and raining **ALBATTS IN THE BATTERY ECOSYSTEM** Technology,

Dr. Anders Norberg, Skellefteå Municipality, Sweden **ALBATTS** Coordinator



Skills

Batteries

for

Alliance

Co-funded by the **Erasmus+ Programme** of the European Union

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ALBATTS Decarbonisation Enabler Quo vadis battery value chain?

Final Conference - Brussels, 09/04/2024





"Quo Vadis?" Sculpture (1991) by the Czech sculptor David Černý

Location: The German Embassy Garden in Prague, 1991.



THE PROJECT

Find the second states of the

THE BLUEPRINT FOR SECTORAL COLLABORATION ON SKILLS IN THE BATTERY SECTOR



ALBATTS CONSORTIUM



20 EUROPEAN PARTNERS FROM 11 COUNTRIES REPRESENTING INDUSTRY AND EDUCATION

















ALBATTS STEERING COMMITTEE







EUROBAT

THE ALBATTS STEERING BOARD PROVIDED SUPPORT, GUIDANCE AND OVERSIGHT OF WORK PROGRESS









ALBATTS DURATION AND PURPOSE



ALBATTS GOAL WAS TO CONTRIBUTE TO THE GREEN MOBILITY IN EUROPE BY ESTABLISHING A BLUEPRINT FOR PREPAREDNESS OF FUTURE SKILLS ACROSS THE BATTERY VALUE CHAIN





ALBATTS TACKLES TWO MAIN QUESTIONS

WHAT IS GOING ON IN THE BATTERY SECTOR AND HOW DOES IT AFFECT JOB ROLES & SKILLS?

- Gathering skills needs
- Detailed description of skills and job roles
- Covering the whole value-chain
- Sustainable collaboration

2

HOW CAN WE ADDRESS THE CURRENT **CHALLENGES**?

FOCUSING ON Vocational Education and Training (VET) and Higher Education (HE) AIMED AT initial training and re-skilling and up-skilling of workforce





SECTORAL INTELLIGENCE

EDUCATION & TRAINING

EUROPEAN BATTERY SECTOR



- right skills

High demand for workers «The industry estimates that by 2025this growing skills shortage could amount to some 800 thousand jobs across the entire battery value chain. » - EC Vice-president Šefčovič, March 12th 2021





• Highly emerging and rising sector in Europe Electromobility is pushing the European battery sector

This needs to be supported by the workforce with the

Change of needed skills/competencies or knowledge during the individuals' career – the change is constant





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Europe
ecycling renegs
 re re
teries Ixxat Energy Systems bibox @ gigabatt
Slovakia 🖲



BATTERIES VALUE CHAIN

- There is a lack of information on needed skills and job roles
- We need more collaboration
- Needed skills impact on each phase of the production cycle





SKILLS AGENDA AND STRATEGY

- The overall assessment is supported by a strategy
- The whole value-chain and all levels of education need to be addressed
- Competencies can be sector specific and cross-sectoral





-funded by the



ACCESSIBLE TO RELEVANT RECIPIENTS.

ALBATTS 2020 RETROSPECTIVE

Year I



Launch of the **ALBATTS** website

Stakeholders



Launch of the ALBATTS Stakeholders Database

Covid-19



Recommendation of online





courses during confinement



Involvement with the Pact for Skills



ALBATTS 2021 RETROSPECTIVE

Year 2

Highlights Webpage



Launch of page in ALBATTS website with highlights of the project's deliverables

Online Meetings



The new way of working together in cruise speed



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Shortening Gaps



Contribution to develop strategies to overcome the skills gap in the battery industry



ALBATTS 2022 RETROSPECTIVE

Year 3

Back to Face to Face



First partnership meeting in person since before Covid-19

BaTT Forum



Launch of the Batteries Teachers and Trainers Forum



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Cooperation



Deeper cooperation with the Battery European Partnership Association (BEPA)



ALBATTS 2023 RETROSPECTIVE

Year 4

Launching of Skills Cards



A series of papers describing occupational profiles - and corresponding competencies - within the scope of battery manufacturing, e-mobility and stationary battery storage.

The ALBATTS Courses are available through the Automotive Skills Alliance (ASA), an association created through the bridging of the projects' ALBATTS and **DRIVES** activities.



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Free Training

ONLINE COURSES



ALBATTS LANDMARK MEETINGS





MORE THAN 30 WEBINARS & WORKSHOPS



- abatts Co-funded by the Erasmus+ Programme of the European Union



SPEAKERS IN WEBINARS & WORKSHOPS



More than 80 speakers helped ALBATTS research over the project's duration.





ALBATTS REPORTS



MORE THAN 30 REPORTS RELEASED!





EXPLANATORY FACTSHEETS



ALBATTS released over 40 FACTSHEETS highlighting main findings in the project's reports!





ALBATTS NEWSLETTERS



REGULAR INFORMATION ON THE PROJECT'S ONGOING WORK, BUT ALSO INTERESTING INTERVIEWS AND ARTICLES, AS WELL AS INFORMATION ON POLICY MATTERS AND SECTOR RELATED EVENTS



BATTERIES TEACHERS & TRAINERS FORUM

The **BaTT** Forum is an initiative that was launched by ALBATTS with the purpose of gathering current and future teachers and trainers to share ideas and good practices, work together and deepen their knowledge about the battery sector.





The BaTT Forum is now funded and further developed through the CaBatt - Capacity Building for Battery Teachers in VET, an Erasmus funded project developing a sustainable model for offering Erasmus+ courses for VET teachers.



SKILLS CARDS



ALBATTS created the ALBATTS Skills Cards, a series of papers describing a number of occupational profiles within the scope of battery manufacturing, e-mobility and stationary battery storage.







SKILLS CARDS



The Skills Cards are a practical and helpful tool for...





SCHOOLS (VET & HE)









EDUCATION AUTHORITIES, NATIONAL/REGIONAL

EMPLOYMENT SERVICES, ESCO

FREE **ONLINE COURSES**



- abatts Co-funded by the Erasmus+ Programme of the European Union



HANDBOOK



- Published in March 2024
- companies, education authorities



• Available through the ALBATTS website

• Target group: education providers, teachers,



THANK YOU !



Alliance for Batteries Technology, Training and Skills



Co-funded by the Erasmus+ Programme of the European Union











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@ALBATTS – Alliance for Batteries Technology, Training and Skills

@ALBATTSI

@Project ALBATTS

Exercise: What is the Future of Raw Materials in Energy Storage Devices?

M. Helena Braga

LAETA, Engineering Physics Department, FEUP, University of Porto



ALBATTS Decarbonisation Enabler Quo vadis battery value chain?





One World... 3 Energy Problems

1. Store Energy

- Safely
- Efficiently
- In remote places



2. Harvest Wasted Energy (e.g. heat)

- Solve an industrial, household, vehicle, databank... problem
- Reduce carbon footprint

3. Using Sustainable Materials/Methods

- Not making the solution an additional problem
- Using environmentally friendly, inexpensive, widely available materials (e.g. sodium based), and fair labour







Batteries Technologies



Li⁺-ion battery





3



Cobalt Copper Lithium Magnesium Manganese Natural Graphite Nickel Phosphorus



Lithium (Li) Cobalt (Co) Nickel (Ni) Manganese (Mn), Iron (Fe) Phosphorus (P) Carbon (C) Aluminum (Al) Copper (Cu) Oxygen (O) Fluorine (F)



POTASS

Na Sodium 22 9897692

safe, inexpensive, sustainable for underground using thermal gradient and thermal energy





Cu replaced by carbon

Energy Harnessing and Storage

wireless



Future solutions?

- Batteries with mobile Na⁺ and K⁺
- Structural batteries
- Electrode less batteries
- One electrode (wireless) batteries

All-solid-state Ferroelectric Complex systems





northvolt co-creation of education



Co-creation of battery manufacturing education

Vocational to first, second and third cycle academic education





Northvolt Labs

🛇 VÄSTERÅS, SWEDEN

Cell industrialization campus with full upstream and downstream production capacities.

Additional on-site facilities provide complete cell safety and validation capabilities.

Pilot recycling plant provides a platform for process innovation and optimization.

100% RENEWABLE ENERGY

Example from Sweden


- albatts

aurora Lithium

Aurora Lithium

Aurora, a joint venture lithium conversion facility in Setúbal, Portugal, is building one of the largest and most sustainable EU lithium conversion plants



Location: Portugal (Setúbal -50km from Lisbon-)



- albatts

aurora Lithium

Strategic areas status



Aurora complements shareholders' position in the battery value chain, with fully developed and traceable lithium from spodumene mining to EV



50% of Aurora's LiOH output will be taken directly by Northvolt.



- albatts



Aurora will be one of the most sustainable spodumene-to-lithium conversion plant in EU







aurora Lithium

Aurora aims to solve the sectors key challenges through its embedded strengths

	Positioning in the value chain	 Secured supply chain and offtake through shareholders Fast-track route to market 	
	Regional challenges	 Strategic logistic platform in our unique location Energy competitiveness leveraging Portugal high shares of renewable energy 	
AURORA LITHIUM Tackling key challenges	Team expertise	 Strong and complementary leadership team with lithium and operational experts Local qualified and cost-competitive workforce 	
	De-risked innovative flowsheets	 De-risked flowsheet through the selection of a high TRL production process Innovative through the Incorporation of intermediates and electrification 	
	Sustainability by design	 One of the most sustainable lithium refineries in EU Circular economy mindset with almost all of the byproducts with natural off-takers 	
	Strong support from stakeholders	 Strong local and EU level support for the project Offtake with +30 potential customers interested in guaranteeing final product offtake 	

Support with early financial incentives and access to raw materials remains the key challenge for the EU value chain





OURO Lithium









Powering the way forward with sustainable batteries for a responsible energy transition

April 2024



Delivering on the record-breaking lead time in Europe

Unprecedented convergence of industrial and financial milestones



Two industrial tools: our Verkor Innovation Centre and Gigafactory

Verkor Innovation Centre

- 150MWh/y smart pilot line in a 15,000 m² building located in Grenoble
- R&D lab for the design and validation of new chemistries and products
- Products developed will meet automotive quality standards
- A sample validated and B sample validation in progress



Gigafactory site

- ✓ **On-going construction** of the Gigafactory in Dunkirk
- An initial capacity of **16 GWh/y** corresponding to 300,000 vehicles annually
- ✓ First cell production planned in 2024, shipping out **2025**
- Potential to expand to above 50 GWh/y production capacity with several Gigafactory extensions by 2030





Creating +1,200 direct jobs + 3,000 indirect for the first tranche





An ambitious and diversified technological roadmap to capture fast-growing markets





Highly experienced team

A world-class team of industry experts





























'ESLA

ENAULT

THALES

ALLIANCE VENTURES

LDC. amazon





c. 500 FTEs reached in less than 4 years after inception





















>1,200 years of cumulative battery experience





C LG Energy Solution





SAMSUNG



KPMG APPARIUS InnovaFonds









Deloitte. 🥝

Supply Chain

Strategy, and

APE



Logistics Engineer



A123 SYSTEMS





























THALES

GigaFactory PMO















Confidential













Kraft*Heinz*



A battery school to further grow those talents

02

edlb L'école de la batterie

Battery School

Born in France in 2022 with recognised universities and schools Leading by Verkor Supported by French Governement

01 1,600 people trained every year from 2026

100 initial & continuous trainings

03 From vocational

training to

Doctorate

04

At anytime of life

Training for trainers

Electric vehicle - Level 1 with Verkor, TOLV, WattAlps & PowerUp (2 days) Design of test benches courses with Verkor and Critt M2A (8 days))







Operator trainings

AFPA x Verkor "Battery Operator" training course - 1st class (March-June 23) and 2nd class (Oct-Jan 24)

Creation of a dedicated "Bac+1" by Cnam







EBA250

EUROPEAN

BATTERY

ALLIANCE

The fast-changing landscape of the European Battery value chain





Introduction

InnoEnergy and the European Battery Alliance

InnoEnergy | Accelerating the energy transition







EIT InnoEnergy is one of the leading **investors and accelerators of** sustainable energy solutions which is co-funded by the EU's European Institute of Innovation & Technology (EIT)



Since 2017 EIT InnoEnergy has been mandated by the European Commission to drive forward and promote the industrial network of the European Battery Alliance, the EBA 250 network with stakeholders along the entire European battery value chain from mining to recycling.



Successfully incubated and an early investor in **northvolt** and **W**rence, Europe's home-grown Gigafactory projects



years experience in building one of the +13 largest sustainable energy innovation ecosystem across Europe



EBA – an industrial policy success story supported by European Decision Makers





Maroš Šefčovič, EVP of the European Commission

"The lack of a domestic, European cell manufacturing bases jeopardizes the position of EU customers because of the security of the supply chain, increased costs due to transportation, time delays, weaker quality control or limitations on the design. So, we need to act fast – and collectively- to overcome this competitive disadvantage [...]" +

EBA250 Mission

To enable and build the resilient, competitive and sustainable EU battery value chain worth €250bn/a by 2025



EIT InnoEnergy

Mandated by the European Commission to drive forward the activities of the EBA250



Collaboration with Stakeholders Work closely with industry & decision makers at EU and Member State level

Value Chain

800+ dynamic industrial members, inclusive and comprehensive ecosystem

4

EBA key accomplishments and success stories – concrete results from EBA Action Plan-

The EU Commission's





The EBA250 Action plan

Concrete Deliverables based on Actions developed by the EBA250 stakeholder ecosystem

Awareness on the importance of raw materials for the green energy transition -> CRMA

Turned Europe into a hot spot for investments in battery manufacturing -> more than 230 projects along battery value chain

Increased coordination of battery R&I efforts and funding possibilities -> *Batteries Europe, BEPA, IPCEI*

Sustainability and Circularity as core values of the growing EU industry -> *Battery Regulation*

Developing Skills for the electrified future -> Skills Institute, Albatts and other initiatives

Increased policy coherence -> Green Deal Industrial





The fast-changing landscape of the European Battery value chain

Our starting point in 2017





- No battery supply chain
- No cell production capacity in Europe

But:

16

14

Predicted "Hockey stick" in market by 2020



EUROPEAN **EBA250** BATTERY ALLIANCE





What happened to our prediction? Actual EV market 2022 was 2 x prediction 2017!

Projection 2017

46% CAGR

20216

20201

Europe US China Japan ROW

20232

2022

202AE

20254

16

14

12

10

8

6

2015

2016 20174

Source: UBS estimates

31% CAGR

20184

20194



And stationary storage is growing too...the actual BESS market 2022 was 4 x prediction 2017



DECC installed associate outlock by storage time, new additions

EUROPEAN

BATTERY

EBA250

EVs are still driving the demand for batteries



- EV sales is still growing rapidly in Europe even tough car sales overall is decreasing
- Strong commitments from all OEMs to make the transition to electric drivetrains
- The mythical "price parity" between EV and fossil cars suddenly happened – two years earlier than forecasted (High-cost segment)



New passenger car registrations in the EU

12 month trend





Created with LocalFocu



Similar size and equipment level

Volvo XC60 Diesel 52 017 € Tesla model Y 48 430 €



p-funded by the

ropean Unior

EVs are still driving the demand for batteries

EUROPEAN BATTERY ALLIANCE EBA250

- Next focus "Affordable EVs"
- Charging infrastructure is (almost) keeping up with car sales







VW ID2 – 25 000 €



Wuling's Mini EV 5000€



-funded by the

opean Unior

Fast and ultra fast chargers in Europé.

But....Recent geopolitical events impact on production costs for cells and EVs and increase supply chain constraints





¢/kW/h	Average battery pack price and range by region, real 2022 \$/kWh		Estimated effects on price by US funding and subsidies (e.g. IRA; DOE) and energy costs on average pack prices	
,, K W				
200 —				
180 —			1	~178
		169		Electricity co
160 —	157	0	IRA.	
140 —			DOÉ	\square
	127		127 ~127	
120 —	*2			
100 —				~4.000€ / eV
0 —				80
	US avera pack pric +24% compar to Chin	e is price is + 33% compared ed to China and +8% a compared to US	~Price parity for US compared to China thanks to IRA, DoE grants and tariff policy	EU average pack prices +40% compared to China and US due to EU electricity prices far above developments in US and China and other factors

The IRA has had the greatest impact on battery cell manufacturing, where investment is driven by incentives of up to \$45 per kilowatt-hour if both the cell and modules are produced in the US.



China moves to limit exports of graphite

The restriction on the critical mineral came days after the Biden administration restricted semiconductor exports to the country.

Published Oct. 23, 2023



Redistribution of supply for the european metals industry



The EU Reaction





Commission européenne European Commission

The Green Deal Industrial Plan



TCTF Temp. Crisis & Transition Framework Loosening of state aid guidelines, possibility to match foreign aid if there's a risk of an EU company leaving the EU

Four pillars of the Green Deal Industrial Plan



CRMA *Critical Raw Materials Act (Nov 2023)* 2030 benchmarks, definition of strategic projects, increased collection of waste



NZIA Net Zero Industry Act Downstream measures, definition of netzero technologies, targets for industry







The EU battery industry under pressure – projects in the EU struggle to take off due to slow permitting, high cost and weak support

EUROPEAN BATTERY ALLIANCE





Skills Institute continues to deliver

11 December 2023

InnoEnergy Skills Institute reaches milestone of 50,000 upskilled learners to support a growing battery industry



The InnoEnergy Skills Institute has announced the completion of specialised training courses for over 50,000 individuals, a significant step towards addressing the growing workforce demands in the battery industry.

Maroš Šefčovič 🛅 🔹 1st

European Commission Executive Vice-President for the European Green ... Imo + 🕲

We want to train 100 000 workers by 2025 to overcome the skills shortages in the rapidly growing European battery value chain.

Today we celebrate reaching the halfway milestone with 50 000 learners who have successfully completed their training under the European Battery Alliance Skills Academy.

Batteries will play a crucial role in Europe's future green and sustainable economy. And when it comes to building our future, people are our most important resource.

The European Battery Alliance's Skills Academy is an example of how to turn industrial policy ambition into concrete results on the ground. I hope it will be used as a blueprint for the upcoming Net-Zero Industry Academies foreseen under the Net-Zero Industry Act.

Next year we will launch the European Solar Academy. The European Hydrogen Academy and the European Raw Materials Academy will follow soon afterwards and we are already making plans for a European Wind Academy.

https://europa.eu/!yGjFtQ

#batteries #greenenergy #greenfuture #eugreendeal #skillsforthefuture #skilledworkers #skillsshortage #skilledlabour #skills #solar #solarenergy #solarpower #hydrogen #rawmaterials #criticalrawmaterials #sustainabilityjobs #sustainable #netzero #nzia #windturbine #windenergy #windpower #greenskills



- Transitions happen faster than anticipated: EV market is now at or beyond tipping point, other segments, such as BESS and HDV, grow strongly and will increase demand for batteries even further
- Domestic production and International cooperation: Increased demand will lead to supply risks and bottlenecks along the supply chain, also related to the concentration of battery material production in few countries – unless we boost domestic production and international partnerships
- Transparent and Sustainable Supply Chains: Focus on primary raw material with *low carbon footprint* sourced from Europe- or ensure sourcing with same high standards from outside Europe
- **Recycling:** Closing the loop with access to *secondary raw material resources and recycling*
- Make more with less: New battery technologies and car design needed
- Skills and innovation: Experts and leadership to accelerate growth along the entire value chain

EUROPEAN

EBA250

Thanks!





EIT InnoEnergy

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Education and Training development for the battery value chain within ALBATTS

ALBATTS Final Conference 09/04/2024

João Alves, ATEC, Portugal

ALBATTS Tackles Two Main Questions







2

HOW CAN WE ADDRESS THE CURRENT CHALLENGES?

EDUCATION & TRAINING

 FOCUSING ON Vocational Education and Training (VET) & Higher Education (HE) AIMED AT initial training and re-skilling and up-skilling of workforce





Skills Cards

26 job skills cards produced (15 on HE level and 11 on VET level)



Summaries of Skills Cards (available in our website)

Each card has short description of the job role and

-Cross-sectoral specific competences -Sector specific competences (has a big importance)

-General transversal competences -Academic competences



- albatts



Skills Cards







Education & Training Framework







Courses

14 Courses already available



Examples of available courses

Available through the Automotive Skills Alliance (ASA), an association created through the bridging of the projects ALBATTS and DRIVES activities and to sustain project results







ALBATTS courses



- albatts



Learning Platform

Skills Hub

Database for **training courses**

Definition and **recognition of job roles** and skills/competence concepts using micro-badges.










Recognition

Discussion on Skills Cards with multiple stakeholders and projects

- KOMBiH based analysis of needed skills and jobs in the Germany
- Updated VET curriculum in Czech Republic Battery Manufacturing Technician
- Core competence analysis helped to shape national curriculum module in Finland
- Update of national curriculum in Portugal
- Update of ESCO European Skills, Competences, and Occupations
 - 4 new occupations, 8 new competence concepts, and 15 alternative concepts
- Issued Micro-credential under the Automotive Skills Alliance





Training for VET Teachers



About BaTT Forum

- The Batteries Teachers & Trainers Forum (BaTT Forum) is an initiative launched by ALBATTS
- Upskilling and sharing of the best practices among VET teachers to support Batteries education and training (especially EQF 3-5)











Published in March 2024

Available through the ALBATTS website (in Publications)

Target group: VET schools, teachers, companies





Battery Training Courses & Skills Collaborations

Need for urgent and continuous training courses offer and update & Need for active and sustainable collaborations, e.g.: New EBA Academy – InnoEnergy Skills Institute











An initiative of the European Commission







Thank you!



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https://www.project-albatts.eu



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@ALBATTS1



@Project ALBATTS

JOIN OUR NETWORK THROUGH OUR WEBSITE AND GET FIRST-HAND INFORMATION ABOUT OUR WORK & BATTERY SECTOR SKILLS AGENDA!











BatFactory

Walloon Recovery Plan – Convention 2310153









Key challenges:

- Green energy transition driving strong growth for LiBs – solar systems as part of micro- & offgrid solutions
- Europe currently captures relatively little of the market share
- Dir 2006/66/EC & amendments: LiBs passport, eco-design, dismantlement, reuse, recycling, critical materials circularity
- Highest GHE due to active materials and conventional cells production (PVDF, NMP)

<u>Sources:</u> IEA Global EV Outlook, 2023 IEA Who wants to be in charge, 2017



Demand for lithium ion batteries





China Europe United States Other























<u>Objective</u>: to produce high-performance integrated batteries using smart processes which respect the planet and enable circularity for the benefit of Walloon industrials with the aim of economic, environmental, and societal development.





BatFactory



Materials:

- Active materials
 - Discover and test new materials to eliminate pollutants at the source
- Functional materials
 - Functionalisation of active materials in powder form, as thin films, and via microstructuring
- Testing
 - Develop pilot systems for partners to test the new materials and processes at scale with low risk in environmentally friendly conditions

Prototyping:

- Battery control
 - Develop smart connected control systems
- Assembly
 - Establish a pilot assembly line for integrated battery packs

Processes: 💼

- Optimisation
 - Modify existing production methods to use water instead of organic solvents
- Scaling-up
 - Increase throughput of laboratory processes to semi-industrial quantities

Characterisation and certification:

- Acquire new equipment
 - Solid-state in situ NMR
- Life-cycle analysis
 - Evaluate the lifetime economics and environmental impacts of proposed batteries













































BatFactory



Wallonia's strengths:

Computational

modelling

- Several universities active in materials research and circularity
- **Independent Strategic Innovation Initiatives offer complementary** expertise (CETWA, Win4C)
- Established partnerships between different stakeholders all along the value chain of the Energy Community

Scientific Strategy

 \rightarrow

UCLouvain

Materials

synthesis

 \rightarrow

Materials

processing

.IEGE









Involvement of industrial and commercial partners: a large number of private entities in or near Wallonia have already expressed interest in being part of the driving committee influencing the direction of research











Prof. Bao-Lian Su, <u>bao-lian.su@unamur.be</u> Dr Marvin Laboureur, <u>marvin.laboureur@unamur.be</u>



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Needed Job Roles and Competencies in the Battery Industry

ALBATTS Final Conference 09/04/2024

Ing. Marek Spányik, MBA (VSB-TUO)

Skills Intelligence Across the Value Chain

- There is a lack of
 information on needed
 skills and job roles
- We need more
 collaboration
- Needed skills impact on each phase of the production cycle







Skills Agenda and Strategy

- The overall assessment is supported by a strategy
- The whole value chain and all levels of education need to be addressed
- Competences can be sector specific and cross-sectoral





Glance on Needed Skills

CELLS PRODUCTION & CELLS MAINTENANCE







Cell Production



- Understanding in fields electrochemistry, electronics, mechanical engineering, process engineering, manufacturing technology, automation and digitalization in manufacturing (data analytics, maintenance and product process optimisation)
- In general, to speak and understand foreign languages, mainly English in working environment



Co-funded by the Erasmus+ Progra

Cell Production and Maintenance – Specific Needs



 \rightarrow What Industry Demands

PRODUCTION

- Apart from the general battery-related education, strengthening the skills and competencies to ensure understanding of setting up the production, preparing the
 related structures, commissioning the machines, chemical, and mechanical assembly, automation experience, and mechanical understanding of the automated
 systems combined with understanding the related software and calibration.
- Strengthening general IT and data analysis skills to cover future needs.
- · Battery skills (also mentioned in the context of Production)
- "Dry and clean room" maintenance (including room contamination measurement)
- Predictive and preventive maintenance
- Diagnostics

WHITE-COLLAR SPECIFIC NEEDS

- Increasing competencies in production and material engineering, production planning, production management, shift management, process engineering, cell design, machine learning and optimisation, modelling and simulation;
- Strengthening the focus on large-scale manufacturing, understanding of chemical processes and quality, risk and safety management;
- Battery industry-related knowledge skills: battery material, battery chemistry, battery fluids, battery components, battery testing, defective products removal

BLUE-COLLAR SPECIFIC NEEDS

- "Upstream" production increasing knowledge to understand the risks, envision the safety issues, and how chemicals behave;
- "Downstream" production increase machine understanding, 5S skills, and the ability to troubleshoot;
- · Overall production system understanding;
- Knowledge/skills: material handling, Clean/Dry Room Procedure/Validation, Inspect Quality of Product / Sampling, material pressing, electrode process, fine mechanics, HMI (Human Machine Interface)



Co-funded by the Erasmus+ Programme of the European Union the Commission cannot be held responsible for any use which may be made of the information contained therein.



Production and Maintenance \rightarrow What Industry Demands

BATTERY CELL SIMULATION ENGINEER DEVELOPMENT ENGINEER HIGH-VOLTAGE STORAGE COMPONENTS **BATTERY MATERIALS ENGINEER HIGH-DENSITY ANODES** CELL SIMULATION ENGINEER SR. BATTERY CELL ENGINEER MAINTENANCE ENGINEER ELECTROCHEMISTRY LEAD-BATTERY MATERIALS SR. ELECTRONICS ENGINEER FORMATION MAINTENANCE MANAGER CONTROLS ENGINEER CELL TEST ENGINEER ELECTRICAL ENGINEER MECHANICAL CELL DESIGN ENGINEER BATTERY MECHANICAL ENGINEER SENIOR CELL DESIGN ENGINEER LITHIUM ION CELL BATTERY SYSTEM ENGINEER CELL ASSEMBLY PROCESS ENGINEER MANUFACTURING ENGINEER EQUIPMENT ENGINEER MECHANICAL ENGINEER MECHANICAL BATTERY DESIGN SENIOR/STAFF BATTERY ENGINEER ELECTRO-MECHANICAL ENGINEER PRINCIPAL MECHANICAL DESIGNER TOP CAP ENGINEER CELL DESIGN ENGINEER CELL MECHANICAL ENGINEER DESIGN ENGINEER-BATTERY TECHNOLOGY MECHANICAL DESIGN ENGINEER MANUFACTURING ENGINEER, LI-ION ENGINEER PRODUCT MANAGER CELL ASSEMBLY ENERGY STORAGE PRINCIPAL ENGINEER PRODUCTION MANAGER DOWNSTREAM PRODUCTION MANAGER CELL ASSEMBLY AUTOMATION ENGINEER SENIOR ENGINEER-BATTERY MODELLING & ANALYSIS ELECTRICAL DESIGN ENGINEER SENIOR BATTERY MECHANICAL ENGINEER



TECHNICAL ASSEMBLY WORKER ELECTROMECHANICAL EQUIPMENT ASSEMBLER CMM LAB TECHNICIAN

BATTERY TECHNICIAN OPERATOR ΓΕΝΔΝϹΕ ΤΕCHNICIAN SHIFT LEAD ΝΔΝCΕ CALIBRATION TECHNICIAN CELL ASSEMBLY TECHNICIAN **ELECTRICAL TECHNICIAN** MECHANICAL DRAFTER **TEAM ASSEMBLER** PRODUC'

COMPUTER-CONTROLLED MACHINE TOOL OPERATOR MATERIAL PLANNER **GENERAL-MACHINIST**

WHITE-COLLAR



Production and Maintenance– Skills and Competence → What Industry Demands



SECTOR SPECIFIC COMPETENCE

Co-funded by the Erasmus+ Programme

Production and Maintenance– Skills and Competence -→ What Industry Demands





Skills Cards

26 job skills cards produced (15 on HE level and 11 on VET level)



Summaries of Skills Cards (available in our website)

Each card has short description of the job role and

- -Cross-sectoral specific competences
- -Sector specific competences (has a big importance)
- -General transversal competences -Academic competences







Thank you!



info@project-albatts.eu



https://www.project-albatts.eu



FOLLOW US / GET INVOLVED



@ALBATTS – Alliance for Batteries Technology, Training and Skills



@ALBATTS1



@Project ALBATTS

JOIN OUR NETWORK THROUGH OUR WEBSITE AND GET FIRST-HAND INFORMATION ABOUT OUR WORK & BATTERY SECTOR SKILLS AGENDA!





Gefördert durch:





aufgrund eines Beschlusses des Deutschen Bundestages

Building expertise for battery cell production in Germany's capital region

Christine Schmidt, Institute for VET Research (IBBF), 9 April 2024

Building expertise for battery cell production in the German capital region KOMBiH





Fig. 1: The KOMBiH consortium, IBBF, 2024

KOMBiH in battery qualification funding in Germany





Further information on the battery expertise trios

•Development of battery expertise in Saarland (ABAKOS)

•Battery Education Network Bavaria (B³)

•<u>Bildungsverbund Batterie Mitteldeutschland</u> (BatteryMD)

- Developing expertise for battery cell
- production in the capital region (KOMBiH)

•<u>Qualification measures in the Baden-</u>

<u>Württemberg battery ecosystem</u> (QualiBattBW)

•<u>Qualification and further training of specialists</u> <u>along the entire value chain of sustainable</u> <u>lithium-ion batteries (QuW-LIB)</u>

Battery value-added areas



KOMB

Provider of battery qualification funding in Germany



Fig. 4: Providers of battery-related qualifications in Germany (headquarters), IBBF 2024

KOMB

Project Approaches



			Adjustments,
Needs Analyses			Concepts,
State of Research A	nalysis		Developments
Supplementary evaluation of recent scientific studies on battery cell R&D, related to technical and interdisciplinary competence requirements (future skills)	VET Analysis		 Develop a matrix Prepare VET curricula Develop VET concepts and formats offer modules for the main target groups Management educational staff
	Analysis, research on - previous job descriptions - fields of activities - Value creation stages - previous qualifications - individual modules (EQF5-7)		
	State of Research A Supplementary evaluation of recent scientific studies on battery cell R&D, related to technical and interdisciplinary competence requirements (future skills)	Supplementary evaluation of recent scientific studies on battery cell R&D, related to technical and interdisciplinary competence requirements (future skills)	Supplementary evaluation of recent scientific studies on battery cell R&D, related to technical and interdisciplinary (future skills) VET Analysis Analysis, research on - previous job descriptions - fields of activities - Value creation stages - previous qualifications - individual modules (EQF5-7)

Qualification Offers in Germany





7

Qualification Offers for CEOs in the Capital Region of Germany KOMB



Fig. 7: Offers for employees in management in the capital region, IBBF, 2024

Qualification needs and R&D in the Capital Region of Germany KOMB



Production

Fig.8: Analysis results for battery cell production and qualification in the capital region, IBBF, 2024

Prospects within the framework of KOMBiH until 2027

Further training for employees, managers, teaching staff, career changers ...

Kick-off in 2024

- Focus from 2025
- Focus from 2026
- constant updates
- From 2024 to the end of 2027

In collaboration with

- AlBatts
- Battery trios
- Educational organisations
- Manufacturing companies
- Scientific organisations









Own further training through the webinars

Good basis for shaping the KOMBiH project

Input at the 1st Battery Forum in Berlin-Brandenburg, March 2023

Integration into all German qualification projects (battery trios)

Participation in the ALBATTS teachers' forum

We translate all materials into German

Make these and your own results available via the ALBATTS platform

We discuss the integration of the courses developed by KOMBiH on ALBATTS
Gefördert durch:



aufgrund eines Beschlusses des Deutschen Bundestages





Christine Schmidt

Project coordination <u>christine.schmidt@ibbf.berlin</u> +49 30 7623923 04

- LinkedIn https://www.linkedin.com/company/kombih/
- Website https://kombih.de/





Vocational Qualifications and battery industry

Finnish National Agency for Education, Vocational Education and Training (EDUFI)

Jarno Pöntinen / Chief Technologist

9.4.2024 Albatts - Final event

Qualification requirements in Finland



Structure of a vocational qualification



Battery industry in Finland`s VET (examples for optional units)

Automotive repair & inspection personnel

Battery manufacturing and

maintenance

Vocational qualification in the motor vehicles sector

Further vocational qualification in the motor vehicles sector

Repair work on the vehicle's high-voltage system, 15 cp

Electric work for electric and hybrid vehicles, 20 cp

Vocational Qualification in the Process Industry, 180 cp , Process Operator

Vocational Qualification in Mechanical Engineering and Production Technology, 180 cp (Mechanical Fitter)

Vocational qualification in Electrical Engineering and Automation Technology 180 cp (Electrician) Working in a battery industry, 15 cp (valid 1.8.2024)

Working in maintenance tasks, 15 cp

(valid 1.8.2024)

Working in industrial assembly tasks, 15 cp (valid 1.8.2024)



Case: New optional unit for battery industry

- EDUFI renew two vocational qualifications in 8/2022-5/2023
 - Vocational Qualification in Mechanical Engineering and Production Technology, 180 cp
 - Vocational Qualification in the Process Industry, 180 cp
- Our vision was to develop these vocational qualifications at the same time and find the similar optional units for these vocational qualifications
- There were lot of talk about battery industry and how we can recognize the needs of battery industry and different kind of job descriptions
- There were not lot of information about job descriptions until we found out about ALBATTS-project and we contacted with Katarina Sandbacka from VAMIA

Renew vocational qualifications in 8/2022-5/2023

Vocational Qualification in Mechanical Engineering and Production Technology, 180 cp

Vocational Qualification in the Process Industry, 180 cp

Consultation round for key stakeholders in May 2023

New optional unit (valid 1.8.2024)

Working in a battery industry, 15 cp



Case: Working in a battery industry, 15 cp

Working in a battery industry, 15 cp

Vocational competence requirements

Preparing for work

Student

- comply working time
- familiarize work task and plan own work
- understand written and oral instructions in English
- can behave and be a member of work community
- can work in a multicultural and international working environment

Knowledge of the operating environment and materials of the battery industry

Student

- understands the importance of the battery industry and its value chain
- knows the most common raw materials, materials and chemicals used in their own work area and the battery industry, as well as their production methods
- knows the most common components of battery cells and their chemical properties
- understands the importance of traceability of raw materials in the battery industry
- understand the electrical and chemical risks associated with ready-made battery cells and packages
- understand the factors influencing product quality requirements
- understands the importance of battery recyclability

Working at a workstation

Student

- works at the workstation in accordance with the workplace's operating system
- works in accordance with the cleanliness and hygiene requirements required by the work task
- identify the quantities to be monitored in production processes and their scales
- operate and monitor the machines, equipments and processes at the workstation
- identify disturbances and act in accordance with instructions in production disruptions
- carries out daily maintenance and condition monitoring tasks for the machines and equipment at the workstation in accordance with the instructions
- take into account the previous and next phases of production in their work
- use information systems and reports in their work
- takes care of quality control that required in the their work

Working safely

Student

- acts in accordance with occupational safety regulations and instructions
- assesses and observes safety risks related to their work
- report safety deviations, faults and damages to machinery and equipment
- works in right ergonomic postures
- · use personal and other protective equipment in accordance with the instructions in their work
- use tools and working methods in accordance with the instructions
- know how to act in an emergency or in the event of an accident

Accountability in a work

Student

- · ensures the cleanliness and operability of tools, machines and equipments in the work area
- minimizes losses and waste generation in its work and takes care of waste sorting
- looks for information on safety data sheets for the chemicals they use
- handles and disposes of chemicals used at work in accordance with instructions.

Methods of demonstrating competence

Students demonstrates their competence in practical tasks in the operating environment of battery industry. To the extent that the vocational competence required in the unit cannot be assessed on the basis of the demonstration, the competence demonstration is to be supplemented in other ways on an individual basis.

In addition, the student completes the permits and qualifications required by working life, which are necessary to demonstrate the competence required in the professional competence requirements.

This is not a official translation of this optional unit!

Flexibility in Vocational Qualification

A unit based on local competence requirements, 5-15 cp

The unit or units contain competence that meets local labour market needs. The competence must be suitable for the needs of more than one workplace. The education provider names the unit on the basis of operational entities in the world of work and determines its scope in competence points. The education provider defines the vocational competence requirements and the assessment of competence in a similar manner as for vocational units.

VET providers can create a local optional unit or units for tasks of battery industry

The unit contains higher education studies that support vocational competence.

Students can study courses of battery industry in university of applied sciences in vocational education

Higher education studies, 5 – 15 cp

10/04/2024 Finnish National Agency for Education

Future plans for battery industry in VET

Renew further vocational Qualifications (5/2024-5/2025)

Further Vocational Qualification in the Process Industry Further Vocational Qualification in Production Technology

New optional units for tasks of battery industry



Future plans for battery industry in VET

Maintenance

New, flexible combination

Vocational Qualification in Mechanical Engineering and Production Technology, 180 cp (Mechanical Fitter) Vocational qualification in Electrical Engineering and Automation Technology 180 cp (Electrician)

Maintenance technician (combination of mechanical fitter and electrician)



Thank you for listening and special thanks to Albatts-project for Skill Cards!

Finnish National Agency for Education, Vocational Education and Training (EDUFI)

Jarno Pöntinen Chief Technologist E-mail: jarno.pontinen@oph.fi

ALBATTS FINAL EVENT 9th april-2024

Use cases - Intelligence exchange and best Dunkerque, Capital of the new European Battery Valley?



EURAÉNERGIE

Dunkerque, a port city connected to the world







DUNKIRK, A TERRITORY WITH A DECARBONISED INDUSTRY

2021: Dunkerque: 21% of France's industrial CO2 emissions 16 MT of CO2 Power consumption in the Dunkirk from industrial area (MW) processes Thanks to the implementation of a full decarbonisation chain, 6.000 MW (2040) Dunkirk will outperform the targets (- 55 %) by 2030. 16 MT 6,000 MW **CIRCULAR ECONOMY** 15 MT 5,500 MW 5,000 MW 14 MT ENERGY SOBRIETY 13 MT 5,000 MW 2025 > HEAT SUPERHIGHWAY 12 MT 4,500 MW 11 MT -0 2027 > ELECTRIFICATION OF INDUSTRIAL PROCESSES 10 MT 7 MT of CO2 4,000 MW (-57% of CO2 emissions) 9 MT 2027 > RENEWABLE ENERGY PRODUCTION 3,500 MW WIND, PHOTOVOLTAIOU 8 MT 7 MT 2027 > GREEN HYDROGEN PRODUCTION 3,000 MW 6 MT (CO2 2,500 MW 5 MT 2027 > CAPTURE OF RESIDUAL CO2 (TRANSPORT, STORAGE, RELISE) 4 MT 2,000 MW COMMISSIONING OF A NEW 2027 > 2029 > WATER MANAGEMENT OPTIMISATION 1,500 MW ELECTRICAL SUBSTATION 3 MT 2 MT 1,500 MW 0-----2035 > PROJECT FOR 2 EPR REACTORS UPGRADE OF SEVERAL 0 MT ELECTRICAL SUBSTATIONS Carbon neutrality

0 % of CO₂ emissions 2021 2023 2024 2025 2026 2027 2028 2029 2030 2035 2050



NKERQUE INTERQUE INTERQUE



POUR VOUS INFORMER ET CANDIDATER



Dunkerque, Capital of the new European Battery Valley



8,5 billion €

will be invested over the next few years in the industrial port zone to produce and recycle electric batteries (total production of around 64 GWh by 2030)



AND ITS TECHNOLOGICAL CHALLENGES FOR ELECTRIC VEHICLE MOBILITY





A "BIG BANG" FOR LOCAL EMPLOYMENT

In Dunkerque:

- **22,000 direct, permanent jobs announced,** including 20% to 30% for management positions in industry, energy, construction and logistics by 2035, most of them linked to the energy transition, decarbonization and the battery industry
- 6,000 direct, permanent jobs announced for the all battery value chain
- Short term challenges: 2025 and 2026 for the 2 giga-factories
- A booming and challenging executive job market (R&D)
- English will be one of the skills required to join most of the battery companies
- Main Positions to be filled :
- Engineers (process, chemistry, quality, etc.)
- Production operators
- Maintenance technicians
- Process development technicians
- Logistics agents
- Quality technicians
- Etc...



16,000 to 20,000 jobs: opportunities for local employment

ANTICIPATE

- Listing needs
- Data consolidation

RAISING AWARENESS AND RALLYING PEOPLE

- Visiting companies
- Raising awareness and discovering jobs
- Identification of potential talents (job labo, immersive room)
- Gain knowledge about jobs with professionals for advice

TRAINING

- Funding trainings for job seekers
- Training for a job
- Specialising for a job
- Training actions before recruitment
- Getting familiar with the company

RECRUITMENT

- Job dating
- Candidates' sourcing and selection
- Helping to meet the requirements about the obligation to employ disabled workers
- Recruitment without CV / simulation based recruitment method (MRS)

Stakeholders involved in local employment



The Greater Dunkirk Urban Council (CUD), at the heart of the employment stakeholders' ecosystem



- Working groups with stakeholders to support companies
- Manage a community to prepare recruitments together
- ✓ A stronger partnership
- A strong involvement from public and private stakeholders
- ✓ A territory anticipating needs for skills





Gains and opportunities with the Albatts project

Raising local awareness about skills and competencies for all the battery value chain

Identifying european cities with common challenges

Saving time!

Further twinning and cooperation (cities, training centres)







Emmanuelle LEROY CERQUEIRA Head of the Employment and Talents acquisition Department Greater Dunkirk Urban Council Emmanuelle.leroy@cud.fr +333 28 23 69 96









RECOMMENDATIONS

ALBATTS Final Conference 09/04/2024

Katarina Sandbacka, Vamia, Finland



Impact on and active involvement of all stakeholders!





Vocational Education

Support FLEXIBILITY and COLLABORATION => SPEED UP REACTION TO THE CHANGES

EU-level:

- Encourage flexible modular approach
- Encourage member states to broaden programs with the possibility of crossdisciplinary content
- Promote cooperation between VET & HE
- Provide funding for the development and investment in physical and virtual training labs
- Provide funding for training of teachers
- Funding for national mobility and cooperation

Regional / National level:

- Green skills in curriculum
- Flexible modular approach with learning outcomes – easy to update and adapt, possibility to cross-disciplinary content
- Include Key Competences, English, digital skills and soft skills in the programs
- Funding for physical and virtual training labs, teacher training
- Funding encouraging VET providers to cooperate and co-operation with HE
- Funding for national mobility and co-operation





Vocational Education

Support FLEXIBILITY and COLLABORATION => SPEED UP REACTION TO THE CHANGES

VET provider level:

- Cooperate universities industry, other VET providers, municipality, authorities
- Stay constantly in contact with the national and regional educational authorities and inform them of the needs of curricula development, crossdisciplinary perspectives, etc.
- Be proactive! Don't wait!

Industry / Working Life:

- Communicate with VET/HE providers at an early stage!
- Help with training material and content
- Offer on-site experience for teachers and trainers!
- If the company has a pilot plant, digital twin, and/or training unit, let public education teachers take part in training and experience learning in a real environment





Recommendations / University Education

Challenge:

• Universities teach only what they research... but few universities have eg. battery research

 Incentives for European universities to cooperate not only in research, but also in education offerings, also on Bachelor level

Recommendations:

- **Subcontract** a research-specialised university for the needed course!
- Wrap a MOOC course from a good university!
- Introduce Elective green-skills courses! in all relevant programmes, now!...while program development speeds up...
- **Cooperate** with regional industry and relevant VET schools concerning labs, pilot plant access, co-teaching possibilities and similar





THANK YOU!







Sustainability of the collaboration on skills in the battery ecosystem in Europe

Dr. Jakub Stolfa Academic Staff, VSB-Technical University of Ostrava, Czech Republic President, Automotive Skills Alliance (ASA), Belgium

ALBATTS Final Conference 09/04/2024



What is happening after the ALBATTS project duration?



Continuation in...





What was built? What to sustain?





Collaboration on Skills Agenda in Battery Sector

Strategy Update & Implementation

Batt Forum

Initiation & mainstreaming

Co-funded by the Erasmus+ Progra



- Large-scale Pact for Skills Partnership in the Mobility-Transport-Automotive Ecosystem to strengthen collective actions on skills
- Announced and officially launched in November 2020
- ASA became legal entity (non-profit organization) in January 2022
- More than **110 members** up to now







THE AUTOMOTIVE SKILLS ALLIANCE

OBJECTIVES

www.automotive-skills-alliance.eu

MAIN BENEFITS OF THE COLLABORATION




ASA STRUCTURE – MEMBERS PARTICIPATION & COLLABORATION

ASA Partnership participate in Topic Committees, Working Groups & Task Forces ASA builds upon the work carried out by strategic projects in the skills agenda for the ecosystem & promotes and facilitates initiation of new projects/initiatives or support mainstreaming the existing once

TECHNOLOGICAL TOPICS	EDUCATION AND TRAINING & PROMOTION OF INITIAL/LLL EDU	
DIVERSITY & ATTRACTIVENESS & SOCIAL ELEMENTS	REGIONAL COLLABORATION AND IMPLEMENTATION	

&





ASA's COLLABORATION

www.automotive-skills-alliance.eu

ASA's Selected Collaboration

ASA & Automotive Regions Alliance & CoRAI: Working Agreement on a Strategic Partnership for a Just and Sustainable Transition of European Automotive Regions





ASA Strategic Partnership with



ASA member of



ASA is the Large-scale Partnership of the Pact For Skills Action



An initiative of the European Commission









TOOLS TO SUPPORT TRAINING AND EDUCATION

To offer training courses up to date and relevant

www.automotive-skills-alliance.eu

Reference Job Roles & Skills

- albatts

Courses

Certification



• Issue micro-credentials – digital certificates

www.automotive-skills-alliance.eu

Thank you for your attention !!

Contact me Using LinkedIn:





Contact me Using Email:

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@ASA_MobilityEU

info@skills-alliance.eu

BRINGING TRAINING SOLUTIONS TO THE MOBILITY WORKFORCE OF THE FUTURE EMBRACING THE SECTOR TRANSFORMATION WITH A SKILLED WORKFORCE

EUROPEAN YEAR OF SKILLS

EUROPEAN YEAR OF SKILLS

Why a European Year of Skills?

To further promote a mindset of reskilling and upskilling



Investment Increased, more effective and inclusive investment



Skills relevance Strengthening skills relevance by close cooperation



Matching aspirations

Matching people's aspirations and skills-set with labour market opportunities

Attracting third country talent Attracting people from third countries with the skills needed



Who is involved in the Year?



European Institutions

- European Parliament
- European Commission: DG EMPL and other DGs: initiatives, support with communication and engagement
- EU agencies, such as CEDEFOP, ETF, ELA
- Commission Representations and EP Information Offices
- CoR, EESC, EIB...



- Strong involvement of Member States.
- Appointment of national coordinators to raise awareness, shape the Year, coordinate actions.
- Close cooperation with the Presidencies.
- Implementing bodies such as ESF+ managing authorities



- Engaging a wide range of stakeholders
- Social partners
- Civil society
- Companies, chambers of commerce and industry, education and training providers, individuals



International Actors

- OECD, UNESCO, ILO
- Cooperation with third countries, in particular partner countries



Real People, Real Skills

- 200 inspiring stories now LIVE!
- Read the stories of people from all over Europe who have reshaped their careers and lives through upskilling and reskilling programmes <u>here</u>.
- First of ten social media posts to be published on April 10 Share our posts and website with your network!





Local Outreach Activities



Influencers

16 influencer activations in 13 Member States representing 4.3 million followers





Events

58 events in 23 Member States representing 1.3 million visitors

Media Partnerships

35 media partnerships in 17 Member States representing 6 million readers

National Events

- Over 2000 planned so far
- Spread across 42 countries. Most events in Belgium, Italy, France, Spain, Germany and Ireland
- Around 70% of the events address more than one of the specific objectives of the Year. Investment in skills and skills relevance are addressed the most.



Measuring impact

People who have seen our communication campaign:

- Are more likely to know about the European Year of Skills (33% vs 7%)
- Are more **aware** of EU skills policies (from 26% to 53%)
- Are more eager to participate in trainings (64% vs 19%)
- Have increased **trust** in the EU as an actor for social change (86% vs 67%)

Results are especially impactful for <u>NEETs</u> who increased most in awareness (15% to 73%), willingness to participate (10% vs 45%) and trust in the EU (68% vs 90%)



Participation or intention to participate in EU initiatives for training or skills improvement in the next 6 months.





EU flagship events

- 9 May: **The European Year of Skills Festival**
- 8 9 June: Making Skills Count
- 23 27 October: The VET week
- 16 17 November: • The Employment and Social Rights Forum
- 23 February 2024

Meet the Champions of excellence

Upcoming:

30 April 2024: EUROPEAN The European Year of Skills – What Comes Next? YEAR OF SKILLS

Evaluation of the Year

- **Evaluation report** to be submitted to Council and Parliament in May 2025.
- Content: **implementation and results +** ideas for **further common skills endeavours**
- Your help needed! Monitoring survey:
- Running in May
- For stakeholders and EU institutions
- Short questions on implementation and results



2. EU SKILLS POLICY

FURO

EUROPEAN

YEAR OF

SKILLS

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European Skills Agenda

- Strengthening skills intelligence
- National Skills Strategies & Public Employment Services
- Recommendation on VET
- European Universities
- Skills to support twin transitions
- STEM graduates, Entrepreneurial & transversal skills
- Skills for Life

• A Pact for Skills including Blueprints

Joining forces

Skilling

for a job

Unlocking

investment



 Framework to unlock Member States' and private investments in skills



Skills Agenda: highlights I

Pact for Skills:

- Over **2,500 members, 21 large-scale** partnerships (LSPs)
- Collectively LSPs commit to train over 25
 million people by 2030
- 310M€ investment so far
- **48,000 training programmes** developed or updated so far

Individual Learning Accounts:

- **15 Member States** are working on schemes of Individual Learning Accounts, in most cases supported by the ESF+ and RRF.
- A Mutual Learning Programme with BG, FR, HR, IT, PL, RO + HU as observer was concluded in 2023, in 2024 new round commenced with CY, EL, LV, LT, SK, MT + DE and NL as observers



Skills Agenda: highlights II

European Alliance for Apprenticeships (EAfA):

• A multi-stakeholder platform with more than 400 members from 40 countries and over 2.5 million apprenticeship opportunities offered since 2013

Erasmus+ Centres of Vocational Excellence (CoVEs)

- 400 million euros through Erasmus+ to fund 100 CoVE projects lasting 4 years in the period 2021-2027.
- In the period 2021-2023, 41 projects have been selected for funding.



EU Tools to support skills policy





EU Networks and mutual learning

European Alliance for Apprenticeships

Digital Skills & Jobs Platform

Pact for Skills

> EPALE

Working Group on VET & adult learning

 Network of National Coordinators for adult learning EUROPEAN

YEAR OF

SKILLS

16



European Alliance for Apprenticeships



PALE



Funding instruments to support skills policy



Recovery and Resilience Facility



RECOVERY AND RESILIENCE FACILITY

Digital Europe Programme













Analytical references at EU-level

Education and Training Monitor

> OECD support to national Skills Strategies

Eurofound

> The European Semester

CEDEFOP

Joint Research Centre (JRC)

Eurydice

