

# Batteries and critical minerals working group

Working group – alinnea 2026

## Introduction and objectives

Industrial decarbonization is one of the pillars of Europe's climate and economic transformation. In Spain, where industry accounts for almost one fifth of total greenhouse gas emissions, the electrification of transport represents one of the greatest industrial and climate opportunities. As the second largest automobile manufacturer in Europe, the country is at a decisive moment: to move rapidly and in a coordinated manner towards zero-emission mobility or risk losing competitiveness to other European and global industrial hubs. The availability of batteries and critical minerals —such as lithium, nickel, manganese, cobalt, graphite or rare earths— is an essential component to ensure an innovative, robust automotive industry aligned with the European Union's climate objectives.

Despite this strategic opportunity, Spain still lacks an integrated framework that operationally articulates domestic battery production, secure and sustainable access to critical raw materials, and coordination between industry, public administrations, social actors and the financial sector. In addition, the geographic concentration of these materials, their geopolitical relevance, and increasing regulatory requirements in terms of sustainability, traceability and recycled content increase the urgency of establishing a shared strategic vision and effective public-private governance mechanisms to strengthen the country's industrial autonomy.

Over the past two years, Alinnea's working groups —particularly those focused on the challenges of the electric vehicle sector and the advancement of industrial decarbonization— have repeatedly identified a critical bottleneck: insufficient domestic battery production and limited capacity to ensure a stable and responsible supply of strategic minerals. Members of these groups have agreed that this is an area where Alinnea can provide added value by promoting a structured, multi-stakeholder, evidence-based dialogue aimed at identifying appropriate incentives, improving the regulatory framework, facilitating institutional coordination and strengthening the financial mechanisms needed to move forward.

The new Working Group on Batteries and Critical Minerals is framed within this ambition and will be developed in line with the current European regulatory framework and strategies, in particular the EU Critical Raw Materials Act, the new battery strategy known as the Battery Booster Strategy and the Industrial Accelerator Act.

Likewise, the group will take into account the main initiatives promoted at the national level, such as the Spain Auto Plan 2030 and the Critical Raw Materials Action Plan 2025–2029, proposed by the Ministry for the Ecological Transition and the Demographic Challenge.

In the same way, specific inputs and European best practices from countries such as Germany, France and Italy, among others, will be incorporated, with which Alinnea will exchange information through organizations such as Agora, IDDRI, ECCO and other specialized think tanks.

The Working Group on Batteries and Critical Minerals will enable Spain to:

- Strengthen its strategic autonomy.
- Align regulation, incentives and industrial policies.
- Integrate the financial dimension into the development of sustainable value chains.
- Build international partnerships to ensure responsible supply.
- Inform public action through evidence and collective reflection.

## Objective

The objective is to strengthen Spain's industrial autonomy in the battery and critical minerals value chain through the definition of a roadmap that reinforces the supply of critical raw materials and strengthens Spain's battery production capacity, overcoming the main barriers related to access to minerals, manufacturing and competitiveness, and integrating European and international best practices that enable progress towards a competitive and resilient electric mobility value chain.

## Working group format

The working group will be composed of stakeholders from public administration, industry, energy companies, financial institutions, trade unions, environmental organizations and academia.

The sessions will take place in person at different venues of IE University in Madrid. Exceptionally, virtual participation will be facilitated if necessary. The planned dates for each session are detailed below, and any changes will be communicated in advance.

- First meeting: April 21 (9:30–13:30)
- Second meeting: May 21 (9:30–13:30)
- Third meeting: June 15 (9:30–13:30)

The sessions are designed as multi-stakeholder dialogues under Chatham House rules. This means that participants may share the content and conclusions of the discussions, but may not attribute comments or positions to specific individuals.

Participation in the Working Group does not necessarily imply endorsement or commitment to the proposals that may be included in the recommendations report to be developed as a result of the dialogues.

## Session content

The topics of interest identified by **alinnea** as a basis for the work are presented below. However, the specific content of each session may be adjusted depending on the priorities identified by the participants of the group, as deemed appropriate.

### 1. First dialogue: Industrial competitiveness and strategic autonomy in the battery value chain

¿ Can Spain consolidate a competitive electric vehicle and battery value chain in the new European context of independence and strengthened industrial policy?

This first dialogue will analyse Spain's positioning within the electric vehicle and battery value chain, in a context marked by the push for "made in Europe", global competition and the strengthening of European policy.

The main industrial, regulatory and financial gaps that condition the consolidation of a solid productive base will be examined, as well as the coherence between industrial planning, European regulation and national strategy.

- **The Spain Auto Plan 2030 and national industrial policy**

The objectives of the Auto Plan and its alignment with the European battery and electric mobility strategy will be analysed. Does the current framework respond to the real needs of the value chain? Are there inconsistencies or regulatory gaps? What specific recommendations for each actor in the chain derive from this analysis.

- **Industrial gaps in the value chain**

Spain's position in the different stages of the chain (mining, refining, cells, assembly and recycling) will be examined, identifying external dependencies and comparisons with other Member States and global actors.

- **Strategic investments: gigafactories**

The status of major industrial investments in Spain (Zaragoza, Extremadura and Sagunto), their level of progress, associated risks and structural needs for their consolidation will be addressed.

- **Financial framework and public support**

The impact of the proposals presented will be discussed:

- Local content requirements under the "made in Europe" framework.
- European State aid framework (CISAF).
- National instruments: Spain Crece Fund, ICO and ENISA.

Is the current financial framework sufficient and what additional measures would be necessary to ensure competitiveness vis-à-vis other global actors?

- **Regulatory challenges**

Regulatory changes, inconsistencies and the impact of instruments such as ETS and CBAM on the value chain will be analysed. Proposals to improve coordination between the State and Autonomous Communities in permitting, incentives and industrial planning will also be examined.

## 2. Second dialogue: Mining, refining and strategic agreements

Can Europe guarantee sustainable and competitive access to critical raw materials without compromising social acceptance, environmental standards and industrial competitiveness?

This second dialogue will focus on access to strategic minerals such as lithium, nickel or cobalt, addressing both the internal dimension (European mining and refining) and the external one (trade agreements and raw materials diplomacy). In a context of increasing geopolitical competition for resources and regulatory pressure, it will analyse how European strategic autonomy can be built on a solid industrial base with social legitimacy.

- **State of play**

- **Current access to critical minerals**

The current situation of the supply of critical raw materials for the battery and electric vehicle industry will be analysed, characterised by a high dependence on third countries in key stages such as extraction and refining. The degree of supply concentration, the risks associated with disruptions or geopolitical tensions, and the specific exposure of the Spanish industry will be examined.

- **New projects and Important Projects of Common European Interest (IPCEI)**  
The role of new mining operations in European and Spanish territory will be discussed, as well as their integration into strategic instruments such as IPCEIs. Are these instruments accelerating the development of extraction and processing capacities? Is there sufficient coordination between Member States to avoid duplication or bottlenecks?
- **Social license to operate and Just Transition approach**  
The social dimension of strategic mining will be addressed. The opening of new operations requires reconciling industrial autonomy with strict environmental standards and social acceptance in the territories.

#### **Mining value chain**

- **Review of the Spain Auto Plan 2030 objectives in relation to mining and refining**  
The integration of mining and refining within the industrial objectives of the Spain Auto Plan 2030 will be examined. Is there a coherent strategy linking extraction, processing and battery manufacturing? Or is there a risk of developing gigafactories without a solid base in supply and processing of materials?
- **Refining capacity in the EU**  
One of the main bottlenecks of European strategic autonomy will be analysed: the limited capacity for refining and processing critical minerals within the Union. Although geological resources may exist within European territory, external dependence in intermediate stages remains high.
- **Industrial development of recycling.**  
The role of recycling as a complementary source of supply of critical raw materials and Spain's potential in this new industrial development will be discussed.
- **Agreements with third countries**  
The geopolitical dimension of supply will be analysed, in a context of increasing international competition for access to strategic resources, with particular attention to the different Memoranda of Understanding (MoUs) signed by the European Union and third countries (such as Argentina and Chile), as well as the recent EU-MERCOSUR and EU-India agreements, and relations with China.

### **3. Third dialogue: Technology, standardisation and employment in the battery industry**

Is the Spanish industry prepared to adapt to the rapid technological evolution of the sector without generating stranded assets or loss of industrial employment?

The third dialogue will address the technological and labour vectors that shape the future competitiveness of the battery industry in Spain. In an environment marked by accelerated innovation –new chemistries, new designs, advances in electronics and digitalisation– investment decisions must be properly grounded. At the same time, the transformation of the sector poses structural challenges in terms of employment, skills and territorial development.

- **Technological evolution and risk of stranded assets**

The expected evolution of battery technology and the risk of premature obsolescence of current investments will be analysed.

Is there a risk that recent investments in certain chemistries, assembly lines or industrial capacities become outdated if the market shifts towards new solutions? How should industrial projects be designed to maintain technological flexibility?

The debate will focus on how to minimise the risk of stranded assets, ensuring that current decisions incorporate realistic technological scenarios and a strategy for gradual upgrading

- **Technological standardisation and new functionalities**

The standardisation of batteries in the EU will be discussed, as well as how to move forward towards common standards for certain components, formats or battery management.

- **Vehicle-to-Grid (V2G) and bidirectional batteries**

The potential of bidirectional batteries and their integration with the electricity system will be analysed. V2G technology allows electric vehicles not only to consume energy but also to return it to the grid, acting as storage. Is the regulatory framework ready to fully enable this functionality?

#### **Employment and training**

- **Sector training needs.**

The technological transformation of the sector requires new skills, so it will be analysed whether the training system is aligned with these needs.

- **Existing programmes and qualification gaps**

Current programmes in vocational training, reskilling and technical specialisation will be reviewed, identifying possible gaps between training supply and industrial demand.

- **Local employment and territorial development**

The territorial dimension of employment associated with the battery industry will be addressed. Are new investments generating qualified local employment or is there a risk of importing external talent without developing domestic capabilities? How can it be ensured that gigafactories and associated projects contribute to the sustainable economic development of their host regions?

- **International best practices.**

International experiences in technological adaptation, standardisation and training policies linked to the battery industry will be analysed

## **Results**

The final outcome will compile the main conclusions and lessons learned from the dialogue process sessions, consolidating a set of strategic recommendations aimed at:

- Strengthening the industrial competitiveness of the sector.
- Promoting the security of supply of critical raw materials.
- Improving regulatory and financial coherence.
- Anticipating technological and labour risks.

This report will be publicly presented and will be accompanied by a specific advocacy plan to disseminate its results to entities, organisations and stakeholders in the decarbonisation sector, particularly in relation to the identified bottlenecks and proposed recommendations.

**alinnea**

Part of IE Foundation  
Powered by IE University  
Supported by European Climate Foundation (ECF)

Paseo de la Castellana, 259E, 28046. Madrid