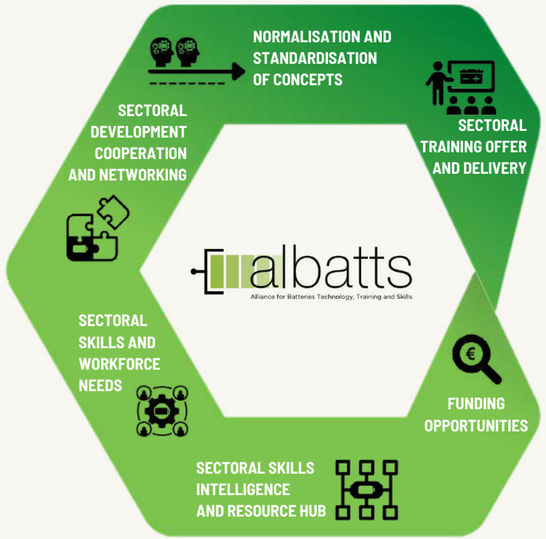
SECTORAL SKILLS INTELLIGENCE & STRATEGY FOR THE EUROPEAN BATTERY SECTOR

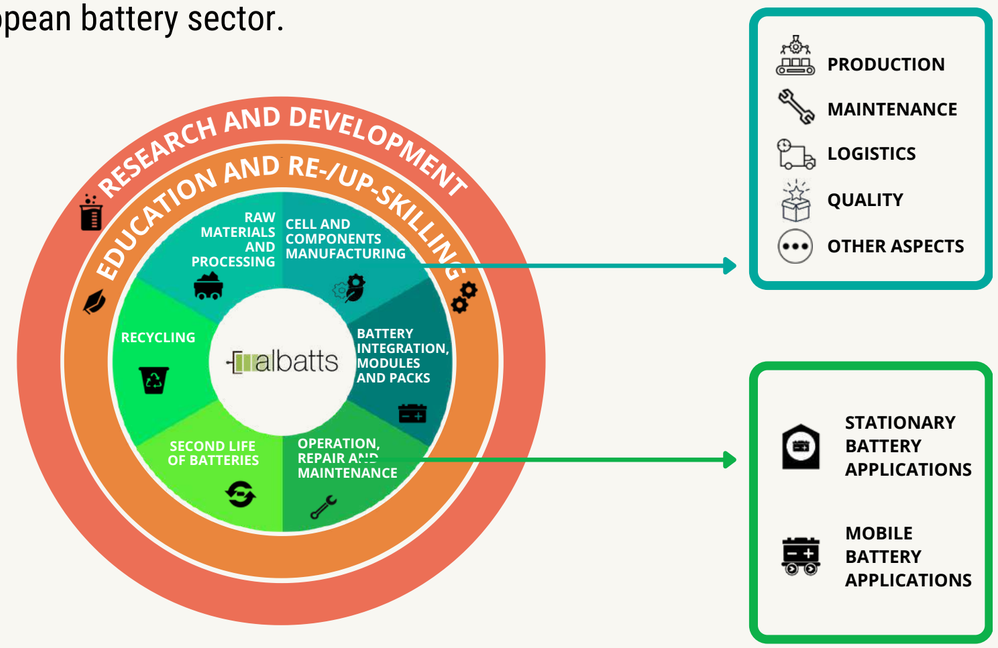
D3.10 – Sectoral Skills Intelligence and Strategy – Release 2

This is the **second** release of the sectoral skills intelligence and strategy **covering the whole European battery value chain from raw materials to recycling of batteries in terms of skills needs, job roles needs and recommendations**.



Readers will find designated actions needed in the sector to boost the overall re-/up-skilling activities as well as cooperation, information sharing and provision and many more.

The report also provides quantitative and qualitative overviews of the skills and the job roles needs per identified areas of interest consisting of the battery value chain steps, as well as specific aspects of production, quality or safety tailored to the battery production or other processes that are happening within the European battery sector.



This factsheet provides a summary of the report in what regards **LOGISTICS in cell and components manufacturing**.

INFORMATION
www.project-albatts.eu
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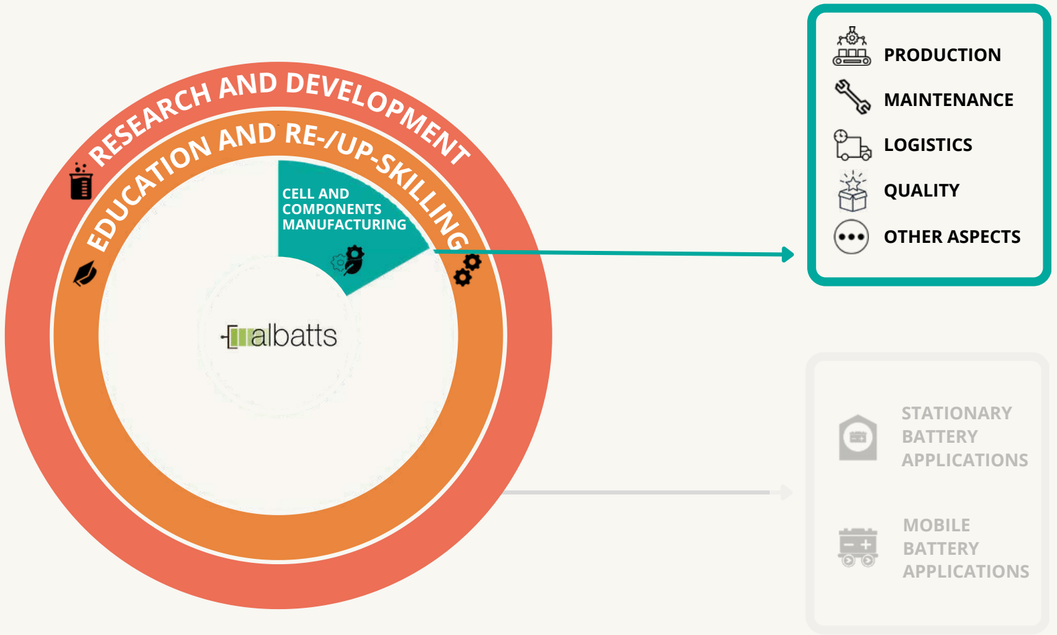
CELL AND COMPONENTS MANUFACTURING



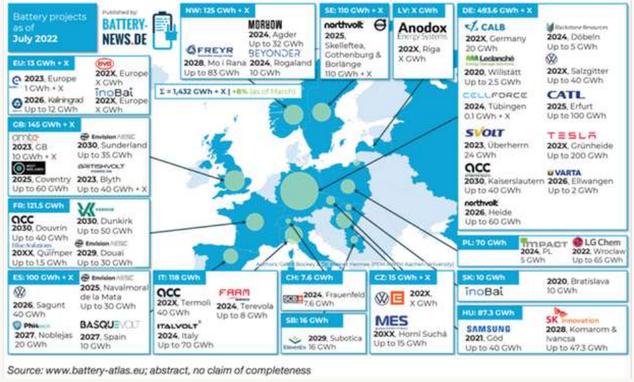
COMPONENTS & CELL MANUFACTURING step follows the raw materials and processing value chain step and concerns the manufacturing and development of different components for battery cells and the production of cells.

This factsheet describes the Gigafactory perspective. Different departments and their roles are described further below. Areas of interest covered are as follows:

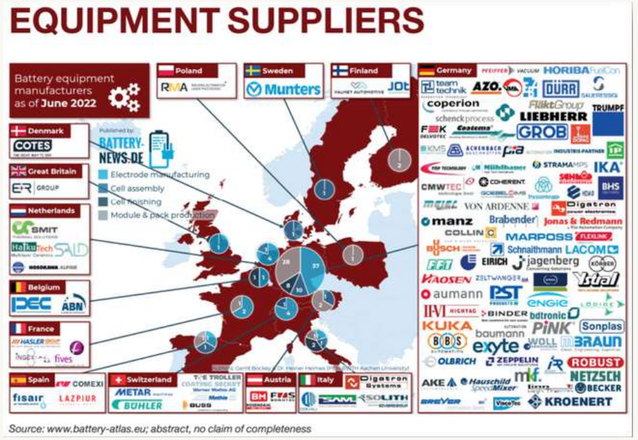
- Production and Maintenance
- Logistics
- Quality
- Other departments and Aspects, specifically: purchasing, HR, finance, sales and digitalisation

STAKEHOLDERS/COMPANIES

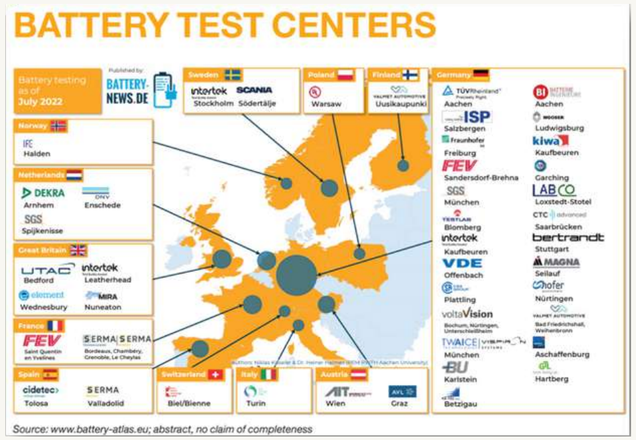
BATTERY CELL MANUFACTURERS



EQUIPMENT SUPPLIERS



BATTERY TEST CENTERS



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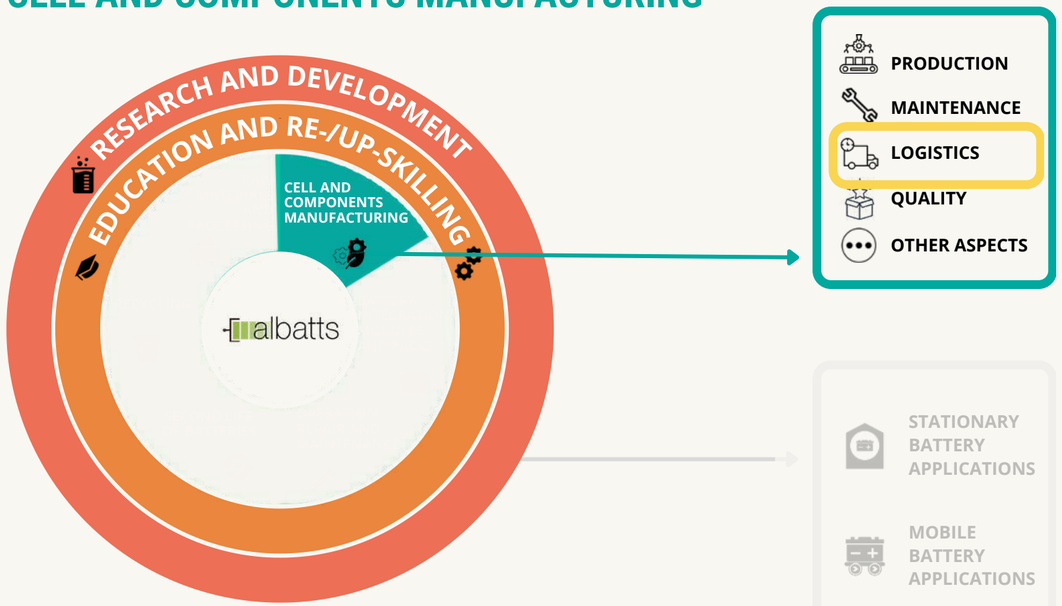
CELL AND COMPONENTS MANUFACTURING

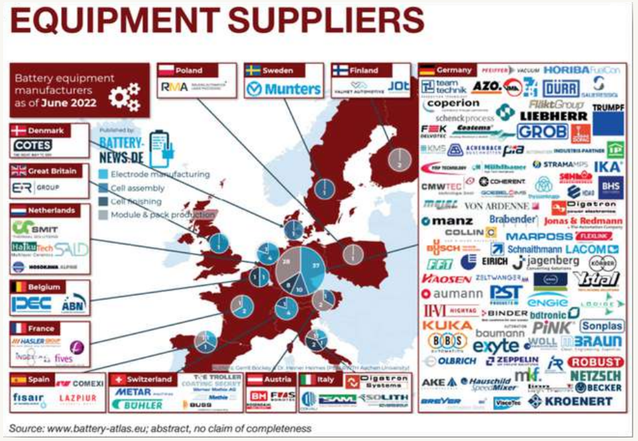


- PRODUCTION
- MAINTENANCE
- **LOGISTICS**
- QUALITY
- OTHER ASPECTS

- STATIONARY BATTERY APPLICATIONS
- MOBILE BATTERY APPLICATIONS

STAKEHOLDERS/COMPANIES

EQUIPMENT SUPPLIERS



Source: www.battery-atlas.eu; abstract, no claim of completeness

Logistics and Purchasing

Environmental priorities: A European Gigafactory must follow the existing regulations and be able to face upcoming environmental regulations. The CO2 footprint for battery cell production must be reduced to more acceptable levels by optimizing: 1) Local sourcing of raw materials; 2) Fossil-free means of transport; 3) Shorter and fewer transports of raw materials and other production inputs; 4) Use of green recyclable energy in all phases of production; 5) Raw material percentage coming from recycling of batteries; 6) Traceability of all raw materials and other production inputs; 7) Vertically integration with long production lines, for more control over the production.

Inbound logistics: A cell gigafactory needs considerable volumes of raw materials and other supplies every day.

Outbound logistics: As in the example from Northvolt, the 16 GWh battery production in the first two lines to be commissioned (of 60 GWh to be ready by 2025) will result in 85,000 tons of Li-Ion batteries per year in cylindrical and prismatic formats to be shipped out. Thus, the volume of inbound supplies is about double the outbound product volumes.

For **international logistics planning**, expertise is needed and can be outsourced or be done in-house, but control over the environmental and economic priorities must be maintained.

Inhouse logistics: European cell gigafactories will be highly automated, including as expected internal factory logistics. In an Industry 4.0 environment, many activities are coordinated by the generated data streams from the production.

Recycling logistics: An essential source of new battery materials will be recycled batteries, both substandard batteries directly from the production line and collected old Li-Ion batteries.

TARGET GROUPS: battery producers, battery plants, stakeholders active within the logistics field, and the above-mentioned logistics aspects.

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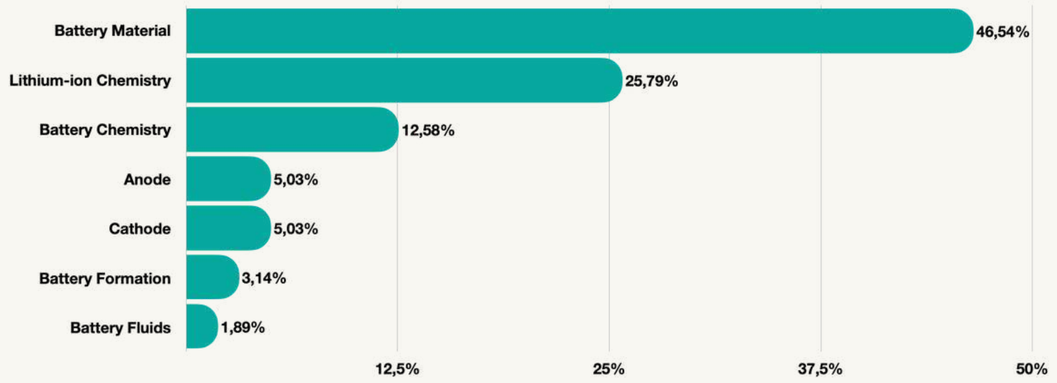
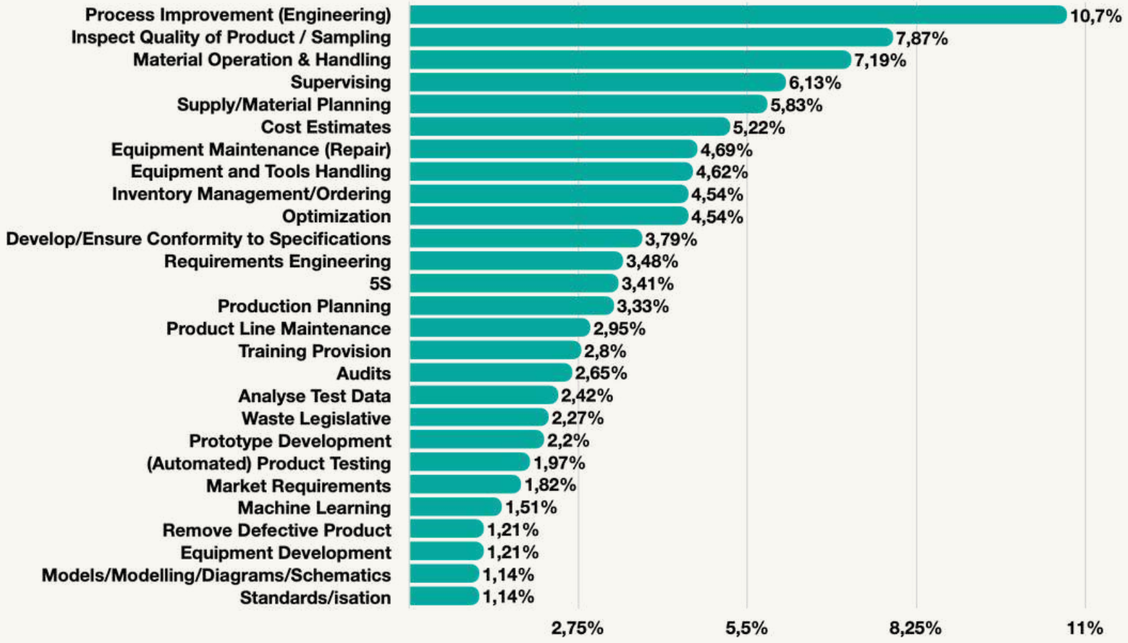
SKILLS, COMPETENCES & KNOWLEDGE NEEDS

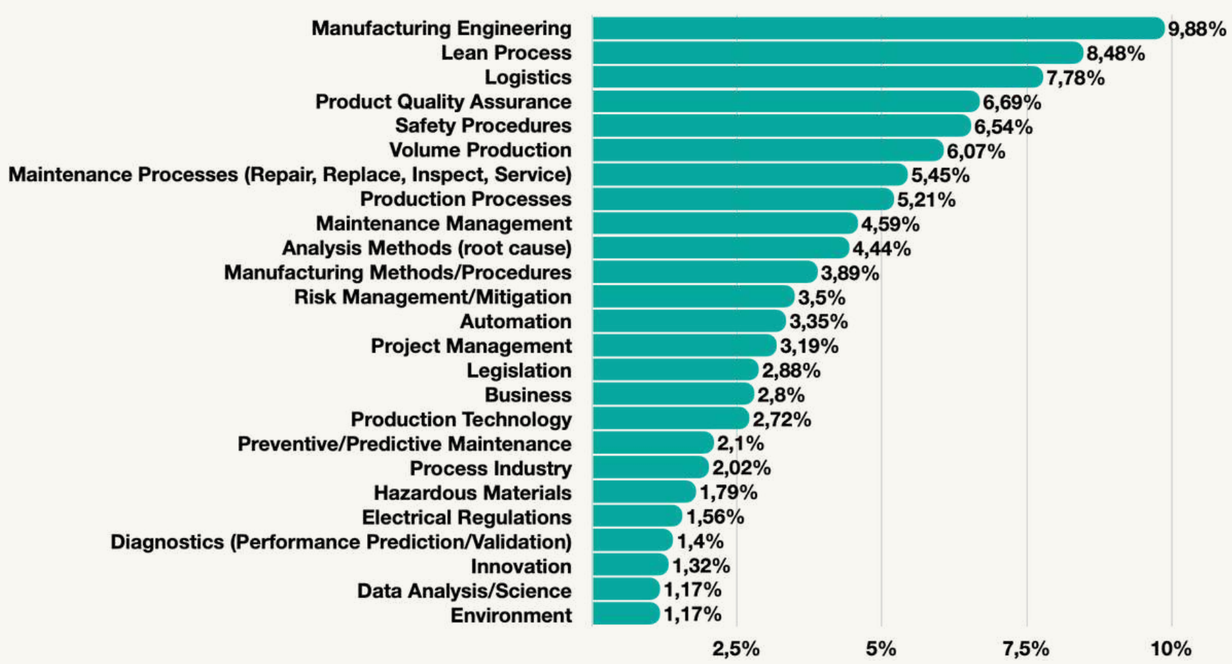
SECTOR SPECIFIC COMPETENCE



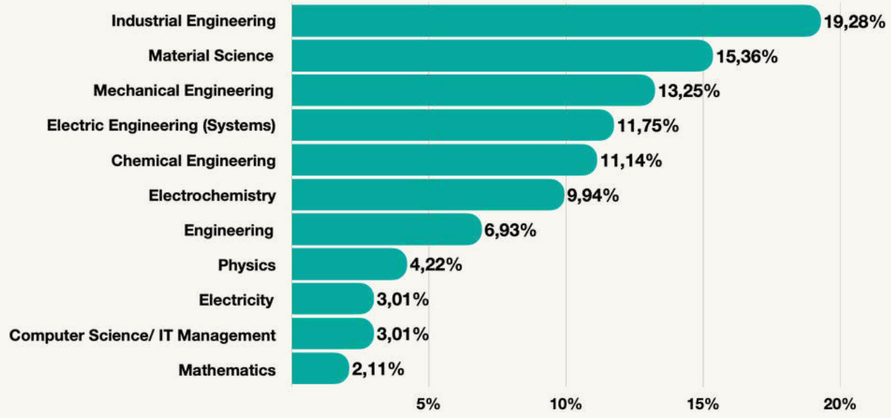
CROSS-SECTORAL SPECIFIC SKILLS



CROSS-SECTORAL SPECIFIC KNOWLEDGE



ACADEMIC COMPETENCE



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JOB ROLES

BLUE-COLLAR

OPERATOR
PLANNER
MATERIAL PLANNER
MATERIAL HANDLER
SENIOR PLANNER
SHIFT LEAD
AUTOMATION/PROCESS OPERATOR
BATTERY PRODUCTION TECHNICIAN
PURCHASING ROLES-EQUIPMENT

WHITE-COLLAR

LOGISTICS BUSINESS ANALYST
LOGISTICS MANAGER
CELL ASSEMBLY PROCESS ENGINEER
LOGISTICS DEVELOPER
SHIFT LEAD MATERIALS MANAGER
MATERIAL EXPERT/SPECIALIST
PLANNING AND LOGISTICS MANAGER
PRODUCTION MANAGER CELL ASSEMBLY
PRODUCTION MANAGER DOWNSTREAM
LOGISTICS EXPERT
INTERNAL LOGISTICS MANAGER
PRODUCTION ENGINEER
BATTERY MATERIALS ENGINEER
AUTOMATION ENGINEER
LOCALISATION SPECIALIST
INVENTORY & RECEIVING SPECIALIST
ENERGY STORAGE PRINCIPAL ENGINEER
PROCESS ENGINEER
LEAN MANUFACTURING ENGINEER
BATTERY CELL CONDITIONING PROCESS DEVELOPMENT EXPERT
BATTERY MATERIALS ENGINEER HIGH DENSITY ANODES

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CONSIDERATIONS / RECOMMENDATIONS

All aspects of logistics when it comes to battery production should be considered:

- **Environmental priorities**
- **Production facility construction logistics**
- **Inbound logistics**
- **Outbound logistics**
- **International logistics planning**
- **In-house logistics**
- **Recycling logistics**

LINKS & RESOURCES

- Sectoral Skills Intelligence and Strategy - Logistics
- See the list of the ALBATTS **SKILLS CARDS**

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