INTELLIGENCE IN BATTERY SECTOR – STATE-OF-THE-ART OVERVIEW

D3.3 Desk Research and Data Analysis - Release 1

The report provides an **overview of the state-of-the-art** of the European battery sector in terms of drivers of change, stakeholders, technologies, connected job roles, skills needs and education.

It also provides **specific information about different value chain steps** within the European battery ecosystem:

- Raw Materials and their processing;
- Components and cells manufacturing;
- Battery modules and pack manufacturing;
- Battery integration;
- Operation, Repair and Maintenance;
- Second life;

Finally, it sums up current **challenges across different categories**:

BATTERY SECTOR

Balance between Mobile and Stationary Battery Applications

Importance of battery sub-sectors going hand in hand, benefiting from each other when it comes to technologies, stakeholders, job roles, skills, competence, education and identification of sector attractiveness, as well as drivers of change, throughout the whole battery value chain.

ATTRACTIVENESS

Attractiveness of Battery Sector

Importance of the attractiveness of the battery sector, its connection with drivers of change and newcomers to the battery sector seeking for an employment or new opportunities when it comes to re-skilling or up-skilling.

SEE ALSO NEXT PAGE •••

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JOB ROLES, SKILLS AND COMPETENCES

Categorisation of Job Roles, Skills and Competence

Importance of definition and categorisation of important skills and competences needed to accommodate new and emerging job roles in the sector, as well as further definition of education plans.

- Prioritisation/identification of certain job roles and skills for the future battery value chain in the EU
- Soft, transversal and sector specific skills

INTELLIGENCE

Reliable and State-of-the-Art Information

Importance of workforce, companies and other entities that are active in the battery sector havinf access to relevant and up to date state-of-the-art information about the battery sector.

TECHNOLOGIES

Future Technologies and Processes

Importance of future technologies, processes and methodologies bridging the battery value chain and the many aspects for further attention and research:

- Prioritisation of research and development
- New battery chemistries and types
  - Solid-state, LiS, Lithium-metal and more
  - Hydrogen-based and fuel cells
- Raw materials and their processing
- Production and manufacturing technologies
- IoT
- Relation to the Industry 4.0

SECOND LIFE AND RECYCLING

End of Life of Batteries

Importance of research on second life batteries. This covers their usage in other applications and their recycling process.

- Harmonisation of legislation and standards
- Adoption of the circularity concept in battery recycling and repair and maintenance, including innovative research and development.

SEE ALSO NEXT PAGE

INFORMATION
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BATTERY APPLICATIONS

New Mobile Battery Applications

To porsuit new possibilities and demand for mobile battery applications, such as airplanes, vessels, e-bikes or other urban mobility platforms.

BATTERY APPLICATIONS

New Stationary and Other Industrial Applications

Need to exploit new possibilities for implementing stationary and other industrial applications, such as off-grid stationary applications in remote areas and other applications related to the IoT, 5G and more, alongside with related skills and competence, job roles of the maintenance teams and their up-skilling and re-skilling. Risk mitigation and proper legislation and standards should be taken into consideration.

BATTERY SECTOR

Transition of the Related Sectors

Importance of the transition into batteries and their influence on other sectors. Clear vision of a roadmap on how to achieve full decarbonisation and usage of green energy, and how to compensate in terms of expenses, unemployment, turnover, etc.

STAKEHOLDERS

Cooperation

Importance of cooperation between various EU initiatives, projects, universities, VET providers, companies and other entities active in the battery sector. Strengthening interaction and exchange enables better R&D development, as well as education.

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