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D. 5.1

Training scheme for skilling cluster employees in green and digital transition

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Executive Summary

The deliverable aims to introduce scheme for training in competencies and skills for green and digital transition is an initiative aimed at equipping individuals with the necessary knowledge and abilities to navigate clusters partners members in the context of a rapidly changing economy.

This scheme recognises the importance of developing skills and competences that are relevant to the transition towards a green and digital economy, which were finds by desk research and our survey within European SMEs in MTA ecosystem.

The training scheme encompasses a range of competencies and skills, including **digital literacy, data analysis, project management and leadership and sustainability practices** and last but not least a legislative framework which is currently evolving in a turbulent way. ESG reporting and knowledge about upcoming legislation is one of the services which are very demanded in MTA sector. It seeks to bridge the gap between the current workforce and the requirements of the green and digital economy by providing training programs that are accessible, practical, and relevant with guidance and help of Automotive Skill Alliance a Large Pact for Skill.

The schemes will be individually designed to support cluster employees based on Auto evaluation competence matrix which is distributed among RESIST partners. Everyone can quickly make an assessment by evaluation grid, where clusters or individuals can find their training needs for their individual training plans.

Green and digital transition requires a multi-disciplinary approach, and thus offers a range of training programs that cater to different industries and sectors. However, in this document we focus on evaluation of basic training needs to enabling cluster employees to become well advisors especially to European SMEs in MTA ecosystem.

Overall, the scheme for training in competencies and skills for green and digital transition is a vital step towards building a more sustainable and innovative economy that is equipped to meet the challenges of the 21st century. It represents a significant investment in human capital and seeks to empower individuals with the knowledge and skills they need to succeed in an ever-changing economic landscape.

We believe that competence grid outcome could be modified and used within all RESIST partners and EACN network easily.

1. Introduction

1.1 Purpose of Document

In summary, developing a training scheme for adopting twin transition training is essential for addressing skills gaps, meeting industry demands, staying competitive, contributing to sustainable development goals, and fostering innovation. By investing in training and development, clusters can ensure that clusters employees are prepared to succeed in the rapidly evolving economy and becoming a well advisor for MTA ecosystem SMEs.

1.2 Intended audience

This deliverable is mainly addressed to the following audience:

- The consortium partners, so they can understand better training needs in their clusters
- Clusters, relevant associations, companies and any other stakeholder working in our target ecosystem or with interest in the involved sectors, so they can access to the main conclusions of our report, send contributions or identify collaboration opportunities or synergies within the scope and objectives of the RESIST initiative.
- Our project officer in the European Commission, to review that this deliverable contains the main aspects to be covered and fulfils the objectives established in the RESIST proposal.

2. The Mobility, Transport and Automotive (MTA) and twin transition training

The mobility ecosystem defined in the EU Industrial Strategy covers the entire industrial value chain for automotive, rail and waterborne industries as well as associated retail and water and land transport services. It employs 14.6 million people and represents 7.5% of EU value added (EUR 906 billion). It includes 1.8 million firms, 99.7% of which are SMEs.

2.1 Green transition

The transition towards a clean, circular, and climate neutral economy is crucial for the prosperity of the European industry and society. The European Union and its Member States have established the green transition as a significant priority. The European Green Deal was set as the new growth strategy for Europe and was confirmed and reinforced by the EU Recovery Plan

Europe should put in place adequate mechanisms to accelerate the transition towards a green economy. An integrated approach is needed to coordinate different stakeholders locally and across industrial ecosystems. Start-ups need to grow, and SMEs scale up in to mid-caps and large companies. Clusters need to support this process. There is also a need for orchestrators of supply and demand for green solutions and smart tools for public administration to implement and adapt legislation effectively.

They can identify and support their members' access to green technologies, innovation, business solutions, dedicated funding and markets and thus facilitate the green transition. They build trustful relationships among their members, which is crucial to accelerate green innovation and massive uptake in the world.

2.2 Agents of change

Policymakers at all levels need to recognise the value of clusters as effective intermediaries for accelerating the green transition. Clusters must act as agents of change in favor of the green economy. Cluster organisations facilitate interactions in the local environment. They analyse and articulate the needs and ambitions for change and constitute an ideal forum to influence the creation and the implementation of relevant policies.

On the one hand, policymakers need to assign to cluster organisations a relevant role in the design, development and implementation of environmental policies. On the other hand, cluster support programmes should have a stronger focus on encouraging and enabling clusters to consult their members and represent their views on issues related to the green transition.

2.3 Twin transition

The twin transition refers to the simultaneous transition towards a green and digital economy. The European Union recognises the importance of both transitions and has identified them as major priorities in its policies and strategies. The twin transition is expected to generate significant economic growth, job creation and competitiveness, while contributing to the reduction of greenhouse gas emissions and the achievement of climate objectives.

Clusters can play a critical role in supporting the twin transition. Cluster organisations can promote the development and adoption of digital and green technologies, solutions and business models. They can facilitate collaboration and partnerships among different actors in the ecosystem, including start-ups, SMEs, large companies, research and innovation centers, public authorities and civil society organisations.

Clusters can also provide their members with access to funding, markets and international networks, as well as training and skills development opportunities. They can leverage their expertise and knowledge to identify opportunities and address challenges related to the twin transition.

2.4 Training for the MTA sector

The transition towards a green and digital economy requires significant changes in the skills and competencies of the workforce. The MTA sector is no exception. The MTA workforce needs to acquire new knowledge and skills related to green and digital technologies, as well as to **circular economy principles, sustainable mobility and customer-centric services**.

Training and upskilling programs are crucial to enable the MTA workforce to adapt to the changing demands of the sector. These programs should be designed to address the specific needs and challenges of different categories of workers, including **technicians, engineers, managers, and front-line workers**.

Cluster organisations **are playing a key role in designing, developing and implementing training and upskilling programs for the MTA sector**. They can bring together different actors in the ecosystem, including education and training providers, companies, public authorities and social partners, to identify skills needs and gaps, develop curricula and training materials, and deliver training and upskilling activities available as like MOOC courses on Automotive Skill Alliance platform, which is one of the goal of the RESIST project.

Automotive Skills Alliance (ASA) is a Large-Scale Partnership under the Pact for Skills (formally association, NGO) with the goals to connect various types of stakeholders – industry, education training providers, regions, social partners and other in order to collaborate on the skills intelligence in the automotive-mobility sector. It is a platform for members to discuss their needs, network and gain knowledge about re-/up-skilling and other needs in the automotive mobility sector.

2.4 Developing a training scheme for cluster employees

We see that is essential to support the transition towards a green and digital economy in the Mobility, Transport and Automotive (MTA) sector, which facing significant challenges related to climate change, sustainable mobility, and digitalisation. Therefore, it is important to equip the MTA workforce with the necessary skills and competencies to adapt to these changes.

Training and upskilling programs can enable the MTA workforce to acquire new knowledge and skills related to **green and digital technologies, circular economy principles, sustainable mobility, and customer-centric services**. In RESIST project we will develop a MOOC courses, which will be designed to address the specific needs and challenges of different categories of workers, including technicians, engineers, managers, and front-line workers.

Cluster organisations can play a crucial role in designing, developing, and implementing training and upskilling programs for the MTA sector. **Cluster employees can benefit from such training schemes as they can acquire new skills and competencies to better support their members in the transition towards a green and digital economy**.

Therefore, developing a training scheme for cluster employees is necessary to ensure that they have the awareness about basic skills and competencies to support their members in the MTA sector to successfully transition to a sustainable and competitive future.

3. Findings

Our study of competences needed for cluster employees, which can become well advisors towards twin transition, considers mostly and fundamentally the results of the following research and reports:

- Cluster4Smart research report, the study „Cluster Management Abilities, Capacities, Skills and Competences Towards A Smart Industry" (2020)
- The European Expert Group on Clusters (2022)
- Study on key competences State of the Art of project PASS (2023)

The competences required from the management of a cluster driving towards a twin transition were set out after analysing the results and findings of the above-mentioned surveys and reports taking into account the RESIST survey D2.1 and considering the current trends defining the European cluster ecosystems, such a close collaboration with Automotive Skill Alliance and European Cluster Alliance.

3.1 An overview of basic competences for cluster employee

The following table summarises the list of common skills related to the occupation of a cluster employees.

Essential skills and competences:

- develop professional network
- manage members
- manage membership database
- provide membership service
- recruit members
- use communication techniques (EU, region, policymakers)

In Autoklatstr we have identified other essential skills:

- strategy development
- Knowledge of the MTA sector

Optional skills and competences:

- deal with pressure from unexpected circumstances
- handle complaints
- make independent operating decisions
- show responsibility
- stimulate creative processes

- write leaflets
- write work-related reports

In Autoklatstr we have identified other optional skills:

- facilitation and mediation of meetings

The above skills and competences substantiate basic competences required in managing and administrating a cluster and at least

3.2 An overview of key competences for the MTA sector

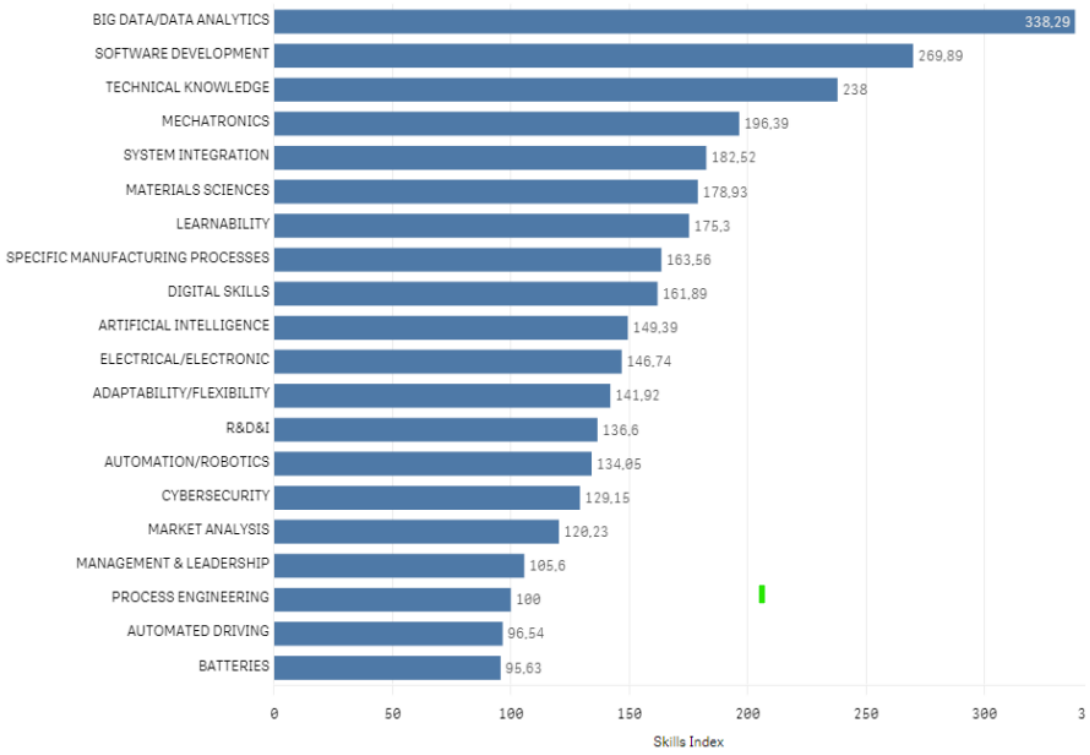


Figure 1 shows the top 20 overall skills identified and provided by ASA. Their study, shows “technical/hard” – such as big data analytics, software development, digital skills, artificial intelligence (i.e., those more technology related), and those that are “softer”: “learnability”, “adaptability/flexibility”, “management and leadership”.

- data analytics
- software development

- technical knowledge
- mechatronics
- materials science
- learnability
- specifics manufacturing processes
- digital skills
- artficial intelligence
- R&D&I
- Automation/robotics
- Cybersecurity
- Market analysis
- Management and leadership
- Process engineering
- Automated driving
- Batteries

We could find as well emerging competencies for MTA sector, which are linked between technology and demand of skills is evident. It is important to state that according to the World Economic forum the most important barrier to the adoption of new technologies is indeed the skills gaps in the local labour market and among organisation's leadership.

When it comes to the up/reskilling process, companies have ranked the following as the ones most in need of up/reskilling:

- Analytical thinking and innovation
- Critical thinking and analysis
- Technology use, monitoring and control
- Leadership and social influence
- Active learning and learning strategies
- Complex problem-solving
- Reasoning, problem-solving and ideation
- Quality control and safety awareness
- Persuasion and negotiation
- Management of financial, material resources

The growing attention towards sustainability, green mobility and sustainable transport is also affecting the automotive sector. Apart from the increasing requirements of sustainability specific skills, students and workers will need to be able to apply such skills transversally, with a horizontal knowledge and expertise on more than one subject.

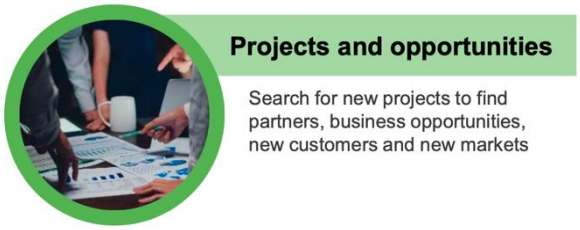
Regarding Mobility trends found in RESIST survey which has been grouped into four main themes. In the survey, companies had three boxes where they could mention their main problems or needs they have detected. Among all the answers and thanks to the similarity between them, we have been able to group them.

"Training and employability", where we have included all answers referring to the need to attract knowledge and keep the best qualified employees on their own companies.

Some of the answers were: **"Maintaining qualified employees", "availability of qualified employees", "talents acquisition", "involvement and knowledge of new hires", or "learning curve".**

Obviously, "Prices and materials" has been one of the most insistent themes, as can be understood throughout the results. The high demand for materials and their low offer, the dependence on other countries such as China and the USA together with rising prices are the most common concerns.

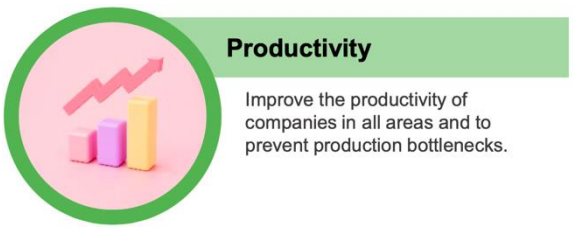
Some of the answers were: "**Price increases", "price speculation on the European steel market", "tax load", "reduce costs Electronic components shortage", "volatility of supply chain and demand", "raw materials increase", or "dependence from other continents regarding material and energy".**



On the other hand, we also got many replies related to the promotion of collaborative projects and expansion into other markets and even industries where companies can develop and look for new customers.

Some of the answers were: "**Identify business opportunities in other industries", "find R&D partners or companies to form consortiums", "new customers", "open to new markets or countries", "new projects in UE", and "increase destination sectors".**

And finally, "Productivity and production effectiveness" has been one of the most repeated topics. Companies are interested in finding ways to increase their production in all areas, especially to expand into new markets and avoid bottlenecks in their management that may lead to the interruption of their work.



Some of the answers were: “**Productivity”, “administrative procedure problems”, “slowness of the European Union”, “increase productivity”, or “increase efficiency in all areas”.**

We consider these findings as advanced skills and competences in the auto evaluation competence matrix for cluster employees. Those skills are optional and does not require to be in cluster. However, it is much more appreciable that someone from the cluster employees has at least basic knowledge and awareness about current trends especially towards green and digital transition.

We will in RESIST project develop MOOC courses for green and digital transition, which we will develop with a help and guidance of ASA.

Developing MOOC courses on green and digital transition itself can help cluster employees to upskill and reskill in the areas of sustainable mobility, circular economy, and digitalisation.

4. Conclusions and next steps

In conclusion, the MTA sector is a critical component of the European industrial ecosystem, employing millions of people and generating significant value added. The transition towards a green and digital economy requires the active involvement and engagement of different stakeholders, including cluster organisations, policymakers, companies and workers. **Cluster organisations can act as agents of change and facilitate the twin transition by promoting collaboration, innovation, and skills development in the MTA sector**.

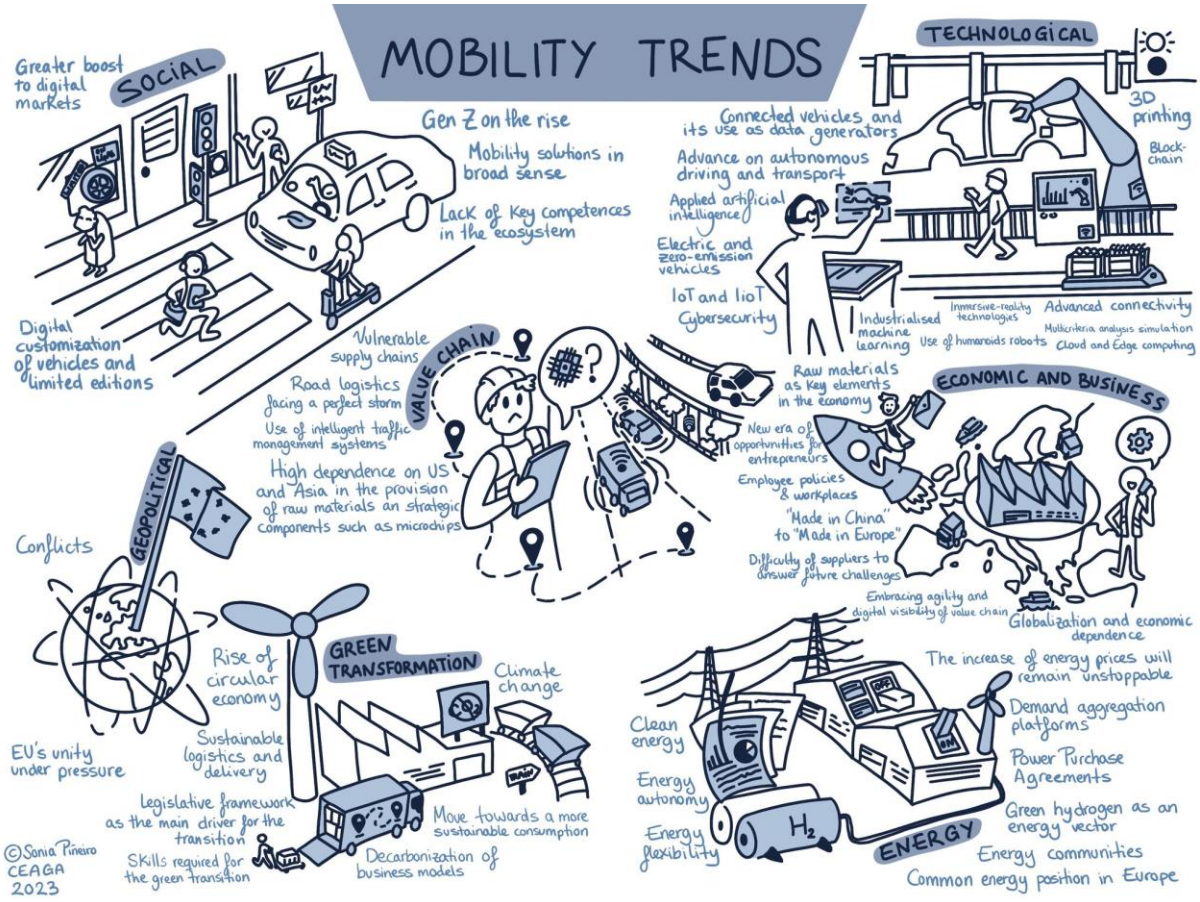


Figure 2: Main trends in mobility

Annexes

Annex 1: Auto evaluation tool

Annex 1

An auto evaluation tool

A competence matrix, which can be made by the cluster employees themselves at any time during the RESIST project, serves as a suitable tool for a basic assessment of the cluster employees' competences towards common, MTA advanced and twin transition competences.

We have identified a total of 5 levels of knowledge, we assume that if some of the competences are at 0, this is an indication that we need to seek appropriate training to get to at least level 1: awareness.

	Levels
0	**No knowledge**
1	**Awareness:** understanding of basic knowledge, abilities/skills and their practical application.
2	**Practitioner:** good knowledge, experience of the competency/skill. Able to apply knowledge and expertise of the competency/skill and share it with others, including using the most appropriate tools and techniques for the solution.
3	**Expert:** the expertise or ability/capacity to develop and apply procedures and skills as an individual and/or provide a qualified opinion to a team. A recognised expert and advisor in the development of solutions and ideas, including methods, tools, techniques, guidance or mentoring others in best practices in the use of specific knowledge and skills.
4	**Lecturer:** able to teach others a given competence. Expert in the field with up-to-date knowledge and skills.

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Skill and competences matrix for cluster employee within MTA ecosystem

Job roles	Partner	Name	Contract	Common – Essential								Common – Optional							
				develop professional network	*manage members*	manage membership database	*provide membership service*	recruit members	use communication techniques (EU, region, policyma	strategy development	Knowledge of the MTA sector	deal with pressure	handle complaints	make independent operating decisions	show responsibility	stimulate creative processes	write leaflets	write work-related reports	facilitation and mediation of meetings
Cluster manager	Autoklastr	Libor Dobeš	FT																
Senior Project Manager	Autoklastr	Adam Priechodský	FT																
Senior Project Manager	Autoklastr	Lenka Juříčková	FT																
Junior Project Manager	Autoklastr	Jana Nevřelová	FT																
Administrative	Autoklastr	Pavla Kudělková	PT																
Internship	Autoklastr	Karel Břemek	PT																
Researcher	Autoklastr	Pavel Vavřík	PT																

Name	Advanced MTA ecosystem – Optional																
	data analytics	software development	technical knowledge	mechatronics	*materials science*	*learnability*	specifics manufacturing processes	digital skills	artficial inteligence	*R&D&I*	Automation/rebotics	*Cybersecurity*	*Market analysis*	*Management and leadership*	*Process engineering*	*Automated driving*	Batteries
Libor Dobeš																	
Adam Priechodský																	
Lenka Juříčková																	
Jana Nevřelová																	
Pavla Kudělková																	
Karel Břemek																	
Pavel Vavřík																	

Name	Green and digital – Optional						
	Sustainable logistic processes and product delivery	Decarbonization - ESG reporting	Euro 7 - emission targets for transportation	Climate change SDG goals	The rise of the circular economy	European Green deal, Fit for 55	future of sustainable consumption
Libor Dobeš							
Adam Priechodský							
Lenka Juříčková							
Jana Nevřelová							
Pavla Kudělková							
Karel Břemek							
Pavel Vavřík							

Table 1: Skills and competences matrix

An example of evaluation within Autoklastr employees identified where training is needed. It is obvious that is not possible to reach all advanced MTA competences and skills inside Autoklastr and we can see that green and digital competences and skill are also less developed.

The evaluation competence grid was developed under the report of RESIST deliverable 5.1 and is completely free to use to other clusters.

Bibliographic references

Listed below are all the studies, research documents, reports and other publications consulted to carry out this report.

- Cluster4Smart research report, the study „Cluster Management Abilities, Capacities, Skills and Competences Towards A Smart Industry" (2020) https://irp-cdn.multiscreensite.com/bcb8bbe3/files/uploaded/doc_740.pdf
- The European Expert Group on Clusters (2022) https://clustercollaboration.eu/sites/default/files/event_calendar/20221214_ECCP_EUClusterTalk_Expert%20Group%20on%20Clusters_Summary.pdf
- Study on key competences State of the Art of project PASS (2023) https://project-key-competence.eu/wp-content/uploads/2023/03/PASS-D3.1-Study-on-key-competences-state-of-the-art-FINAL-v2-1.pdf