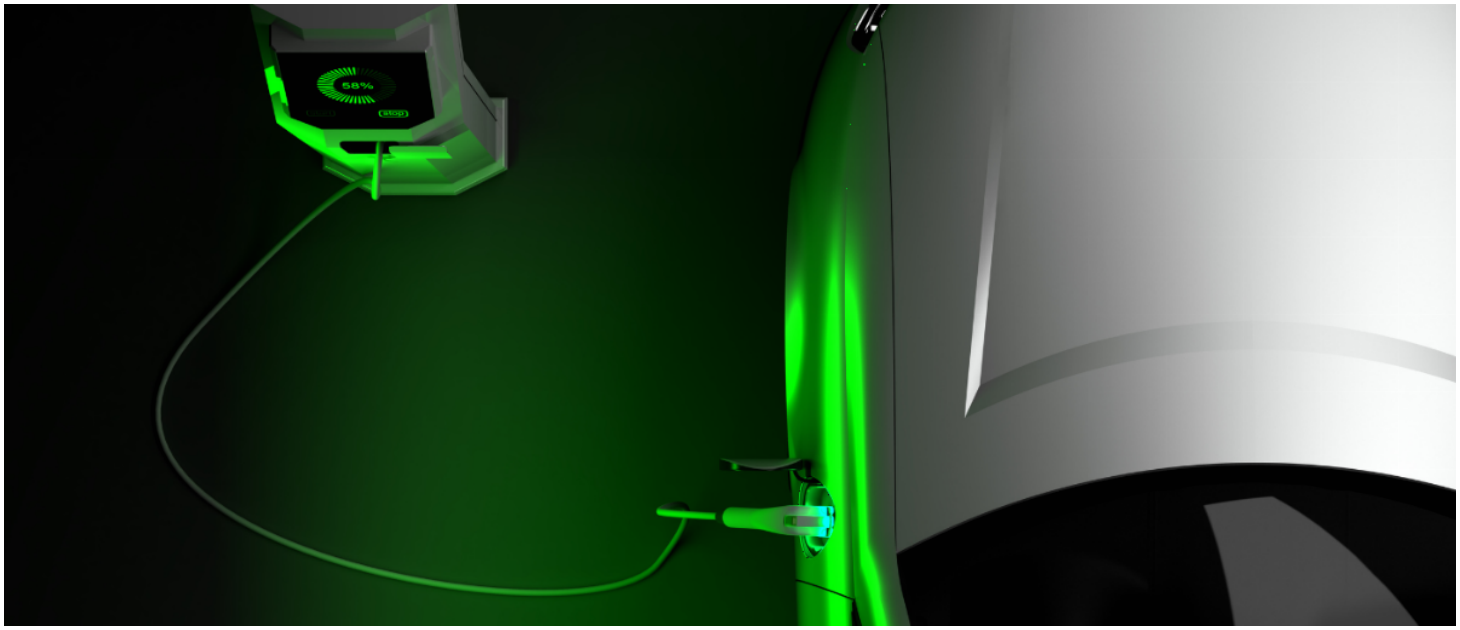

The European Union has recently adopted a regulation to make batteries “greener”, particularly those used for electric vehicles. Although European production of these batteries is currently very low compared to other regions of the world, the sector is strategic for the future of the European industry, both in terms of international competition and environmental requirements. What are the objectives for this “battery regulation” and in what ways does it represent a potentially significant step forward for Europe

In December 2022, a key instrument to enable the transition to low-carbon transport and to achieve the EU’s “Fit for 55” package of climate objectives took shape through the revision of the “battery regulation” on batteries and accumulators. The structure and ambitions of this regulatory tool must now be implemented in practical terms through delegated action, particularly regarding the scope and standardized methods for calculating the impact data to be provided by manufacturers, the recyclability targets, and the incorporation of recycled materials to be achieved from 2030 onwards in line with the regulation.

The regulation is remarkable in more ways than one, going beyond the scope of its application (batteries) in the strictest sense. It could even provide a benchmark for future texts seeking to regulate other manufactured products to integrate environmental issues throughout their life cycles. It also provides a basis for producing obligatory data on which other regulations, tax systems or labelling systems could be based at both national and European levels to deal with related issues of material or energy efficiency.

Why does this regulation constitute a breakthrough and a positive step forward?

Firstly, it concerns a very new product that is undergoing technological and industrial development. This product is essential for the energy transition that should lead us to carbon neutrality, but it can only fulfil this role satisfactorily if its design, manufacture, usage, and end-of-life do not result in unacceptable or non-virtuous environmental, social, or industrial impacts. The legislator and all stakeholders have, for once, chosen to anticipate the regulatory framework at an early stage of technological and market development, so that it accompanies and guides scientific research (new types of chemistry), improvements in manufacturing processes, the reduction of greenhouse gas emissions during production, and innovative uses in terms of business models (second life, etc.) or the cycling of raw materials at the end of their life. The regulation thus defines an eco-design framework that will provide visibility on the areas of competition and value in future, according to a rationale that integrates the vision of circularity in the long term. The main purpose of the regulatory exercise is no longer to correct the negative impacts of an industrial activity or a product after it has become established on the market, but to guide, accompany and even secure development in predetermined directions, by setting milestones, limitations, and performance objectives in advance.

The regulation is also innovatory in terms of its scope. The remit of the requirements applies to the entire battery life cycle, from the origin of the materials and ores used (battery passport that meets traceability requirements), a product’s carbon footprint according to its production origin and the nature of the materials used, and the integration of sustainability requirements, through to the obligation to incorporate recycled materials in clearly-defined proportions that increase over time, along with transparency obligations regarding repair and reuse possibilities (sharing of digital monitoring data on the health status of products during their lifetime, repair procedures). The demand for the exemplarity and exhaustiveness of the scope was jointly supported (1) by civil society, which demanded greater transparency on constituent origin and manufacturing conditions, (2) by European industry, which sought for its environmental and social performance (due to a more demanding regulatory framework) in comparison to the rest of the world to be recognized and valued, and (3) by public sector decision-makers, particularly in Europe, who understood that the decarbonization pathway they had constructed would only be accepted and credible if the externalities and consequences over the entire life cycles of promoted technologies were addressed by regulatory constraints. In other words, most stakeholders are now satisfied with the text, which provides a framework and security for the development of this new industry. Another notable and somewhat rare feature is the intent to cover a broad spectrum of applications (in this case, modes of transport ranging from bicycles to commercial vehicles) with similar levels of requirements and the same rationale.

Beyond these environmental aspects, this new regulation also defines an industrial ambition: that of establishing a circular economy around the manufacture, usage, and end-of-life recycling of different types of electric vehicles in Europe; the targets for the incorporation of recycled material thus assume that almost all second life materials generated by the European end-of-life battery recycling sector remain in Europe, and are reused for the manufacture of new batteries (conservation of the technical value of materials without “decycling”–the recycling of materials with a lower value–which presumes the development of new innovative, high-performance and high-capacity recycling processes to be developed over the coming decade). Indeed, aware that the supply of materials, particularly critical and strategic materials (lithium, nickel, cobalt, and copper) is a major industrial issue (the risks of shortages or strong price pressure between now and 2035 have been well documented by the International Energy Agency and Goldman Sachs) and a condition for the success of the transition, Europe must establish the principles of a circular economy

around these materials to gradually ensure its geopolitical independence (the challenge is not to move from a structural dependence on fossil fuels to one linked to strategic metals–lessons have been learned from the crises). The question of sovereignty and the resilience of a European industry that is a pioneer in the technological transition also underlies the regulatory exercise in question.

Finally, foreign actors, particularly those from Asia as they are the main suppliers of batteries in 2022, will have to comply with the export requirements brought in by this regulation. In this sense, it is fully in line with a coherent–or defensive, depending on one's point of view–industrial policy, to encourage the nascent European battery industry. While the main aim of battery passports is to clarify production conditions and protect social/environmental rights, the requirement for transparency and standardized reporting on these conditions and on the carbon footprint opens up a new field, by providing a framework that could lead to labelling, integration into the European Carbon Border Adjustment Mechanism (batteries are currently exempt) or to more protectionist exclusion measures (possibly in response to the implementation of the Inflation Reduction Act, IRA, in the US).

In addition, this new regulation also contains the foundations for other levers and regulatory steps that are also necessary for the success of the transition. Indeed, the success of the transition towards vehicle electrification depends on their increased frugality and efficiency (in terms of size and mass) to truly address the conditions of economic accessibility and sustainability from a resource perspective. This regulation, through the requirement to report on the size and carbon footprint of batteries, could constitute an excellent starting point and a framework of obligatory data that can regulate the energy efficiency of vehicles, on which subject the Commission will decide in 2023. For its part, IDDRI will soon make proposals in this respect.

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