



## THE ENERGY UNION FIVE YEARS ON BUILDING A GLOBALLY **COMPETITIVE BATTERIES** MANUFACTURING VALUE CHAIN IN EUROPE

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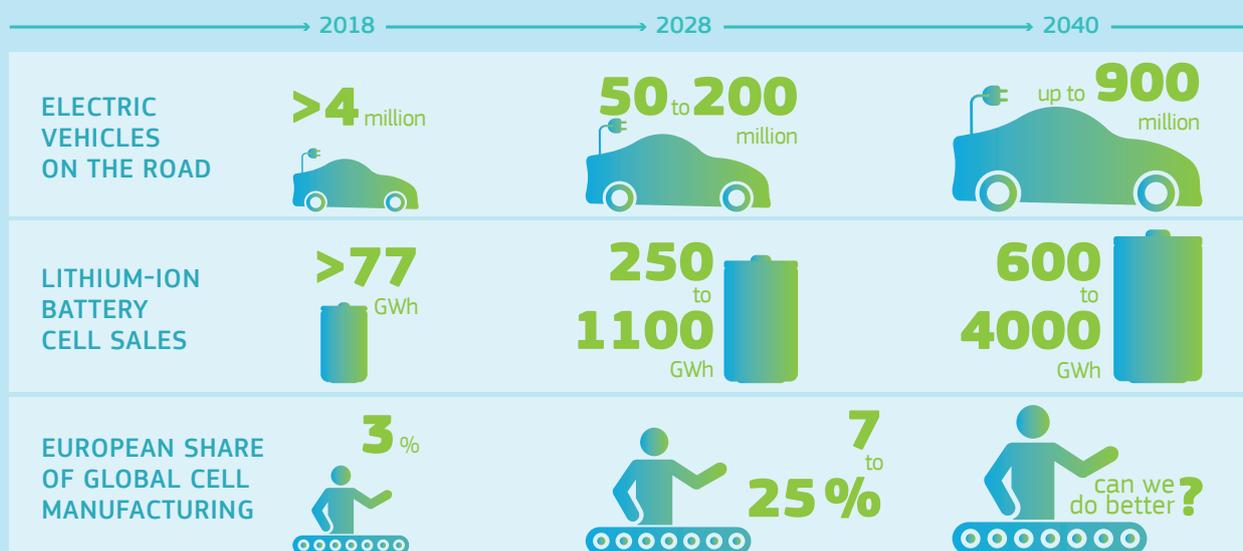
The European battery industry has been identified as a **strategic value chain** for the EU in the context of a strengthened industrial policy strategy. Batteries are a key enabling technology and will be essential for the automotive industry of the 21<sup>st</sup> century. They will play an important role in the decarbonisation of the European mobility sector and the transition towards a low carbon economy. Therefore European-produced batteries will become a key driver for the EU's industrial competitiveness.

In October 2017, the European Commission, the European Investment Bank, Member States and industry joined forces and set up **the European Battery Alliance**. It aims to create a competitive, sustainable and innovative battery ecosystem in Europe.

This has supported the emergence of an EU ecosystem of over **260 industrial and innovation actors** that cover the whole batteries value chain, facilitating business-to-business contacts and coming up with innovative project ideas. They have already announced private investments of up to **€100 billion**, covering the whole value chain.

The report on the implementation of the Commission's battery **Action Plan** shows that substantive progress has been made in building this strategic value chain in Europe.

### Supply and demand forecasts



SOURCE: JRC

## Why we need to act?



- European share of global cell manufacturing is **just 3%**, while Asia has an 85% share
- **20-30 giga-factories** for battery cells production will have to be built in Europe
- The EU battery market potential could be **€250 billion** annually from 2025 onwards, creating **3-4 million jobs**

## Progress on the Strategic Action Plan

 **Research, innovation and market development** - the EU is mobilising its support instruments covering the entire innovation cycle. The EU's Horizon 2020 programme has granted €1.34 billion to projects for energy storage on the grid and for low-carbon mobility. In 2019, the EU opened a €114 million call under the H2020 programme to fund battery projects. In 2020, a €132 million call for batteries for transport and energy will follow. In February 2019, a new European Technology & Innovation Platform “Batteries Europe” was launched to prepare a strategic agenda for European battery research with a key role for industrial stakeholders.

 **Investing in people** - batteries are a key topic for funding under the Blueprint for Sectoral Cooperation on Skills, launched under the Erasmus+ in 2018. A successful proposal is expected to be selected in summer 2019. This will lead to a 4-year project to develop a strategy addressing short and medium term skills needs throughout the battery value chain.

 **Access to sustainable battery raw materials** - the EU has been working on securing sustainable access to raw materials in the context of trade negotiations. It has also been exploring the availability of materials needed for batteries within the EU and looking into the opportunities to further develop a European circular economy, including recycling of batteries. In this context, the Commission has been evaluating how the Batteries Directive supports this objective.

 **Regional co-operation** – in October 2018, an interregional smart specialisation partnership on “Advanced materials for batteries for electromobility and stationary energy storage” was established. It aims to develop sound business investment projects to leverage private, national and EU funding. This partnership has grown rapidly and now consists of over 20 regions spread across 10 EU Member States and Norway.

 **Criteria for clean, safe, competitive and ethically produced batteries** - the EU has started developing minimum performance and sustainability requirements for batteries, building its competitiveness on a sustainable European battery sector.

## Manufacturing projects

The actions under the European Battery Alliance have brought concrete results. A number of companies and consortia are now working on manufacturing of battery materials and battery cells:

- The demonstration line built by Northvolt (with a €52.5 million loan from the EU) will start production in 2019. **Northvolt** is also teaming up with a number of industrial actors in a consortium to develop a complete battery value chain.
- The battery maker **SAFT** has announced plans for a consortium to develop and industrialize next generations of battery cells i.e. advanced lithium-ion with solid state lithium-ion technology.
- Several **German companies** together with other European partners envisage a strong partnership to produce battery cells. The objective is to deliver cells to automotive manufacturers and SMEs that are facing difficulties in sourcing battery cells for their business.
- **Siemens** is working with the entire cell manufacturing value chain on manufacturing challenges and solutions, and has recently engaged in piloting the first fully automated and digitized production lines in Europe.
- **Umicore** has announced a major investment in Poland for the production of cathode materials. The plant is due to start deliveries in late 2020. Furthermore, a new Process Competence Centre will be built in Belgium to develop and scale up high-efficiency production technologies.
- **BASF** is a strong player in the battery materials market. The company expects the market for lithium-ion batteries to grow rapidly and announced already production capabilities in Europe.
- **Solvay** is working on developing state-of-the-art electrolytes and electrode binders and separators that are needed for highly efficient batteries. The company is considering building a plant in Europe.

