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Becoming the world's second largest battery producer

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The European Commission has designated battery development and production as a strategic imperative for Europe. Increasing sustainable battery production in the European Union will make a significant contribution to the clean energy transition, and is crucial to the future competitiveness of the EU's automotive sector.

The topic is highly relevant to the EU's role as a key industrial player and as a leader in the clean energy transition. Europe's strategic autonomy is also at stake in a context of rapid growth in demand for batteries, especially due to increased demand for electric vehicles.

Significant amounts of EU spending have been allocated to this area in recent years, an effort which is likely to continue in the future.

The European Court of Auditors is starting work on an audit to find out whether the Commission has been effective in developing a globally competitive and sustainable value chain for batteries in the EU.

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Battery development and production: a strategic imperative for Europe

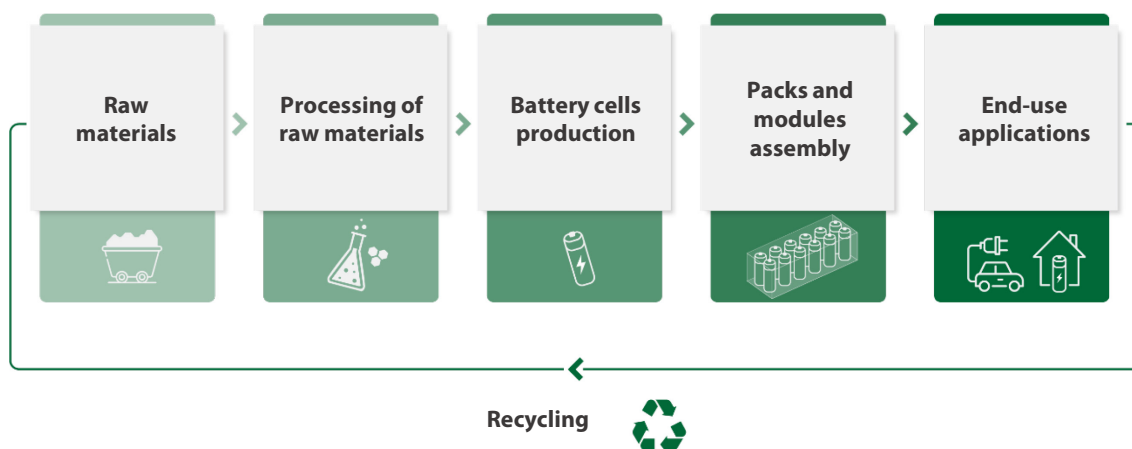
Transport accounts for around a quarter of the EU's greenhouse gas emissions. If the EU is to achieve climate neutrality, it will need to reduce its transport-related emissions by 90 % by 2050. Among other measures, meeting this goal will require a massive uptake of zero and low-emission vehicles: 13 million cars by 2025¹, 30 million by 2030², and potentially a ban on sales of new combustion engine vehicles from 2035³.

In this context, the Commission has designated battery development and production as a strategic imperative for Europe. Investing in battery production will support the EU's efforts to achieve a clean energy transition, including by allowing intermittent renewable energy to be stored for later use. Advances in battery technology and production will be a key contributor to the competitiveness of the EU's automotive sector⁴. Investments in the EU's battery value chain will also address Europe's current strategic dependence on foreign batteries.

In 2018, only about 3 % of the global production capacity of lithium-ion battery cells was located in the EU. About 66 % of production capacity was in China, and 20 % was in South Korea, Japan and other Asian countries⁵. European production reached 44 GWh in 2020 (6 % of global capacity) and is expected to increase to 400 GWh by 2025⁶, with the EU becoming the world's second largest battery cell producer after China⁷, involving 800 000 jobs and generating around €250 billion per year in terms of economic activity⁸.

Stable access to raw materials is crucial to sustain the rapid growth of battery production. These materials, such as lithium, cobalt and nickel, are not produced in the EU in quantities sufficient to cover the large expected increase in future demand and to cover any supply shortage risk (currently exacerbated by the ongoing war in Ukraine). This will have an adverse impact on the production of batteries and on the EU's strategic autonomy. The Commission has tried to address these risks, and has published an Action Plan on Critical Raw Materials⁹, focusing on increasing circularity and sustainable sourcing, diversifying supply from non-EU countries, and building resilient value chains.

Picture – The battery value chain



Source: ECA

Policy and legal framework

In 2017, the Commission highlighted the need for a specific policy framework for batteries. It included batteries in the EU's renewed [industrial policy strategy](#). In 2018, it published a [Strategic Action Plan on Batteries](#).

Directive 2006/66/EC on batteries and waste batteries, which sets out rules for the placing on the market, collection, treatment, recycling and disposal of batteries, is the only piece of EU legislation dedicated entirely to this subject. In 2020, the Commission proposed that the Directive be replaced by a [Regulation](#), currently in the process of adoption by the European Parliament and the Council.

Roles and responsibilities

Although the value chain is largely industry-led and operated by private companies, the European Commission intervened by designing a European strategy, establishing a regulatory framework, and providing financial support for research and innovation activities deemed too risky for the private sector to carry out on its own. Various Commission departments are involved in implementing these measures.

Member States must implement Directive 2006/66/EC. They may have their own national strategies for batteries, and some have opted to directly support their own battery-related industries, particularly in the framework of Important Projects of Common European Interest.

EU funding

The audit team's initial estimate is that, in the 2014-2020 period, the European Union allocated at least €1.25 billion in grants and guaranteed around €500 million in loans to projects across all stages of the battery value chain. Horizon Europe has earmarked €925 million for research and innovation support in this field in the 2021-2027 period. Milestones and targets related to batteries are also included in some national recovery and resilience plans.

Audit focus

In view of the key risks identified during the ECA's preparatory work, our audit will seek to determine whether the Commission has been effective in contributing to a globally competitive and sustainable battery value chain in the EU. To answer this, the auditors will specifically assess:

- the Commission's strategy and objectives for the EU's battery value chain and their consistency with the wider EU's strategies;
- the adequacy of intervention tools chosen by the Commission, their degree of implementation to date and, where measurable, their impact on the battery value chain;
- how the Commission (together with Member States in the case of shared management) allocated EU funding to this sector during the 2014-2020 period and what results have been achieved so far.

Our audit will cover six Member States: Germany, Spain, France, Poland, Sweden, and Portugal. We will examine 16 projects implemented in these Member States, drawing conclusions on whether they were selected and implemented in a well-coordinated fashion, and on whether they maximised the impact of EU funding.

ABOUT ECA SPECIAL REPORTS AND AUDIT PREVIEWS

The ECA's special reports set out the results of its audits of EU policies and programmes or management topics related to specific budgetary areas.

Audit previews provide information in relation to an ongoing audit task. They are based on preparatory work undertaken before the start of the audit and are intended as a source of information for those interested in the policy or programme being audited.

If you wish to contact the team in charge of this audit, please e-mail:

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- ¹ COM(2019) 640 final, *The European Green Deal*, page 10.
- ² COM(2020) 789 final, *Sustainable and Smart Mobility Strategy*, page 2.
- ³ COM(2021) 556 final, *Proposal for a regulation strengthening the CO2 emission performance standards for new passenger cars and new light commercial vehicles*, article 1.
- ⁴ Annex 2 to COM(2018) 293 final, *Strategic Action Plan on Batteries*, page 1.
- ⁵ SWD(2021) 352 final, *Strategic dependencies and capacities*.
- ⁶ SWD(2021) 307 final, *Progress on competitiveness of clean energy technologies*, page 172.
- ⁷ https://ec.europa.eu/commission/presscorner/detail/en/speech_21_1142
- ⁸ Annex 2 to COM (2018) 293 final, *Strategic Action Plan on Batteries*, page 1.
- ⁹ COM(2020) 474 final, *Critical Raw Materials Resilience: Charting a Path towards greater Security and Sustainability*.

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