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CirCLER – Circular Economy Transition Manager: guiding companies of the furniture value chain to deploy their transition strategy for a more circular economy

CirCLER

Co-funded by the European Union

D3.1

CE transition manager KSC needs

WP 3 / Task 3.3

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SUMMARY TABLE

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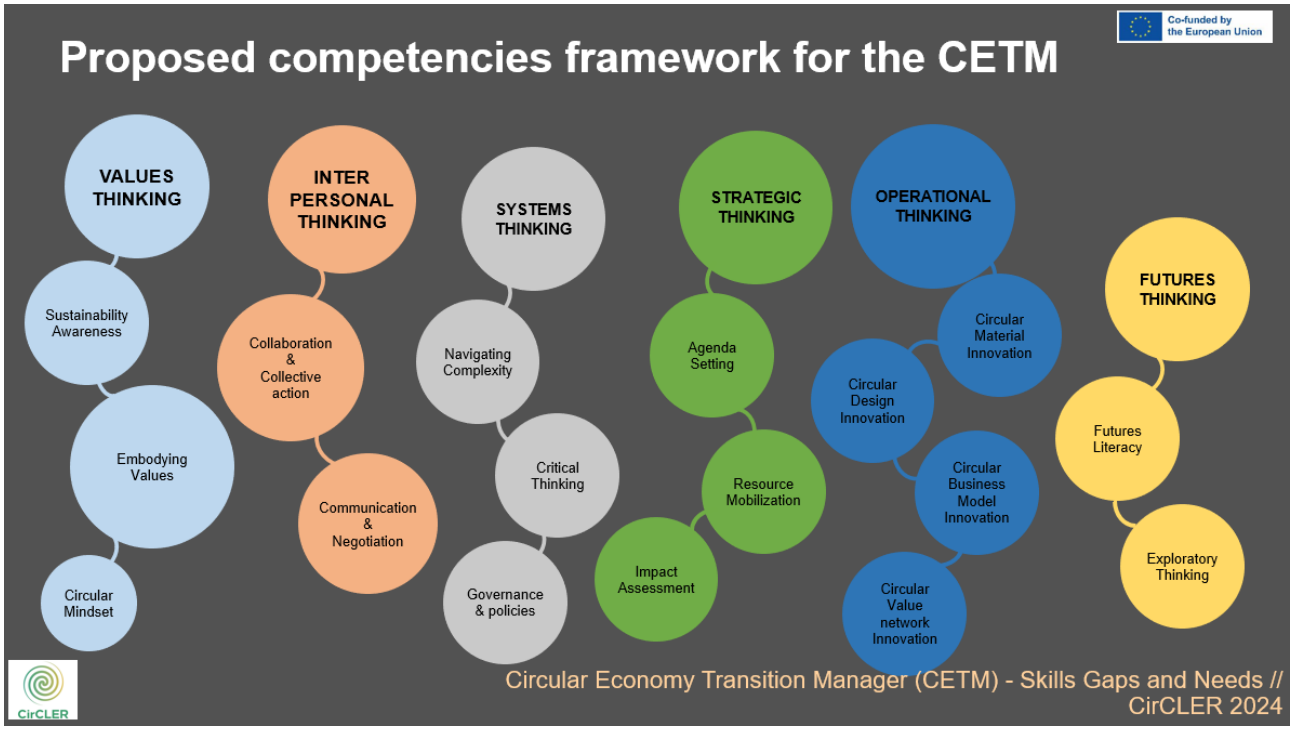
1. Introduction

The CirCLER partnership, under the leadership of P1 – AMBIT, implemented the task T3.1 - Desktop Survey and under the leadership of P15 – UNFU held the T3.2: CirCLER Experts Workshop. The aim of this process was to fine-tune and validate the skills and knowledge needs within the sector and related with the new occupational profile of the Circular Economy Transition Manager (CETM) for the EU furniture sector.

As first step, AMBIT CirCLER technical team prepared the definition of this new occupational profile, which follows the style of ESCO (https://esco.ec.europa.eu/en) and has been formulated with the purpose of requesting its inclusion in the ESCO database later on.
Furniture sector Circular Economy Transition Managers (CETM) are responsible for leading the transition of sector companies towards more circular practices and business models along their whole value chain and ensuring their sustainability. They provide assistance in the design and implementation of plans and measures along different company departments in order to ensure that products, processes and organization comply with given and future environmental regulations; they promote the adoption of circular strategies, practices and voluntary standards/certificates at all levels; they foster circular design approach and the adoption of circular business models; they inspire the company's environmental communication and employees training; and they monitor and report on the implementation of circular strategies within the company supply chain and business processes. They analyse and re-address issues linked to manufacturing processes, including materials, waste, energy and product traceability and end-of-life.

The survey questions were based on the CirCLER competencies framework proposal of the Circular Economy Transition Manager (CETM) for the Furniture Sector, which was developed with the key contributions of P10 - UVA team.
This framework is divided in six general areas of competencies, each one of them has different specific sub competencies, as can be seen in the figure 1 below.

Figure 1 - Competencies framework for the CETM



All survey participants received this document presenting the profile and the CirCLER competencies framework, which can be downloaded at the following link: competency framework for the CETM

All partners contributed to find and invite experts in different fields that overall could provide complementary and synergic inputs to the survey.

The second step was the organization of T3.2 CirCLER Experts Workshop by the P15 - UNFU with the support and guidence of P1 - AMBIT. The workshop was held online on the 26th of June and it involved 37 experts among partners staff, the two external project experts, and other 8 external experts invited by some of the project partners. The aim of this workshop was to evaluate and validate the survey outcomes and identify if any additional specific skills, knowledge or competencies are missing in the CirCLER competencies framework.

2. Presentation of the survey outcomes

This part of the report presents the main results and outcomes of the survey exercise that have been implemented during the month of May 2024 across all partners countries and some other ones.

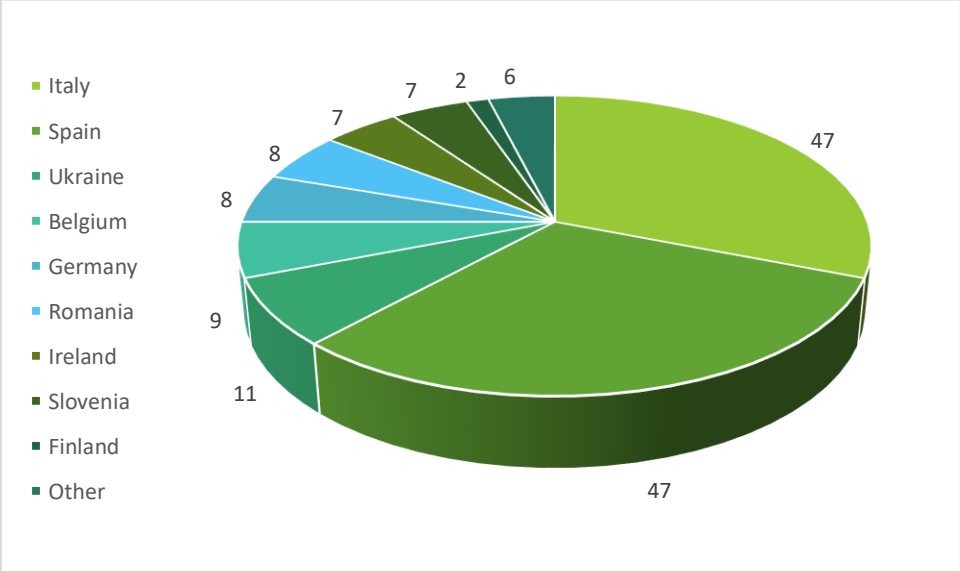
2.1 General presentation of the survey results

In the following section we provide information about the professionals that answered the survey. We received a total of 166 answers to the survey, and we validated for different reasons only 153 of them.

Country of the respondents

Figure 2 - Country of the respondents

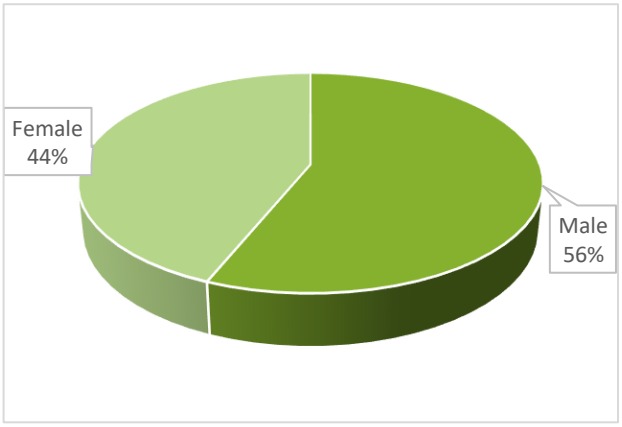
Italy	47
Spain	47
Ukraine	11
Belgium	9
Germany	8
Romania	8
Ireland	7
Slovenia	7
Finland	2
Other	6



Gender of the respondents

Figure 3 - Gender of the respondents

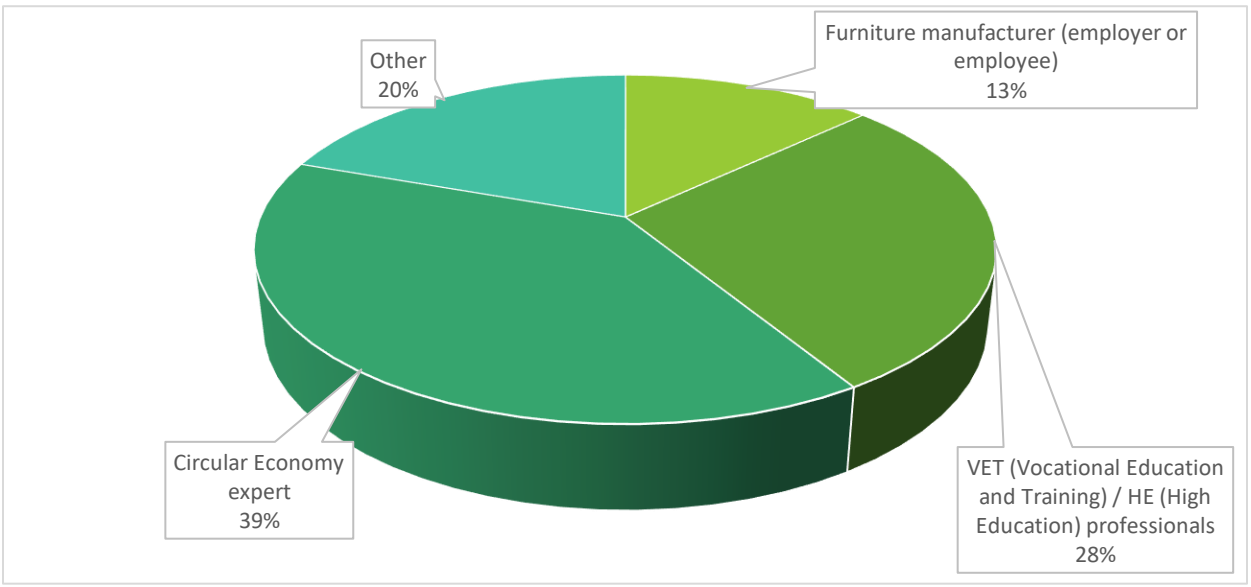
Male	86	56%
Female	67	44%



Type of professional

Furniture manufacturer (employer or employee)	20	13%
VET (Vocational Education and Training) / HE (High Education) professionals	43	28%
Circular Economy expert	60	39%
Other	30	20%

Figure 4 - Type of professional



Typology of jobs or position of the professionals that participated

HE professors, lecturers, teachers and researchers, medium / top managers and CEOs from furnishings sectors companies, consultants in circular economy, clusters managers and employees, designers, environmental managers, environmental department directors, innovation managers and project managers cover the 98% of the respondents' positions.

Typology of entities

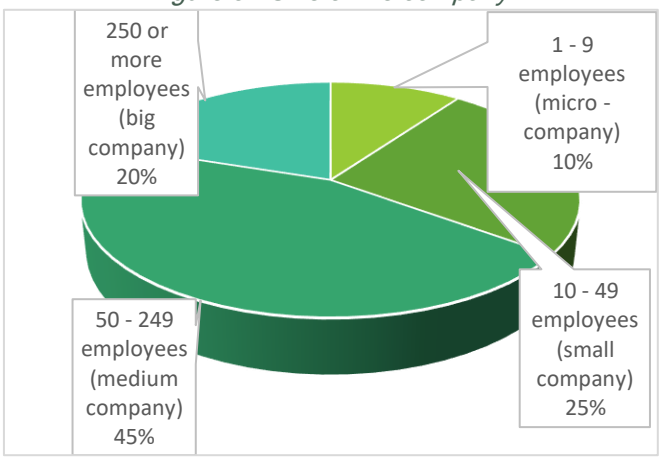
The typology of entities from which the respondents come from were:
Universities, Sectoral Clusters, consultancy companies specialized in Circular Economy, Furnishings sector companies, Research Centres, VET providers (initial and continuous), NGOs linked to the sector or to circular economy.

For Furniture manufacturers

Size of the company

Size of the company	N.
1 - 9 employees (micro - company)	2
10 - 49 employees (small company)	5
50 - 249 employees (medium company)	9
250 or more employees (big company)	4

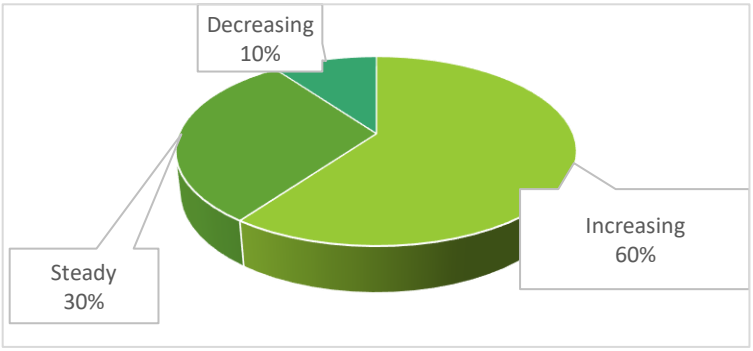
Figure 5 - Size of the company



The average turnover over the last three years of your company was...

Increasing	12
Steady	6
Decreasing	2

Figure 6 - The average turnover over the last three years

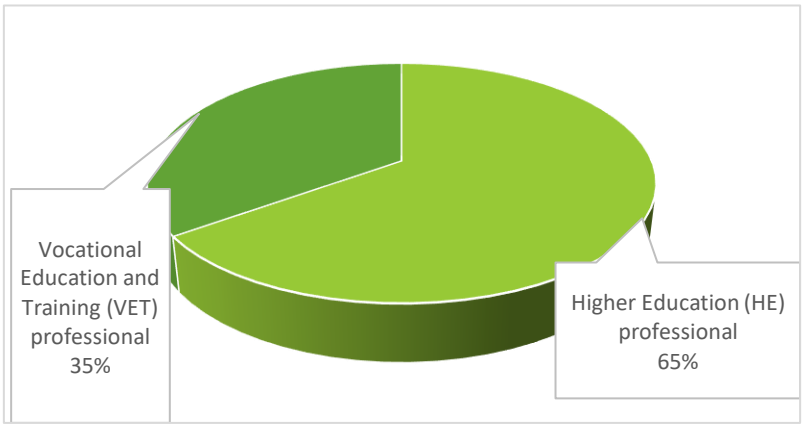


For VET (Vocational Education and Training) / HE (High Education) professionals

Type of professional:

Higher Education (HE) professional	28
Vocational Education and Training (VET) professional	15
TOTAL	43

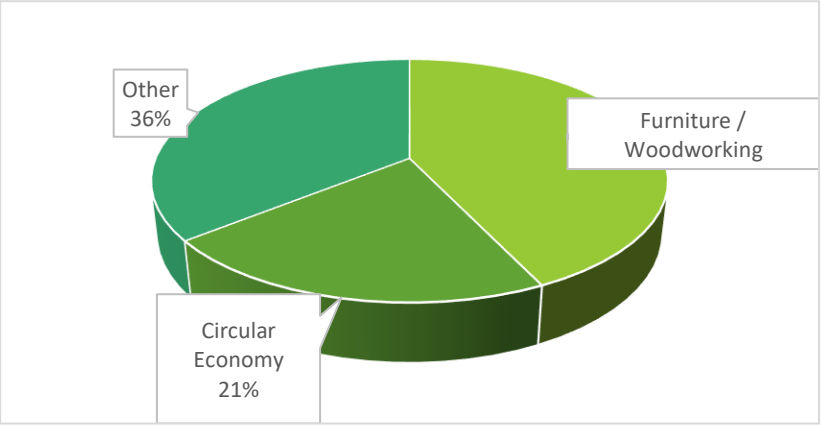
Figure 7 - Type of professional (VET and HE professionals)



Fields of studies / research:

Figure 8 - Fields of studies / research (VET and HE professionals)

Furniture / Woodworking	18
Circular Economy	9
Other	15

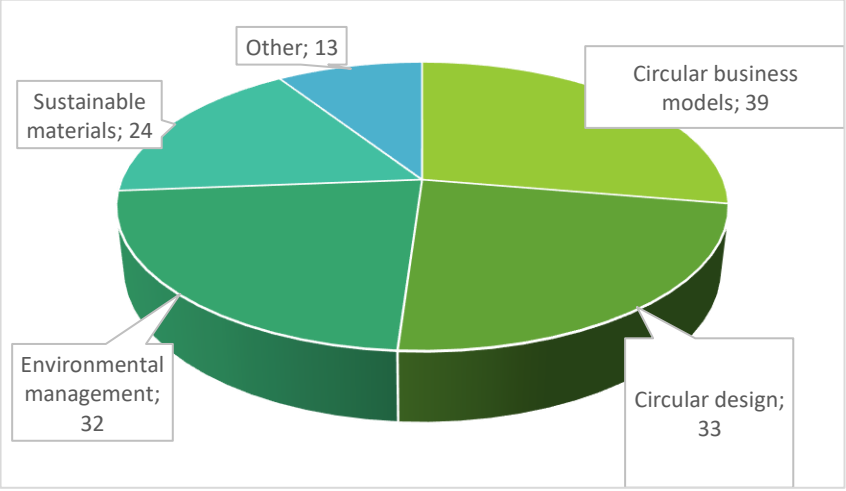


For Circular Economy expert

Field of expertise

Figure 9 - Fields of expertise / research (Circular Economy experts)

Circular business models	39
Circular design	33
Environmental management	32
Sustainable materials	24
Other	13

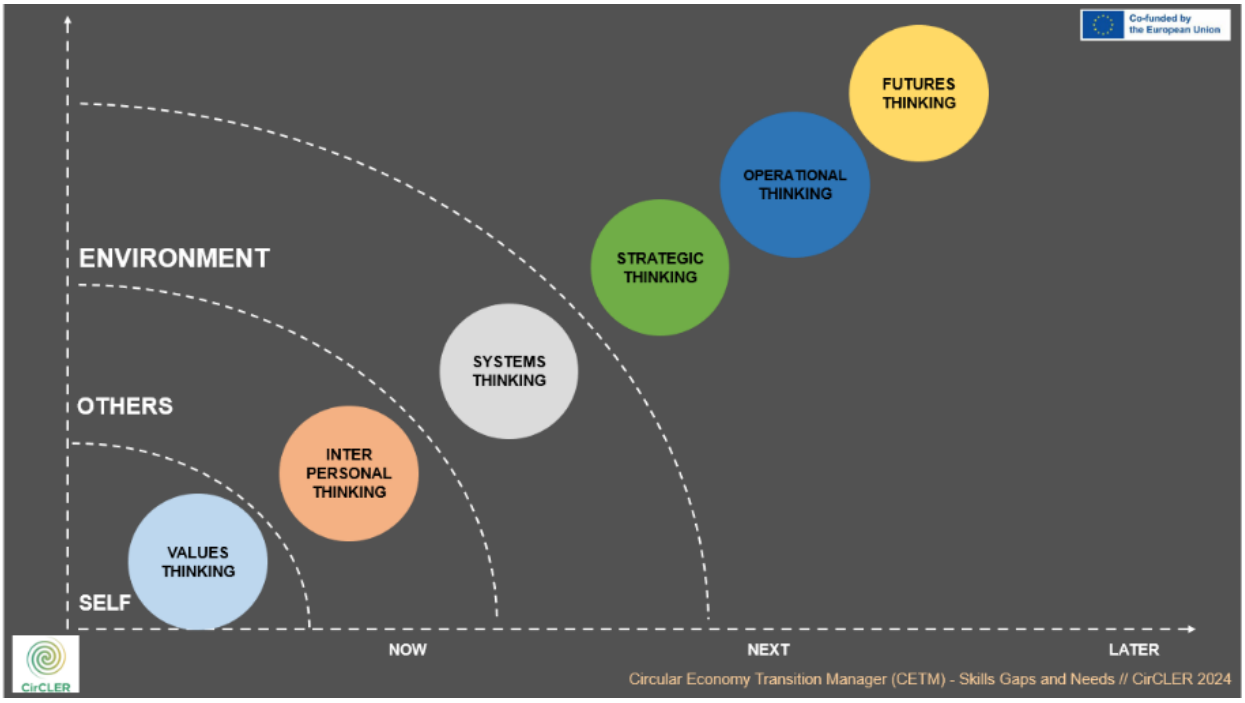


This table counts the number of professionals with expertise in each of the above fields.

2.2 Surveys results: six competences areas

This part of the survey focused its attention on the six macro areas of competencies of the CirCLER framework, and the following figure was used as a reference in this scheme.

Figure 10 - CirCLER six competencies areas



The following table shows the results for all the major competences areas evaluated by respondents. The table presents the average of all the data collected for each one of the areas by all respondents. The Importance and the Current Training Offer levels were evaluated by all 153 respondents, while the Proficiency level was evaluated only by the professionals that registered as Furniture manufacturer (employers or employees), being directly involved in the companies' management and activities, they can have a better knowledge of the level of existing knowledge among the workers in those fields.

Figure 11 - Results for the CirCLER six competences areas

	IMPORTANCE	PROFICIENCY	CURRENT TRAINING OFFER
1. VALUES THINKING	8,44	6,40	4,68
2. INTERPERSONAL THINKING	8,70	6,55	4,95
3. SYSTEMS THINKING	8,91	6,20	4,53
4. STRATEGIC THINKING	8,76	6,40	5,29
5. OPERATIONAL THINKING	8,95	6,60	5,21
6. FUTURE THINKING	8,56	6,10	4,24

They confirm that all the predicted areas are very relevant and the difference of results between them is not so relevant.

Importance

The average level assigned to all the macro areas is higher than 8,40. This confirms that all the areas covered by the CirCLER framework are considered very important by respondents and the low differences among them do not represent any significant differentiation or prioritization.

Proficiency

The average level assigned to all the macro areas is between 6,10 and 6,60. This confirms that right now, there is a sufficient level of knowledge within companies (in spite of some minor differences among the different typologies and target countries), but there are clear possibilities to improve the current situation.

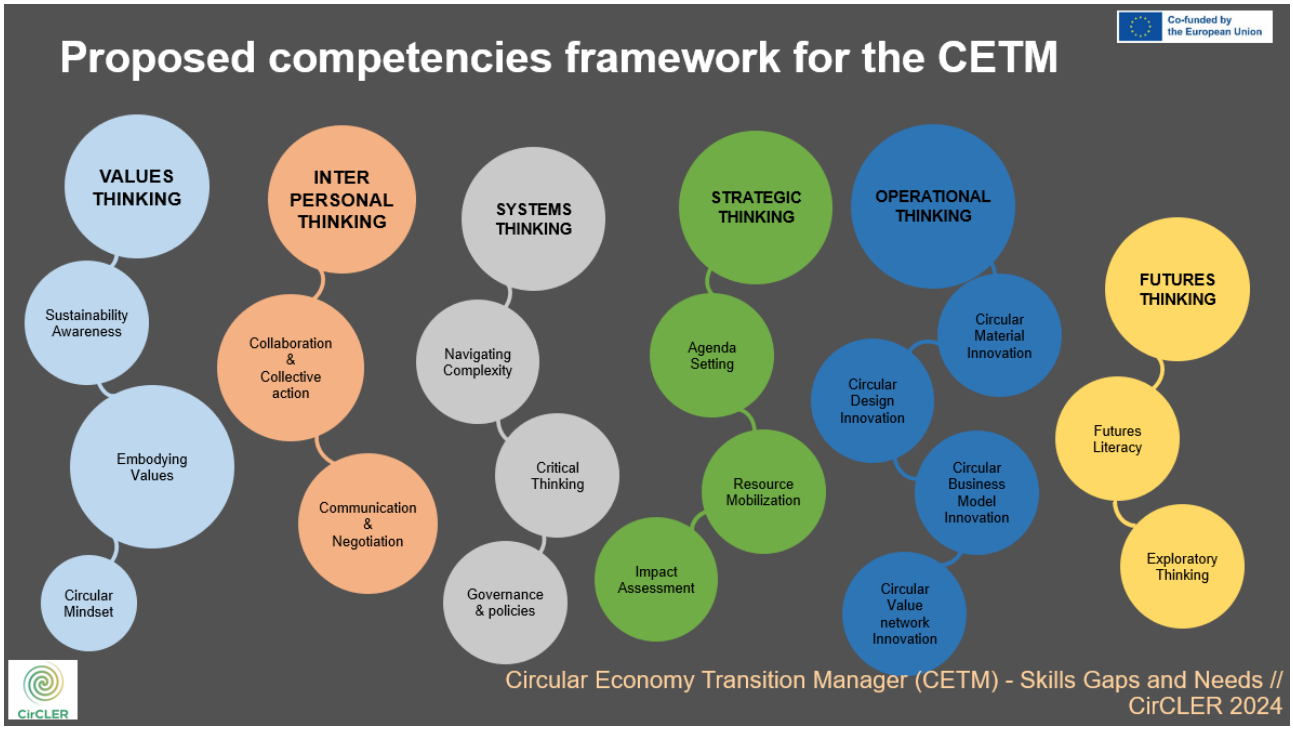
Current Training Offer

The average levels assigned to all the macro areas are between 4,24 and 5,29. This shows that there is a real need of increasing the training offer in all the areas, with a slightly higher need in Future Thinking and Systems Thinking.

2.3 Surveys results: specific competences of the six overall areas

This part of the survey focused its attention on the sub competencies identified in the CirCLER competencies framework within each of the six macro areas of competencies, and the following figure was used as a reference to better understand where they exactly stand and the link among the different areas and sub-competencies within the scheme. Also in the following cases, the Importance and the Current Training Offer levels were evaluated by all 153 respondents, while the Proficiency level was evaluated only by the professionals that registered as Furniture manufacturer (employers or employees), being directly involved in the companies' management and activities, they can have a better knowledge of the level of existing knowledge among the workers in those fields.
In all the following tables with the specific data for each subareas, the first data does not refer to the average of the data below, but to the level that resulted in the previous evaluation of the major areas of competences (Figure 11).

Figure 12 - Full scheme of the CirCLER Competencies framework for the CETM



2.3.1 Results for the Value Thinking area competencies

The following table shows the results for all the competences areas evaluated by the survey respondents in the area of Value Thinking. The table presents the average of all the data collected for each one of these sub-areas.

Figure 13 - Results for the Value Thinking area

	IMPORTANCE	PROFICIENCY	CURRENT TRAINING OFFER
1. VALUES THINKING	8,44	6,40	4,68
1.1: Sustainability awareness	8,92	6,10	6,01
1.2: Embodying values	8,38	6,40	4,60
1.3: Circular mindset	8,84	6,35	5,47

They confirm that all these proposed sub-areas of competencies are very relevant and the results of their evaluation are not so different.

Importance

The average level assigned to all these sub-areas is higher than 8,38. This confirms that all of them are considered very important by respondents and the low differences among them do not represent any significant differentiation or prioritization.

Proficiency

The average level assigned to all these sub-areas is between 6,10 and 6,40. This confirms that right now, there are sufficient levels of knowledge within furniture companies in all these sub-areas, in spite of this, data show there are clear possibilities to improve the current competencies.

Current Training Offer

The average levels assigned to all these sub-areas are between 4,60 and 6,01. This shows that there is a real need of increasing the training offer in all the areas, with a slightly higher need in Embodying values.

2.3.2 Results for the Interpersonal Thinking area competencies

The following table shows the results for all the competences areas evaluated by the survey respondents in the area of Interpersonal Thinking. The table presents the average of all the data collected for each one of these sub-areas.

Figure 14 - Results for the Interpersonal Thinking area

	IMPORTANCE	PROFICIENCY	CURRENT TRAINING OFFER
2. INTERPERSONAL THINKING	8,70	6,55	4,95
2.1: Collaboration & collective action	8,98	6,80	5,01
2.2: Communication & negotiation	8,78	6,70	5,33

They confirm that all these proposed sub-areas of competencies are very relevant and the results of their evaluation are very similar.

Importance
The average level assigned to all these sub-areas is higher than 8,78, which represents the highest minimum value among all sis sub-areas. This confirms that all of them are considered very important by respondents and the very low difference among them (=0,20) does not represent any significant differentiation or prioritization.

Proficiency
The average level assigned to all these sub-areas is between 6,70 and 6,80. This confirms that right now, there are sufficient levels of knowledge within furniture companies in all these sub-areas, in spite of this, data show there are possibilities to improve the current competencies.

Current Training Offer
The average levels assigned to the two sub-areas are 5,01 and 5,33. These show that there is a real need of increasing the training offer in both of them, with a slightly higher need in Collaboration & collective actions.

2.3.3 Results for the Systems Thinking area competencies

The following table shows the results for all the competences areas evaluated by the survey respondents in the area of Systems Thinking. The table presents the average of all the data collected for each one of the three sub-areas.

Figure 15 - Results for the Systems Thinking area

	IMPORTANCE	PROFICIENCY	CURRENT TRAINING OFFER
3. SYSTEMS THINKING	8,91	6,20	4,53
3.1: Navigating complexity	8,82	6,15	4,65
3.2: Critical thinking	9,04	6,20	4,55
3.3: Governance and policies	8,73	5,80	4,65

They confirm that all these proposed sub-areas of competencies are very relevant and the results of their evaluation are not so different.

Importance
The average level assigned to all these sub-areas is higher than 8,73. This confirms that all of them are considered extremely important by respondents and the very low differences among them do not represent any significant differentiation or prioritization.

Proficiency
The average level assigned to all these sub-areas is between 5,80 and 6,20. This confirms that right now, there are sufficient levels of knowledge within furniture companies also in all these sub-areas, in spite of this, data show there are clear possibilities to improve the current competencies.

Current Training Offer
The average levels assigned to all these sub-areas are between 4,55 and 4,65. This shows that there is a real need of increasing the training offer in all the areas, without a clear area where there is a slightly higher need.

2.3.4 Results for the Strategic Thinking area competencies

The following table shows the results for all the competences areas evaluated by the survey respondents in the area of Strategic Thinking. The table presents the average of all the data collected for each one of the following sub-areas.

Figure 16 - Results for the Strategic Thinking area

	IMPORTANCE	PROFICIENCY	CURRENT TRAINING OFFER
4. STRATEGIC THINKING	8,76	6,40	5,29
4.1: Agenda setting	8,91	6,30	4,79
4.2: Resource mobilization	8,65	5,95	4,45
4.3: Circular Impact assessment	9,01	6,25	5,46

They confirm that all these proposed sub-areas of competencies are very relevant and the results of their evaluation are very similar.

Importance
The average level assigned to all these sub-areas is higher than 8,65. This confirms that all of them are considered extremely important by respondents and the low differences among them do not allow doing any significant differentiation or prioritization, in spite of the higher value for Circular Impact assessment.

Proficiency
The average level assigned to all these sub-areas is between 5,95 and 6,30. This confirms that right now, there are sufficient levels of knowledge within furniture companies in all these sub-areas, in spite of this, data shows there are clear possibilities to improve the current competencies.

Current Training Offer
The average levels assigned to all these sub-areas are between 4,45 and 5,46. This shows that there is a real need of increasing the training offer in all the areas, with a slightly higher need in resource mobilization.

2.3.5 Results for the Operational Thinking area competencies

The following table shows the results for all the competences areas evaluated by the survey respondents in Operational Thinking. The table presents the average of all the data collected for each one of the four sub-areas.

Figure 17 - Results for the Operational Thinking area

	IMPORTANCE	PROFICIENCY	CURRENT TRAINING OFFER
5. OPERATIONAL THINKING	8,95	6,60	5,21
5.1: Circular material innovation	9,12	7,55	5,57
5.2: Circular design innovation	9,12	6,20	5,44
5.3: Circular business model innovation	8,91	5,65	4,89
5.4: Circular value network innovation	8,76	5,90	4,24

They confirm that all these proposed sub-areas of competencies are extremely important and the results of their evaluation are very similar.

Importance
The average level assigned to all these sub-areas is higher than 8,76, with two of the sub-areas higher than 9. This confirms that all of them are considered extremely important by respondents and the very low differences among all of them do not allow doing any significant differentiation or prioritization, despite the higher value for Circular material innovation and Circular Design innovation.

Proficiency
The average level assigned to all these sub-areas is between 5,65 and 7,55. This confirms that right now, there are sufficient levels of knowledge within furniture companies in all these sub-areas, and also in this case data shows there are clear possibilities to improve the current competencies. Here we can see that respondents agreed that the competencies in the area of Circular material innovation is currently quite covered

Current Training Offer
The average levels assigned to all these sub-areas are between 4,24 and 5,57. This shows that there is a real need of increasing the training offer in all these sub-areas, with a slightly higher need in Circular value network innovation.

2.3.6 Results for the Future Thinking area competencies

The following table shows the results for all the competences areas evaluated by the survey respondents in Future Thinking. The table presents the average of all the data collected for each one of the two sub-areas.

Figure 18 - Results for the Future Thinking area

	IMPORTANCE	PROFICIENCY	CURRENT TRAINING OFFER
6. FUTURE THINKING	8,56	6,10	4,24
6.1: Futures literacy	8,07	4,70	3,78
6.2: Exploratory thinking	8,41	5,40	4,19

They confirm that all these proposed sub-areas of competencies are very important, and the results of their evaluation are quite similar.

Importance
The average levels assigned to the two sub-areas are 8,07 and 8,41 being very similar among them. This confirms that both of them are considered quite important by respondents and the very low difference among the two does not allow doing any significant differentiation or prioritization.

Proficiency
The average levels assigned to the two sub-areas are 4,70 and 5,40. This confirms on one side that right now in Exploratory thinking there is (more or less) a sufficient level of competencies within furniture companies, but that in Futures literacy there is a higher need for increasing the existing competencies.

Current Training Offer
The average levels assigned to these two sub-areas are the lowest in the whole questionnaire and are 3,78 and 4,19. This shows that there is a quite important need to increase the training offer in these sub-areas, with a quite clear need for Futures literacy.

2.4 Surveys results: results of the open questions

2.4.1 Missing competences

The idea behind this question was to ask respondents if they felt that any general or specific area of competence that they considered relevant for the CETM was missing from this CirCLER Competencies Framework.
The complete question was:
Do you consider that we miss any RELEVANT competency within any of the above six areas ? If yes, please, detail it.

Experts' comments show they agree with the CirCLER framework proposal and confirm that it covers all major competencies areas needed, and not any additional one needs to be added.
The several and different comments collected mainly suggest and try to detail some specific competencies that should be integrated in the lower parts of the scheme. But analysing them, we can see that they are not new competencies not included in the framework, they are there as part (or more detailed) of the ones already presented within each sub-area identified in the whole framework.
The idea is to exploit these inputs when more details are needed to design the new joint curricula and identify the specific learning outcomes of each of the training materials that will be developed later on within the CirCLER project.
In spite of this, we consider important to highlight some concepts that were raised in the answers:

- The importance of integrating digital and technical skills into the curriculum as they are considered important for the concrete deployment of CE practices.
- The importance of transversal/soft skills to successfully address and guide all the organizational issues that can arise due to the interpersonal relation among the stakeholders involved.
- The importance of communication capacities both toward internal and external actors.
- The importance of knowing the current and forthcoming legislations affecting the raw materials, the processes, the LCA of products, the emerging business models, etc.

1) *In **Interpersonal Thinking**, I would more explicitly stress the competency of being able to penetrate below the surface and discover the true underlying interests and motivations of all included stakeholders. This is the basis for **good negotiation** and for getting the buy-in of stakeholders. It's not just about communicating sustainability, but about asking really good questions and listening skills. I would also mention **emotional intelligence** in terms of being able to hear and include perspectives that may contradict your own and put your own assumptions and mental models under question.*
2) *In **Systems Thinking**: I would add the competency of **recognising systemic structures and patterns of behaviour** that are causing the issues we're dealing with. There are very useful frameworks, concepts and tools for that (feedback loops, causal loop diagrams, systems archetypes etc...). Also, an important thing is the skill of examining personal and collective mental models and assumptions - they are the key to understanding behaviours of social systems."*
3) *I believe that **system thinking** could be considered a standalone competency rather than a competency area. Additionally, **adaptability** is another competency that could be included in one of the areas. **Digitalization** can contribute to achieve circularity and sustainability. Therefore, it*

would be beneficial to consider and incorporate some of the competencies from the field of digitalization for this purpose.

4) *How to **deal with the change resistance** of managers, colleagues, clients, partners*
5) ***Communication competency** to explain, simplify concepts and convince*
6) *A common mainstream issue, in all competencies and skills, regarding **the upstream and downstream consciousness** beyond the knowledge of company premises.*
7) *Technical calculation of **CO2 "Footprint"** and of the **LCA***
8) ***Change management skills***
9) ***Conflict resolution***
10) ***Criticism and ability to discern** what will really be good for the environment from what is just a commercial construction*
11) ***Environmental awareness**. I do think that the GreenComp framework developed by the EU has a competence that explicitly implies understanding the environmental impact of actions.... Promoting Nature, I think it is called. I believe this competence is needed to correctly shift current practices to ones that allow for environmental regeneration.*
12) *I consider **digital skills** as one of the key and end-to-end professional competencies of a modern professional in any field, for Circular Economy Experts and other professionals as well, in particular, it concerns (1) **ICT proficiency**, (2) **information, data and media literacies**, (3) **digital creation, problem solving and innovation**, (4) **digital communication, collaboration and participation**, (5) **digital learning and development**, (6) **digital identity and wellbeing**. Core digital skills are the skills and knowledge needed to undertake everyday digital activities relevant to any job role. This can include finding and managing digital information, sharing personal data digitally, using digital technology and making use of e-learning.*
13) *I don't see in the proposal a clear reference to **Technological Thinking**, that is, how technology can support circular transition (e.g. digitalization, etc.)*
14) *I guess it's probably implied but I'd stress more explicitly the importance of **norms and regulations** for actually making circularity happen.*
15) *"I would include content related to:*
    *a. **Degrowth**: the need to change consumption patterns and behaviours in society and how companies have a crucial role in doing so*
    *b. **Financial risks and opportunities** related to Circular Economy*
    *c. The **social benefits** of the circular transition in terms of equality, accessibility, better mental health and work-life balance (working less hours) true price of things, protection of local economies*
    *d. The **role of new technologies** in the transition*
16) *Il CETM must know the **commercial strategies** and the related intervention budgets that the company wants to undertake by applying sustainability issues.*
17) *In "interpersonal thinking" it should be included **communication and relations inside the same organisation**. This is one relevant aspect to successfully implement CE practices in a company*
18) *"In change management as this is, it is important to be able to **influence the Company on an organizational level** hence change requires cross disciplinary and cross- department collaboration and also an ability to create ownership to change across the company and actually through the whole value change. maybe also an **ability to think holistically** and understand **how to interconnect different disciplines across departments**- e.g. how data will be extremely important - also for the design department even though they might not have these insights themselves- that's what I mean by creating holistic views and ownership- if the transformation is not strategically anchored and the same vision, Mission and ownership is created across the whole stakeholder group- the change will not be efficient and fluent. The same goes for the **information flow** in the organisation - communication skills in that regard will also be important. I hope this makes sense:-)"*
19) *In European conditions - TRADE. this can be built in interpersonal and operational thinking*
20) *In my opinion, operational thinking contains the most valuable contents to be considered for an effective circular design approach. I would include here **life cycle design and circular design guidelines**, as well as tools to measure and envision materials circularity in a given system over time.*
21) *In operational thinking, I don't see any competencies on **logistics innovation (reverse logistics, shared logistics...)***
22) ***Interdisciplinary and soft skills***

23) *It could be useful to consider including a competency related to communication and dissemination of circular economy principles, as the ability to effectively communicate these concepts to diverse audiences is essential for promoting change and adoption of circular practices. This could involve* ***communication skills, storytelling, environmental education, and awareness.***
24) ***Knowledge thinking*** *- to know what the state of art innovations and developments is. You need to know what is already possible and what could or could not work in different circumstances.*
25) *No, but I think that* ***Systems thinking*** *is a very important competency even if very difficult to reach: it needs an open mind that already has a good knowledge of the whole system*
26) *Operational thinking has to* ***include financial and investment approach****. How profit is done with circular solutions has to be very clear in each action before to be implemented.*
27) *Perhaps* ***competencies covering technological areas*** *could be included. Specifically, the framework would benefit from integrating skills in* ***using digital tools*** *that are essential for supporting circular economy initiatives.*
28) *Perhaps* ***content related to accessibility*** *can be added, given that the circular economy must also respond to diversity. Building furniture that has been designed with accessibility in mind can be an added value.*
29) ***solutions for root cause not symptoms***
30) *I'm not sure in which competence group I would include it, but in order to materialise circular economy strategies together with companies, you have to speak their language: understand their financial, legal, technical, or cultural needs and priorities, discuss economic impacts (not only environmental and social), assimilate the position and relationship with their value chain, or include the top management, and not only the technical team, within the advisory process."*
31) *The current framework could be enriched by including* ***advanced Data Analytics*** *for better process optimization, international regulatory expertise for managing global compliance and change management skills to effectively drive and sustain organizational shifts toward circular practices. (updated -> after completion of next questions some of these suggestions have been considered)*
32) *the* ***knowledge of materials*** *through manual experiences to understand them in a deep way*
33) *These teachings should be* ***included in the early stages of education****.*
34) *What is important is the* ***ability to convince the people*** *in the respective system of the necessity of the action so that the action is intrinsically motivated. This requires the ability to approach people, to interact with them and to take them along on the journey and involve them as an important part of the whole.*
35) *"Within the competency "Operational Thinking" i missed the* ***ability of designing digital parametric procedures*** *to support the complete operative process.*
36) *Within the competency "Interpersonal Thinking" i missed the aspect of* ***achieving different views*** *on problems through the eyes of participants from different fields, which is helpful to detect these problems and therefore find solutions."*
37) *You haven't missed any vertical competence but it is important to* ***create the competence for horizontal connection of the six indicated***
38) *The boxes are wide enough to introduce any relevant topic. I'm a bit* ***sceptical on strategy and future thinking*** *since these managers do not have the global picture of the company from their position within the company. But that may change in the future. Still interesting to know anyway...*
39) *"The competences chosen are sound and relevant. I* ***have prioritised "future thinking" as less relevant (7)****, not because it is not important, but rather because we live in such uncertain times ahead that any prognosis will almost certainly be wrong. Preparing for what is to come is a wise exercise, but in the end, we must be flexible and ready to deal with any change at any time.*
40) *No, in my opinion the set of considered competences is complete*
41) *No, the areas of competence listed are the most important.*

Specific inputs on the specific competencies, below the six macro areas.

42) *"As previously stated. The* ***ability to integrate people into processes and considerations*** *and thus create an intrinsically motivated working atmosphere."*
43) ***Capability to transform production lines*** *and adapt them to new activities like repair, remake, etc.*
44) *Competencies that might be considered to be added:*

- *- Under 5) Operational Thinking:*

a. *It seems there is a **lack of considerations of the social aspects** (e.g. attitudes, behaviour, habits) associated with circular solutions. Behavioural change might be required (at individual and community level). Thus, 'Circular Behavioural Innovation' might be added as an important competency.*

- *- Under 3) System Thinking:*

a. *I would have competencies related to **circular technologies** (i.e. key technologies that can act as enablers for circular economy), as well as **circular society** (with a focus on the societal factors that can hinder or support transition to CE).*
b. *In relation to Governance and Policy, it would also be useful to add something related to **how to influence policy, regulations and standards**.*
c. *In addition, something related to **rebound effects** of circular innovations could be added.*

45) ***Design** is the most important part. The product must be designed with reuse in mind. If this is not taken into account, reuse and the circular economy approach is much more complex to develop.*
46) *general note: the linkage to practical and applicable tools/methods/KPIs at company level and/or ability to be well prepared for **compliance with coming legislation** is key. Otherwise, the competence achieved will be highly theoretical with no skillset on how to actually implement or change BAU.*
47) *I felt a bit confused when answering questions, as I kept thinking about **different students' specialties**. For example, a business major could focus on different set of competencies, then, a designer or a VET student. This might have affected the Importance? but not the Offer.*
48) *I think it covers the main competences in the six areas. Just to add some suggestions: the **technological competency**, that is, to know the digital tools that support circular economy and its strategies is mandatory. Moreover, to be able to engage stakeholders in the good way to **successfully manage relationships and fostering collaborations**. To have a **good knowledge of current regulation and future issues** in this matter is necessary for effectively leading the circular economy transition*
49) *In the Operational thinking, I think it would be relevant to include the **manufacturing innovation** itself (e.g. resources use (energy, water, etc.), **waste generation, emissions, hazardous substances use, etc.**). **Ability to support sustainable manufacturing**, increasing manufacturing process circularity, for example zero waste programmes, renewable energy use, etc.*
50) ***Logistics management and innovation** (cfr before) + **materials knowledge** (materials transformation, materials/ matters innovation.*

2.4.2 Biggest barriers to implementing circular economy in the furniture industry

The idea behind this question was to identify the most relevant barriers to the implementation of circular economy in the furniture industry.
The complete question was:
Which are the biggest barriers for deploying circular economy in the furniture industry?

The ranking resulting from the different answers is reported in the following figure.

Figure 19 - Results for biggest barriers for implementing circular economy

Type of barrier	Num. of votes
Lack of a circular economy transition strategy and leadership	111
Lack of skills and knowledge among staff	80
Cost of changes	78
Some reluctant to changes and new business models adoption	76
Insufficient development and deployment resources	36
Further adaptation of technologies is needed	20
Lack of solutions from suppliers	16
Other	25

The results reported in the previous figure identify quite well those that respondents consider the most critical barriers for the deployment of Circular Economy practices within the furniture sector. The number of votes received by the proposed concepts confirm that there are some of them that can really play a role in reducing the obstacles and tackling them could facilitate the implementation of CE strategies within the sector.

Respondents in the category "other" were invited to suggest any other barrier that they consider important to be mentioned. We collected the following additional suggestions which show that some concepts have been repeated by respondents, such as the level of awareness and knowledge of customers (or B2B purchasers) about the importance of CE practices and sustainability in general to reduce the environmental footprint of the industry, together some references to the importance of the knowledge of existing and coming legislation and regulations affecting the sector.

1) ***Lack of awareness among customers**, it's not a mandatory requirement.*
2) ***Demand from consumers***
3) *Lack of circular **consumption demand***
4) ***lack of demand/interest from clients** for circular solutions*
5) ***No demand***
6) ***Lack of importance** for the vast majority of the **population/ consumers/ society.***
7) ***Lack of understanding benefits** for business and society*
8) ***Lack of circular culture and lack of government support**.*
9) ***Lack of the right mindset** from the player in the sector: entrepreneurs and associations*
10) *Basically, what is missing is a **diffused sustainability culture, lack of correct and clear information, lack of training***
11) *In addition to a lack of knowledge and skills, **the mindset of the people** required for change is an extremely important factor. **Company management** plays an important role in the way it introduces this topic into the company, so that it is initially 'extrinsically' motivated and then 'intrinsically motivated' in the company, thus generating the necessary creativity. Last but not least, this includes **empowering the employees involved.***
12) ***Administrative/legal procedures** and the **costs of meeting regulations/legal standards** that constitute the most significant barriers*
13) *the **legal provisions** (especially on waste) are very stringent and sometimes hinder the industrial symbiosis*
14) ***Lack of monitoring of law and ecodesign**, on top of lack of pressure from the market if there are not clear leaders doing it.*
15) *Restrictions like **outdated regulations**, which do not support innovation, regulatory and bureaucratic issues or restrictive definitions of waste and by-products*
16) *Creation of **network to new business models***
17) ***Difficulties of truly collaborating along a circular value chain**, when industry is used to have an attitude of each man for itself*
18) *Furniture sector seems to be a very slow innovation sector, especially in Italy still fixed to some old concepts. To innovate with new design, business model or systems it's difficult. Another barrier (perhaps contextualised at the level of Italy and the Brianza companies) is that they produce in Italy, but ship products to several continents. So, developing solutions (BMs and systems) with such **an extensive chain** is not easy.*
19) ***Geopolitical factors**, for instance pressure of many countries interested to slowing down green development*
20) ***Lack of collaboration among stakeholders.***
21) ***Lack of systemic vision and approach***
22) ***Politicians** who follow their agenda, which is designed for growth.*
23) ***Soft skills** related to the circular economy.*
24) ***Suspicion** towards those who impose circular rules too often dictated by private interests*
25) *The CirCLER in general must also be **more in touch with the company's commercial and governance strategies** as they progress through their profession. For this reason, they must also be prepared in general economics topics applied to circularity.*
26) ***unfair competition** form SE Asia...*

27) *All the options should be selected. I also believe that it is necessary to link the concept of sustainability in the field of furniture to a sort of economic return, as done for domestic appliances, this for end users, also at this time in most brands in the world of furniture the manager is a pretty older person who has difficulty in approaching sustainability issues*

2.4.3 Other relevant courses

The idea behind this question was to require the respondents to mention any course that could provide good insights and can be considered a reference in the field of CE.
The complete question was:
"Would you suggest to the CirCLER partnership to look at any VERY relevant course that can be considered as a high-level REFERENCE in the Circular Economy field in your or other country? If yes, please, provide the name and a website link to it. (We would like to stress that it should not be just a course on Circular Economy, it should be one that can represent a qualitative reference for our sector, in spite of not focusing specifically on it)."
Results show that the list of courses proposed by respondents does not always properly respond to the specific question but show that there is a growing number of courses trying to deal (with more or less success) to the lack of knowledge and understanding of CE in relation to the sector and in general. The whole list will be properly analysed during the following step/phase of the project focusing on the development of the new joint curricula for the CETM.

1) Sustainable Materials for a new Architectural Practice – Entering a circular economy" https://zirkular.net/de/projekt/kit-gastprofessur/
2) CIRCO - method. https://www.circonl.nl/english/ A good methodology that offers a low-threshold, self-determined introduction to the topic of circularity. We have already done this once in Germany with companies in the furniture industry and their suppliers and are planning further tracks.
3) Circular economy - sustainable materials management https://www.coursera.org/learn/circular-economy
4) Circular thinking by Climate-Kic
5) "Coursera: 1. "Circular Economy: An Introduction": https://www.coursera.org/learn/circular-economy-introduction ; 2. "Circular Economy: Sustainable Materials Management": https://www.coursera.org/learn/circular-economy-sustainable-materials-management; 3. "Circular Economy - Sustainable Business and Innovation": https://www.coursera.org/learn/circular-economy-sustainable-business-innovation
6) "Circular Economy: An Introduction": https://www.edx.org/professional-certificate/delft-university-technology-circular-economy-introduction; 2. "Circular Economy: Sustainable Materials Management": https://www.edx.org/professional-certificate/delft-university-technology-sustainable-materials-management; 3. "Circular Economy: Business Strategy for a Sustainable Future": https://www.edx.org/professional-certificate/delft-university-technology-business-strategy-for-a-sustainable-future
7) Udemy: 1. "Introduction to Circular Economy": https://www.udemy.com/course/introduction-to-circular-economy/ 2. "Circular Economy - The Sustainable Approach to Business": https://www.udemy.com/course/circular-economy-the-sustainable-approach-to-business/; 3. "Circular Economy Masterclass": https://www.udemy.com/course/circular-economy-masterclass/
8) COURSES DEVELOPED BY MATREC FOR MANAGERS
9) ESADE: Implementación práctica de la economía circular https://programas.online.inonesade.com/eci-economia-circular?utm_campaign=nonpaid&utm_source=school_social&utm_medium=linkedin&utm_content=faculty
10) Green chambers Erasmus plus project
11) "Having searched and researched the market for educational programs regarding the circular economy in Ukraine, I can say that there are practically no offers inside the country. The only

one course that I could recommend to my students and clients: https://jm.snau.edu.ua/acet-i/ I'm afraid this is the only one that exists in principle in wide access.

12) As for courses in other countries. I consider this extremely successful for high-level managers, qualified professionals, business owners: https://online.em.jbs.cam.ac.uk/circular-economy-sustainability-strategies Or https://circulareconomy.europa.eu/platform/en/education/new-circular-economy-courses-available-circulab-academy
13) For representatives of various related fields, connected with principles of CE, I would recommend such courses: - general business administration course - Introduction to Sustainability and CE - Value and Business Decision Making - as a specialisation for “Strategy and Finance for the lifecycle of a Social Business" - Innovation and creativity - Agile methodologies
14) https://online-learning.tudelft.nl/courses/circular-product-design-assessment/
15) https://weareshifta.com/formaciones/master-diseno-sostenible/?utm_campaign=Sostenible_ESP&utm_source=google&utm_medium=cpc&utm_content=BOF_SOS_ESP&utm_term=master%20dise%C3%B1o%20sostenible&gad_source=1&gclid=Cj0KCQjw_-GxBhC1ARIsADGgDjviYJijkPDYgIT1BUq_Og7sblQqVtJQvB5mIdKx3ibGfU06K4A1N58aAvm3EALw_wcB ; https://www.tudelft.nl/io/over-io/afdelingen/sustainable-design-engineering
16) https://www.antwerpmanagementschool.be/en/program/topic-sustainable-transformation
17) https://www.climate-kic.org/spotlight-initiatives/circularity-thinking-programme/
18) https://donellameadows.org/systems-thinking-resources/
19) https://www.design.polimi.it/it
20) https://www.eoi.es/es/cursos/89314/master-en-economia-circular-online
21) https://www.furn360.eu/ ; https://furncircle.eu/ ; https://www.ihobe.eus/actualidad/abierta-inscripcion-para-programa-formativo-en-economia-circular-destinado-a-personas-jovenes ; https://www.ihobe.eus/actualidad/ihobe-ofrece-a-profesionales-en-activo-nuevos-cursos-gratuitos-sobre-economia-circular
22) https://www.iuav.it/Didattica1/MASTER1/OFFERTA-FO/anno-accad2/CORSI-DI-P/prodotti-s/index.htm
23) https://www.polito.it/didattica/corsi-di-laurea-magistrale/design-sistemico OR https://www.santannapisa.it/it/alta-formazione/corso-executive-circular-economy-business-20222023
24) https://www.polito.it/en/education/master-s-degree-programmes/systemic-design
25) https://www.studio-cisottilaube.com
26) This University is concentrating their research on LCA method for assessing the environmental impacts for wood management systems. https://www.temalegno.unifi.it/
27) In the Trentino Region the wood supply chain is quite well known and managed for historical and social reasons. The “Servizio Foreste” with the Camera di Commercio (Portale Legno - https://www.legnotrentino.it/it/) manages and detects the entire chain.
28) I suggest you: Circular Economy and Sustainability Management (Higher VET course) https://www.uniroma1.it/it/offerta-formativa/corso-di-formazione/2021/circular-economy-and-sustainability-management
29) I would focus on other than European resources - especially like MIT's Circular Economy and courses dealing with Asia and Africa - as there is both the market and resources for manufacturing - success of circular economy companies depends on these areas, with high population
30) I would suggest a relevant course that can be considered as a high level reference in the Circular Economy field - “CIRCULAR ECONOMY: TRANSITION FOR FUTURE SUSTAINABILITY”, Massachusetts Institute of Technology (MIT) Professional Education’s online course for enacting an ethical economic model for a sustainable present and future (https://professionalprograms.mit.edu/online-program-circular-economy/#info). This course provides a fundamental yet multidimensional understanding of the meaning of a circular economy and the roles of material science, economic and institutional structures and technology. This course is designed for professionals from many backgrounds interested in

sustainable actions, innovation opportunities and improving society: industries and sectors that are very material-sensitive and want to mitigate the impact they have on the environment and seek out more sustainable and effective methods for the construction process of their materials, as well as for managerial-level audiences (every industry, including finance) seeking to develop an understanding of the concepts of infrastructure development and engineering. I'd like to meantion that recommendation for functional and multifunctional teams to participate in the course together to accelerate the adoption of sustainable practices is highly valued. Course structure is logically organized and covers all the competencies described by CirCLER partnership – consists of 9 modules (Module 1 The Circular Economy Concept and Aspiration; Module 2 Material and Energy Strategies for a Circular Economy; Module 3 Climate Change and the Circular Economy; Module 4 Natural Capital Accounting and Valuation of Ecosystem Services (NCAVES) and Circular Economies: Environmental Accounting Scheme; Module 5 Waste-Resource Recovery System; Module 6 Technologies for Recycling; Module 7 Modeling and Simulation; Module 8 Financial and Business Cases; Module 9 Remote Sensing + In-Situ Sensing of the Environment: Closing the Measurement Gaps for Circular Economies). Such approach gives a look at circular economy through a systems approach, examining frameworks and policy at an institutional level and making use of analytical tools that allow to evaluate circularity, explore innovation and evolution in this area with a focus on circular economy at corporate and social levels.

31) I would suggest Sustainable and Circular design studies from TUDelf. They are by far the most advanced institution in circularity strategies at the European level. Also in Spain we have an online máster from ELISAVA that is the best reference nowadays: Máster en Diseño Sostenible SHIFTA.
32) "Máster en Estudios Interdisciplinarios en Sostenibilidad Ambiental, Económica y Social https://www.uab.cat/web/estudiar/la-oferta-de-masteres-oficiales/plan-de-estudios/plan-de-estudios-y-horarios-1096480309783.html?param1=1096480176135
33) Posgrado en economía circular. Herramientas y estrategias para la transición empresarial sostenible https://www.talent.upc.edu/esp/estudis/formacio/curs/300700/postgrau-economia-circular-eines-estrategies-transicio-empresarial-sostenible/
34) Master's in Environmental Engineering and Management: https://www.eoi.es/es/cursos/91123/master-en-ingenieria-y-gestion-medioambiental-online
35) Postgrado en Economia Circular, Herramientas y Estrategias para la Transición Empresarial Sostenible. UPC. Campus talent tech Barcelona. https://www.talent.upc.edu/esp/estudis/formacio/curs/300700/posgrado-economia-circular-herramientas-estrategias-transicion-empresarial-sostenible/
36) "Sant'Anna School of Advanced Studies is a public university institute working in the field of applied sciences: Economics and Management, Law, Political Sciences, Agricultural Sciences and Plant Biotechnology, Medicine, and Industrial and Information Engineering. https://www.santannapisa.it/en
37) The Industrial Ecology programme (master's, phd etc) at NTNU. https://www.ntnu.edu/indecol
38) "What I recommend is to look into CIRCit and Sitra, as they may be of interest to you.
39) "Yes, in MOOC platforms you can find some interesting courses of circular economy some of them with high recognition. E.g. this one (https://www.coursera.org/learn/circular-economy) with more than 65K people enrolled has a rate of 4.8 points over 5. This course, organized in five modules, provides a deep dive into circular economy principles, focusing on sustainable materials management, which is highly relevant to the furniture industry. It covers the essentials of designing products for longevity, recycling processes and the overall impact of materials choice on sustainability.
40) But focused on a qualitative reference, let me recommend the online MIT course "Chieff Sustainability Officer", of 12 months duration, with blended learning, but the cost is very expensive, 28K€ aprox. https://online.professionalprogramsmit.com/blended-professional-certificate-chief-sustainability-officer?utm_source=Google&utm_medium=c&utm_term=sustainability%20leadership%20course&utm_location=1005499&utm_network=g&utm_campaign=B-365D_WW_GG_SE_MPE-

CSO.SEPO_July_24_Nonbrand_EU&utm_content=Course&gad_source=1&gclid=CjwKCAjwi_exBhA8EiwA_kU1Mm1BGYZ1yrl7Bz0M2fXSqn78Tkn83QUJjAYXybEldK2VKFiME8epexoCuWoQAvD_BwE

41) I don't know any reference course that exists at this moment that brings together the necessary skills for a transition manager, but there are a lot of knowledge that circular economy specialists can access on https://circulareconomy.europa.eu/platform/en/
42) I don't know a course that can provide all these aspects and specifically for the furniture sector. The topic is complex and it cannot be a single course that provides all information for companies in the furniture sector. The verticality required for the application of circular economy strategies for the furniture sector requires different specialisations.
43) I do not provide links to the last 5 courses, since they are quite easy to find in any quality on the Internet. The course should be selected for a specialist or group of specialists very individual. Regarding special courses specifically on the Circular Economy, its principles and Sustainability, after careful searching and research, I can say that the number of such training programs is catastrophically small"
44) At the moment, the FURNT360 in which CETEM was involved, is the most relevant course on CE I´m aware of, however, this can be further updated.
45) Non-violent communication - M Rosemberg.
46) not an entire course but some lessons that I hold at the Milan Polytechnic and at the Milan Business School
47) No, but currently in Slovenia, there are ongoing reforms of formal educational programs at all levels, including wood science and technology, with an emphasis on sustainability and digitalization.

3. Presentation of the experts' workshop outcomes

This part of the report presents the main results and outcomes of the expert's workshop, which took place on June 26, 2024 and was attended by 22 internal and 10 external experts.

3.1. Agenda of the CirCLER expert's workshop

Figure 20 - Agenda of the CirCLER expert's workshop

TIME/TOPIC	RESPONSIBLE
14-00…14-10 / Welcome address and introduction of participants/experts	UNFU
14-10…14-15 / Aim of the workshop	UNFU
14-15…14-20 / CirCLER Project presentation	AMBIT
14-20…15-10 / Survey results presentation and discussion: • survey results: graphs and conclusions will be presented; • discussion regarding survey results with Mentimeter	AMBIT+ALL
15-10…15-25 / Free microphone – open discussion	UNFU + ALL
15-25…15-30 / Main conclusions and follow-up	AMBIT
15-30…15-35 / Closing of the workshop	UNFU

3.2. Experts of workshop

Both internal and external experts participated in the expert workshop. Among the internal experts of the CirCLER project partners were: Julio Rodrigo, Massimiliano Rumignani, Omar Degoli, John Hewer, Paul Leamy, Juanjo Ortega, Marco Denni, Irene Burroni, Luigi Mettica, Carlo Pace, Simona Serafini, María Victoria Gómez, Radmila Ustych, Erwan Mouazan, Alejo Calatayud,

Eduardo Sánchez Otero, Luminita-Maria Brenci, Camelia Cosereanu, Nicole Gaglioti, Gabriella Kemendi, Manuel Zarza and Jure Šuligoj.

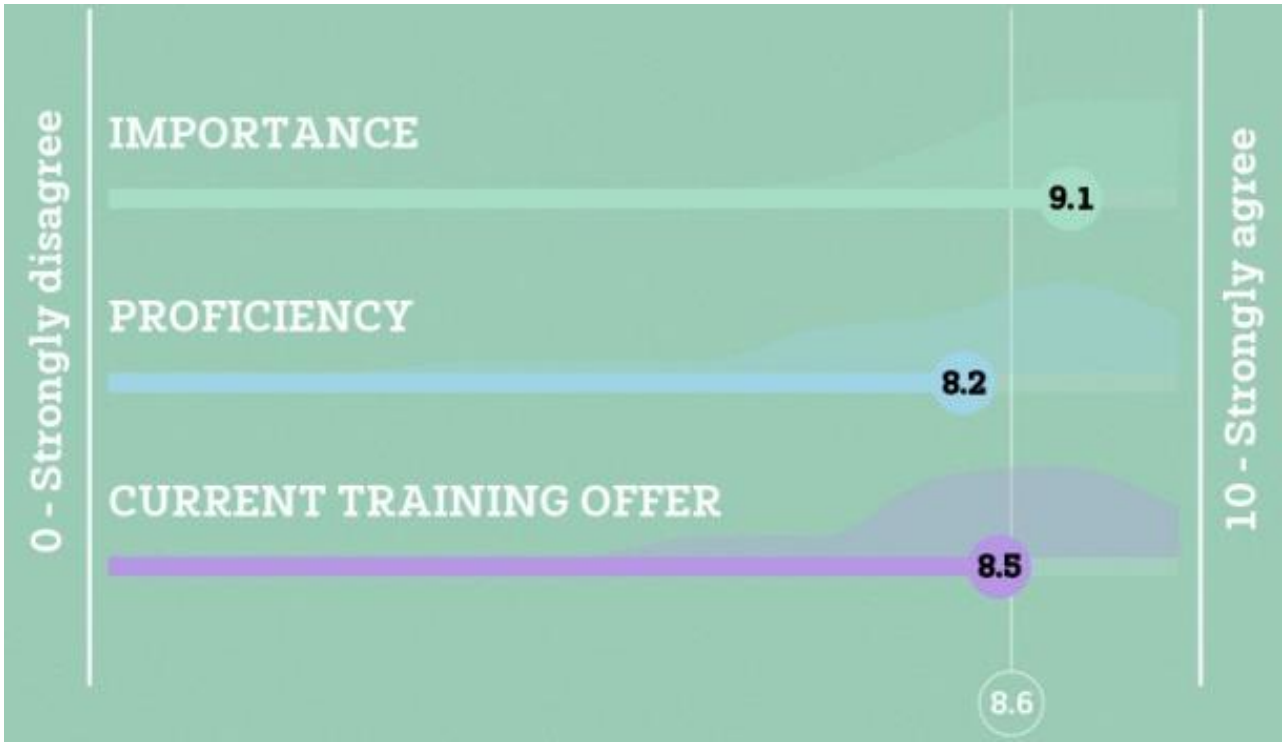
Among the external experts were: Alex Jiménez, Giada Mearns, Simon Dennehy, Raquel Ortega, Fabrizio Ceschin, Marco Marseglia, Manuel Mengoni, Daniela Claudia Serban, Juan Carlos Alonso and Jeroen Doom.

3.3. CirCLER Survey - results presentation and validation

In this part of the report, we present the opinions of the workshop experts regarding the results of the survey conducted in May 2024.

3.3.1 Results validation: six competences areas

Figure 21 - Results validation for the CirCLER six competences areas



With their vote, the experts confirmed the results of the online survey. The experts agreed the most with the results regarding **Importance** (9.1 points out of 10), the least experts agreed with the results regarding **Proficiency** (8.2 points out of 10). Agreement with the results regarding **Current Training Offer** was 8.5 points out of 10.

Apart from the direct assessment of agreement with the results obtained from the online survey, some experts expressed the following opinions:

- "The proficiency results are subjective as it is hard to really assess to what extent the whole EU furniture industry possess or not those competences."
- "Well aligned needs and importance. My doubts in high value of current proficiency on all areas."
- "Regarding the proficiency figures, these are filled in by companies that are already busy with CE. Does that show the best possible results?"
- "It would be good to better understand proficiency level looking at different furniture company sizes."
- "Proficiency is always higher than the offer of training. It should be investigated?"
- "Agreed with results but the differences within the results should be investigated."

- "While the knowledge skills and competencies mentioned are important, social elements are left out of these considerations."
- "I believe the results are accurate and relevant, but answers also depend on the size of the company and the resources they can allocate for CE."
- "Proficiency could depend on the size of companies and resources for environmental topics e.g., low in SMEs."
- "I agree with the conclusions. I have just some doubts on the proficiency, especially regarding companies."

3.3.2 Results validation: value thinking area competencies

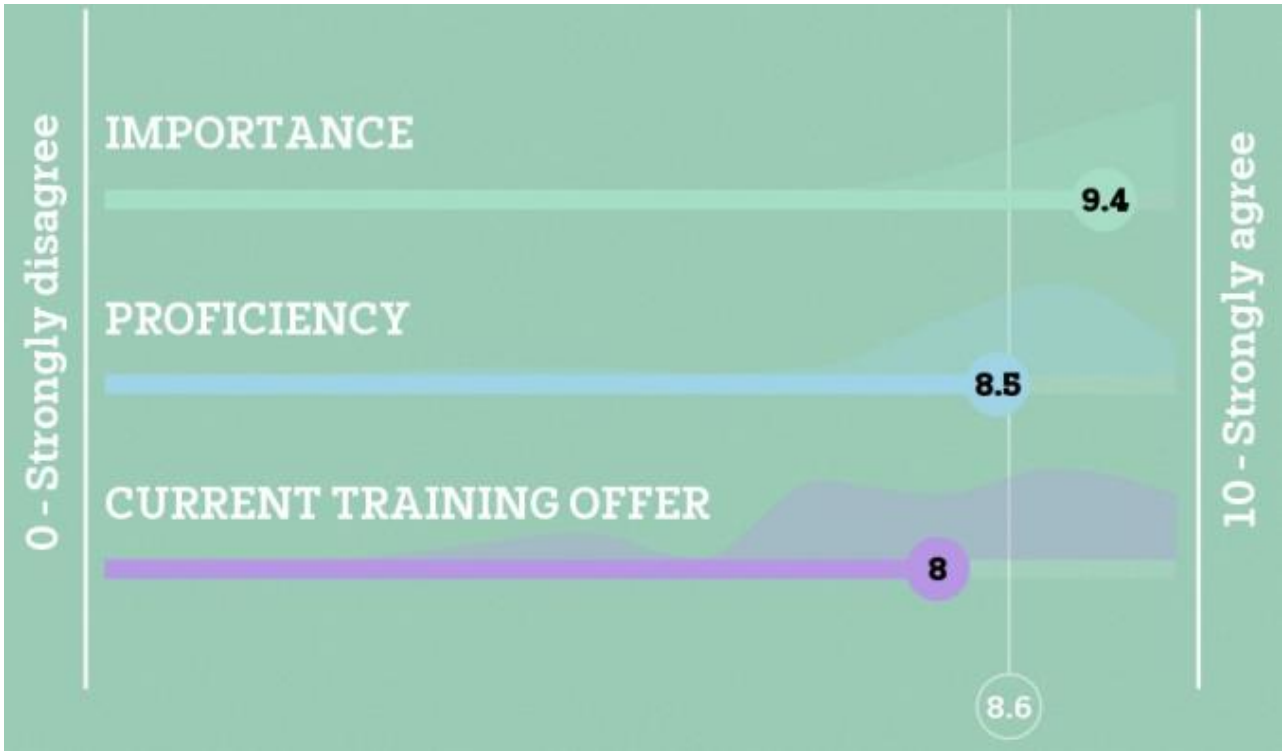
Figure 22 - Results validation for the Value Thinking area

With their vote, the experts confirmed the results of the online survey. The experts agreed the most with the results regarding **Importance** (9.4 points out of 10), the least experts agreed with the results regarding **Proficiency** (8.6 points out of 10). Agreement with the results regarding **Current Training Offer** was 8.7 points out of 10.
Apart from the direct assessment of agreement with the results obtained from the online survey, some experts expressed the following opinions:

- "For me circular mindset should be the most important for companies."
- "In general, these mindset competencies/embodying values are less addressed in training that focus on hard knowledge, tech aspects."
- "Embodying values is not a skill you can teach, it depends of interpersonal skills, communication skills, etc."
- "Overall agree. But when assessing the proficiency of aspects related to awareness, values and mindset, there is high degree of subjectivity and individual interpretation."
- "Surprising that embodying values is seen so low in the training offer.
- " Proficiency in circular economy needs measurement. Unless a business is truly knowledgeable, they cannot know for sure the impact of their supposedly circular decisions."
- "I agree except with the training offer: I think nowadays it is quite a goal and value."

3.3.3 Results validation: interpersonal thinking area competencies

Figure 23 - Results validation for the Interpersonal Thinking area



With their vote, the experts confirmed the results of the online survey. The experts agreed the most with the results regarding **Importance** (9.4 points out of 10), the least experts agreed with the results regarding **Current Training Offer** (8.0 points out of 10). Agreement with the results regarding **Proficiency** was 8.5 points out of 10.
Apart from the direct assessment of agreement with the results obtained from the online survey, some experts expressed the following opinions:

- "Not sure how training can be offered for fostering cooperation with other businesses in CE."
- "Current training offer seems low, because there are training courses for collaboration and communication. Perhaps not specific for furniture sector/circularity."
- "I am surprised that the current training offer on these areas are rated this low. In my opinion there is a large training offer for these themes."
- "More or less basic soft skills and so low in training offerings results."
- "Seems that companies always think offer is low, experts think they are a bit wrong. So maybe there is a mismatch in communication?"
- "Agree with most of the result. Conflict management should be added to this list. Proficiency results tend to show most situations are conflictless."
- "Overall agree. But I think would be useful to differentiate between collaboration, communication and negotiation within the company vs outside the company (e.g., supply chain partners)."
- "In general, training offer is too vast but fragmented, so sometimes is difficult to know "what's really out there"."
- "Interpersonal thinking area competencies are not easy to develop by training."
- "Negotiation and collaboration are not always part of the curricula; it maybe tends to focus more in strategy."
- "Find the way to organize the results into general comparable bases."

3.3.4 Results validation: systems thinking area competencies

Figure 24 - Results validation for the Systems Thinking area

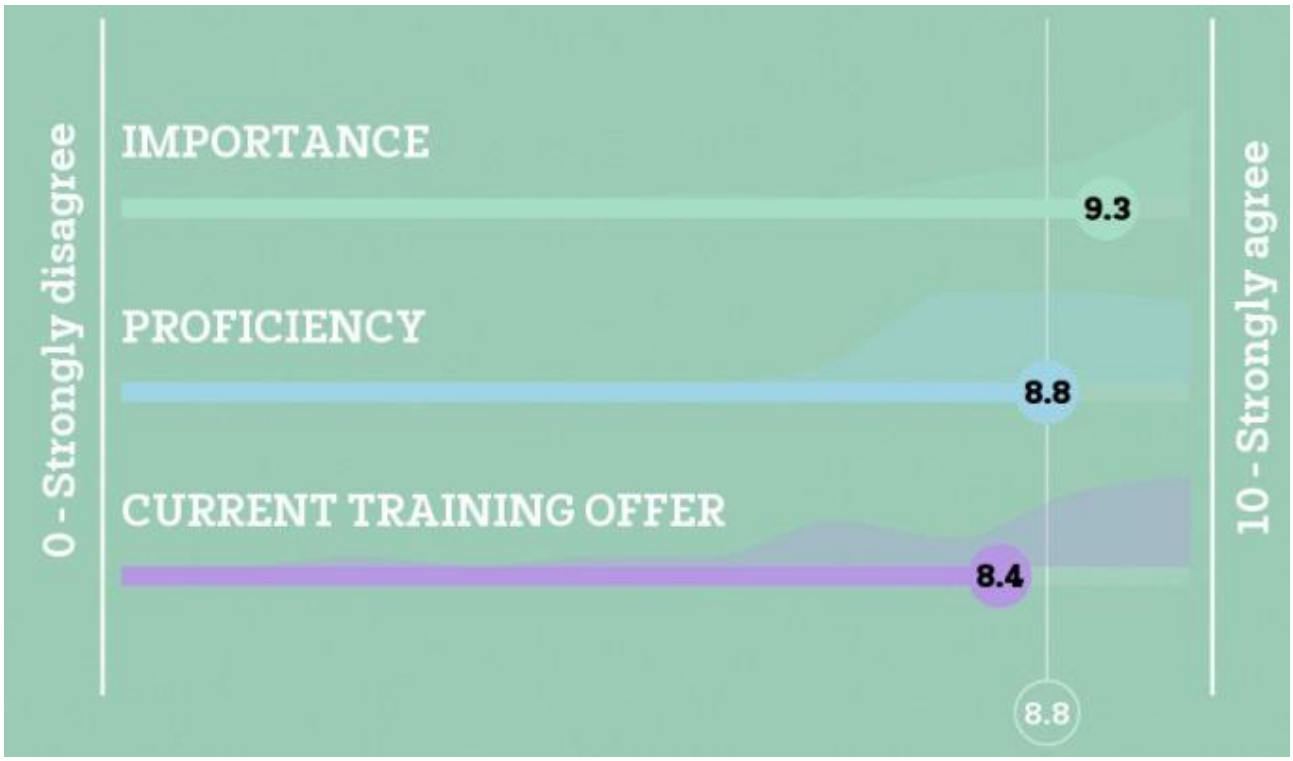
With their vote, the experts confirmed the results of the online survey. The experts agreed the most with the results regarding **Importance** (9.6 points out of 10), the least experts agreed with the results regarding **Current Training Offer** (7.9 points out of 10). Agreement with the results regarding **Proficiency** was 8.0 points out of 10.
Apart from the direct assessment of agreement with the results obtained from the online survey, some experts expressed the following opinions:

- "In my opinion, critical thinking is the area in which there is the least training offering and therefore needs greater implementation."
- "Challenge is to teach systems thinking applied to the furniture industry, keeping it as concrete as possible."
- "Critical thinking is essential. It's probably not well applied in the professional sector, even less in training. So, I agree with the results."
- "I think the score is not realistic for training offer."
- "Contrary of Interpersonal thinking, I think the training offer in this domain is not easy to find."
- "Proficiency: I don't think critical thinking is as high for companies. Training offer: is high for policies. Difficult for others."
- "Perhaps lower results than expected for Governance and polices proficiency."
- "For this part and the last one, training may be there but only big companies invest on it. Small companies are more focused on technical and knowledge because of limited resource."
- "Critical thinking is very important but difficult to teach-it depends on the student's inclination and ability."
- "Critical thinking and complexity should be studied all long the training."
- "Maybe not specific for the furniture sector, but training resources for system thinking (in particular related to navigating complexity) are available."
- "I think training offer on system thinking is near to zero."
- "Training for critical is difficult as there is so much variety within circular situations."
- "Critical and systems thinking is the most absolutely vital - difficult to train."

- “In general, there's a lack of awareness of the importance of looking and the "big picture". Systems thinking is critical.”
- “Proficiency: There aren't sufficient levels of knowledge within furniture companies in these sub-areas.”

3.3.5 Results validation: strategic thinking area competencies

Figure 25 - Results validation for the Strategic Thinking area

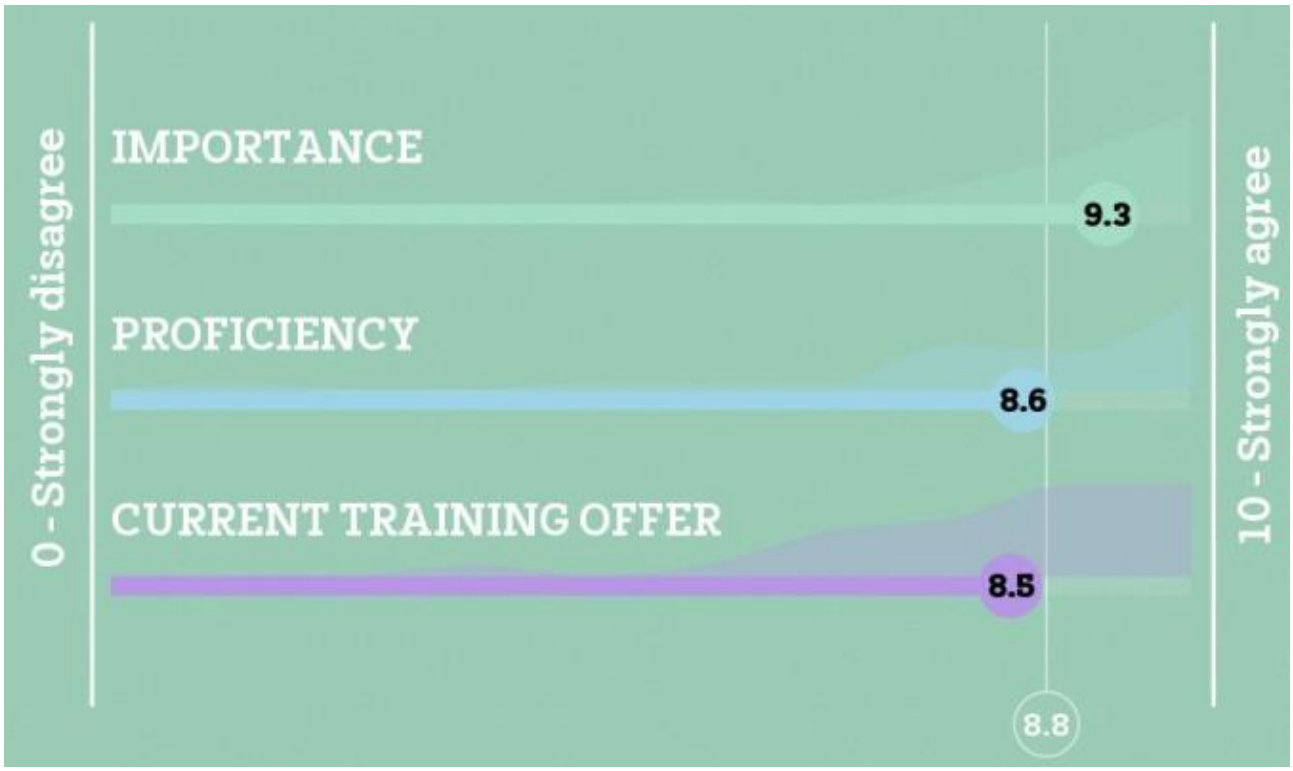


With their vote, the experts confirmed the results of the online survey. The experts agreed the most with the results regarding **Importance** (9.3 points out of 10), the least experts agreed with the results regarding **Current Training Offer** (8.4 points out of 10). Agreement with the results regarding **Proficiency** was 8.8 points out of 10.
Apart from the direct assessment of agreement with the results obtained from the online survey, some experts expressed the following opinions:

- “Stronger importance of linking strategies and monitoring with upcoming EU expectations in terms of reporting. Important to bridge also with new Circular economy ISO norms.”
- “I think that strategic thinking is a fundamental element for circularity but there are few investments by companies.”
- “Training offers exists on Circular Impacts Assessment and mobilisation of resources (projects management).”
- “I think we really need to improve training offer on this topic.”
- “Overall agree. Circularity and sustainability assessment is crucial.”
- “It’s interesting that a lot of importance is given to this kind of competences. Perhaps it’s highlighting the relevance of soft skills in the manufacturing contexts.”
- “I agree the results. As a manager you need to have a vision about the future of your company, so strategic thinking is important.”
- “I think for smaller SMEs it might be more difficult due to a lack of resources.”
- “Strategic thinking offer is there. Maybe the result is too low compared to the reality.”
- “Strategic thinking is a challenge especially when so many are working in vertical areas inside companies.”
- “I just think vocational schools teach strategic thinking just on theoretical point of view.”

3.3.6 Results validation: operational thinking area competencies

Figure 26 - Results validation for the Operational Thinking area



With their vote, the experts confirmed the results of the online survey. The experts agreed the most with the results regarding **Importance** (9.3 points out of 10), the least experts agreed with the results regarding **Current Training Offer** (8.5 points out of 10). Agreement with the results regarding **Proficiency** was 8.6 points out of 10.
Apart from the direct assessment of agreement with the results obtained from the online survey, some experts expressed the following opinions:

- "It is very specific area but extremely important."
- "Companies are still too focused (proficient) on material side and show lack of activities on the other aspects."
- "Missing areas related to digitalization. Otherwise, it is the core of the training. Yet it will be useful only if the other core areas are well integrated in the training curriculum."
- "I believe that rather than the implementation of circular design innovation, from the point of view of operational thinking the circularity of what is currently produced is mor important."
- "I think training offer is indeed not yet well developed but this changing really quickly right now."
- "Business model training can suffer from a disconnect between theoretical ideals and practical realities."
- Research is very important in this topic and needs financial support."
- "Proficiency and training in general are less than declared, even more regarding business models and innovation networks."
- "The competencies should be the most important skills to develop."
- "A wide range of training resources are available for the individual circular innovation elements, but it is the integration of material, product, business model and supply chain is crucial."
- "I disagree that material innovation is the most important one. Materials are important, but without a proper implementation do not work, design and business models should have a higher number."
- "Previous results indicate a need for broad and specific knowledge in training."

- "Training exists, but perhaps not focused on furniture."
- "I agree especially with the results regarding training: it is hard for the training offer to keep up with innovation. Research-companies-training must be properly attached."

3.3.7 Results validation: future thinking area competencies

Figure 27 - Results validation for the Future Thinking area

With their vote, the experts confirmed the results of the online survey. The experts agreed the most with the results regarding **Importance** (9.2 points out of 10). Agreement with the results regarding **Proficiency** and **Current Training Offer** was 8.9 points out of 10.
Apart from the direct assessment of agreement with the results obtained from the online survey, some experts expressed the following opinions:

- "Agree becoming more and more important but not much addressed in trainings."
- "More important than scored by participants. This is a kay issue, where there is a general lack of knowledge and training."
- "Great need to develop further the training offer."
- "There is quite a bit of a lack of awareness about the importance of futures literacy, although it's absolutely key in general but specially in terms of sustainability."
- "Being innovative is good and needed but only few have a vision that could really be a game changer."
- "I agree that there is a big challenge ahead with futures literacy both in companies as in training."
- "Quite normal that the lowest is here the training offerings."
- "Even more important as furniture are made to last."
- "Seems like a very dedicated and very high skilled position and perhaps it should be scarce and preserved for those with visionary training."
- "Training resources related to future thinking (e.g., forecasting, backcasting techniques) are widely available and can be applied to any sector."
- "A difficult one to train for future thinking, as it is impossible to predict how business practice will change with the wider application of CE. As such exploratory thinking is very important."
- "Perhaps this is the most difficult area for training offer (how to predict the future)."

- "I would highlight a need for an external expert to be involved."
- "Future thinking is a key topic but in training offer it should be very specific into the topics."
- "Future thinking is a must but not much applied om a practical point of view, it is more theoretical."

3.4. Results of free microphone

Fabrizio Ceschi: "I tried to be very quick. I think it's true that some of the training resources related to the individual elements of your program are available. But I think the most interesting aspect of what you're trying to do is really integration of skills and competencies across all these different levels and the tailoring of these to the specific needs of the furniture sector. And also making them available so that different companies with different sizes can easily access and use these resources in terms of specific content. Maybe it wasn't very clear from the materials that were shared, but I would emphasize a little bit more the role of technology enabling the circular economy aspects in trace data management, the social aspect of circular economy. I don't think this was very much included in the content, but it's very important, I think together with the behavioural aspects. Because certain solutions business models might require very different uses and customer behaviour and also about of circular economy and wanted environmental or economic effects that I arise from certain solutions. So, this is another element that you might want to consider to be integrated in the content of your training program."

Omar Degoli: "I adjust few considerations it seems that there is a bit of clash between the proficiency that the companies with which the companies rate themselves and offer of training. Now the proficiency is always higher than training then the level of training, so maybe this could be possible because some kind of skills you can learn on the job. But not for everything, so maybe there is a little bias in the proficiency. I think that there are some areas on which the difference between SMEs and larger companies are wider and are all those that are not technical of immediately applicable now. So, resources are limited and SMEs tend to invest more and more. The more practical is the training and the batteries for the company so they made luck more than the others in this area like interpersonal areas abilities. And finally, the last one for me is maybe in some case someone already wrote that the training is there not it's too far from application to be used by the companies now. For example, I'm from business models."

Manuel Mengoni: "I would like to have the two things. First of all, the depends a lot of which kind of profile you address the training. It's not the same needs if you have a designer, a manager of furniture company that will have the training. And the difference of the very depending on the job of the person you are going to train. Add, I think that's was a missing part on the survey. And second one I noticed that it is important in this street with dependencies on logistic and logistics competencies. Most of its reverse logistics you have to, have an idea of what your stock of the getting backstock the reverse stock is going to be quality of the stock and all you get you're going to work to repair to remade etc. So, it was missing on the competencies"

John Hewer: "Yeah, actually just going on top of that but Mr. Mengoni was saying about the reverse logistics making sure that things are grounded in sort of reality and what's practical. So, like there is a lot of talk reverse logistics and some of that doesn't tend to work for furniture and obviously some of it does. But there is going back to Omar's point there's a bit of a disconnect in circular literature as to what can be done in, but it sounds a good idea and in some industries it does work. But a lot of things with furniture: it's big, it's bulky, it's hard to return sometimes. But yeah, just making sure that whatever we're coming up with has that doesn't suffer from that disconnect of a theoretical ideal as opposed to a practical. Reality that cages to what can actually be done by furniture businesses."
Daniela Claudia Serban: "I want to say that if you want to implement good circularity project then everybody must speak the same language. So, I think it's important for furniture industry to have some curricula like you proposed."

Giada Meams: "I would like to attach to what even other people were saying because I really think that knowledge and all the curricula you are giving are very important because knowledge for sure

means awareness. So, to give awareness you must have knowledge. The other point that they were standing out is about innovation and technology. These are very, very important. And sometimes it is hard especially for training to bring them up. And I believe that integration and or may I would say integrating skills and levels is very important. Especially because sometimes, as John was saying, I think that school and training is sometimes detached to what companies and research is. So, for sure training must be fully attached. To what companies and search is? So, for sure, training must be fully attached to research in companies. These three things must be fully bonded. The last point is about the theoretical application. Sometimes we get much important to theory, theoretical things must be really attached to reality. They must be applied and sometimes this is very difficult. So, maybe giving even a practical point of view and trying to give more awareness of this as you can very important."

Juan Carlos Alonso:" From my side a few comments. Also, like that with this innovation technology from my side related to operational thinking. I think there is a point that it is missing that it is the circular manufacturing. That means, real election in the manufacturing process to promote the circularity. Let me say. Zero ways activities or something similar. And I think it's a point that it's dearly related with the day-to-day of the companies. And I think it's a good point but try to work also in this point related with one factory."

Jeroen Doom: "Yes, concerning the training offer. I agree these is some training offer already for in the different areas. The problem right now is that, often these training officers are at a very high level. My very expensive consultancy, bureau's office often or also. Training offer of a very long duration and I think that's the biggest problem for the moment is that the trading offer is not specific enough for our furniture industry where we have lots of SMEs where this going to be transition manager has also other roles within the company and don't have the time to follow. Trainings of very long duration. So, I agree with the previous comments that it has to be very practical. To be implemented or has a direct links with the reality in the workshops in the companies. So, I think that is an important thing because of most of these areas we can find already some training offer but I think the integration of the full scale of skills competences and knowledge. And adapted to the reality of the SMEs sector that the furniture sector."

Alex Jiménez: "Well, I think that we have a lot of CEDM's with good proficiency in many companies, but they tend to be a little bit isolated in the structure, you know. So, they are the expression that have this toolbox and this skill set but "novari" (innovation) has the same ambition and sometimes they struggle a lot to convince the higher levels of the company and also to train the lower levels of the company to implement this solution. So, I give a lot of importance to this software skills that help you to transform the whole structure of the company because you can know a lot about circular economy strategies. Circular designs and whatever, but if you are not able to transform the whole structure and to point the whole structure of a company in this direction. It doesn't work. So, I would say that this skill set is essential to and it's not always in the curriculum."

Giada Mearns: "Just one last thing about knowledge and all the skills. I think that very important is even to know about even for the furniture industry, all the chain supply even because if we're talking about circularity we're always talking about future. But sometimes it is even important to look back from where you know the raw material comes from so be able even to discuss with all the parts of the chain. this is a very big goal that is very hard sometimes even to deal with."

4. General conclusions

The outcomes of the two exercises clearly confirms that CirCLER partnership has been moving into the right direction. The competencies framework developed properly identify all the most relevant areas of competencies required by the circular economy transition manager for the furniture sector CETM. Also, the sub-competencies areas identified properly details the ones needed in within each of the macro areas.
The ranking levels of importance confirm that all of them are very relevant for this new occupational profile.
The ranking levels of proficiency show there is a quite good level of knowledge and skills in almost all the areas analysed. Here we need to stress the fact that all the companies that have answered to this part of the survey, are companies that already have a relevant level of experience in the area of circular economy. For this reason, what we can deduct is that they show a much better condition to this respect in comparison to other companies that have poor or no experience in circular economy.
The ranking of the current training offer show there is an important need to enhance and improve the offer in all the macro areas and sub-areas of competencies.
More details are reported in the following two sections.

4.1 General conclusions of the survey

We can easily and clearly state that the results of the different sections of the survey confirm the quality of the CirCLER competencies framework. We can consider that it has an appropriate structure for contributing to the identification of the sector skills and knowledge current needs in relation to the Circular Economy transition and the related need to properly address and guide it along the whole value chain of the sector companies.

The values resulting from the six macro competencies areas are quite homogeneous, in spite of some minor differences, and do not allow us to exclude any of them from being properly dealt with or addressed in our future curriculum and training kit. More in details.

Importance

Skills and competencies following under all macro areas and sub-areas of the framework are considered very important (with all values above eight) to support the CETM to understand and properly guide the companies along the design and implementation of challenging circular economy strategies. No area has been identified as one that cannot contribute to this successful design and implementation.

Proficiency

Results about the existing proficiency in all these areas looks acceptable but clear possibilities for improvement and enhancement are confirmed in all areas. Maybe it is worth to note that the in the sub-area of Future literacy (macro area Future Thinking) we can find the only value below 5, with a value of 4,70 and that in the sub-area of Circular material innovation (macro area of Operational Thinking) we find a high proficiency level of 7,55, the highest value of the whole survey under this proficiency section.

Current Training Offer

An overall analysis of the results of the Current Training Offer shows that the averages of the results are quite low, in the majority of the cases just acceptable (above an average of five), but none of them reach really satisfactory values. The highest value is 6,01 in the sub-area of Sustainability Awareness within the area of Values Thinking. It is worth to note that the in the sub-area of Future literacy we can find the only value below 4, with a value of 3,78
All of this clearly shows there is an urgent and strong need of increasing the existing training offer in all the areas covered by the CirCLER competencies framework.

General comments about answers to open questions

Based on the answers and inputs received about possible competencies areas missing in the developed framework, we cannot identify any area missing. But we see that the inputs received provide suggestions on specific aspects or themes for many of the sub-areas already identified in the framework. We can summarize the inputs received by saying that experts suggest to include specific parts in the curricula focusing on digital and technical skills, transversal/soft skills, communication skills, technics and instruments, and finally, few of them raised the importance of knowing the existing and forthcoming regulations and legislations that will directly affect the functioning of sector companies (also in relation to companies new business models), the products both in terms of materials used, production processes, and at the end of life stage.

In relation to the identification of the main barriers to implementing circular economy in the furniture industry, results clearly identify the lack of appropriate transition strategies and the leadership in pushing and guiding the required process, together with skills and knowledge among staff, as the main barrier. We can easily state that the CirCLER project in its overall and specific objectives is exactly aiming to address these identified main barriers. Anyway, looking at those main barriers identified, and the ones mentioned by respondents under the category of other ones, specific attention will need to be put on those suggested barriers and related aspects and topics when designing the curriculum on those most critical aspects identified.

In relation to the suggested existing training courses, we confirm that some of them represent a good reference and a detailed revision of their content is needed during the implementation of the T4.1 Definition of CETM Joint Curricula when the different sections and the expected learning outcomes of the CirCLER training kits will be detailed.

4.2 General conclusions of the workshop

1. At the CirCLER project experts' workshop, the results of the online survey conducted during May 2024 were confirmed, namely:
   - The average score of experts' agreements with the results of the survey, which concern the macro area of Value Thinking is 8.9 points out of 10.
   - The average score of experts' agreements with the results of the survey, which concern the macro area of Interpersonal Thinking is 8.6 points out of 10.
   - The average score of experts' agreements with the results of the survey, which concern the macro area of Systems Thinking is 8.5 points out of 10.
   - The average score of experts' agreements with the results of the survey, which concern the macro area of Strategic Thinking is 8.8 points out of 10.
   - The average score of experts' agreements with the results of the survey, which concern the macro area of Operational Thinking is 8.5 points out of 10.
   - The average score of experts' agreements with the results of the survey, which concern the macro area of Future Thinking is 9.0 points out of 10.

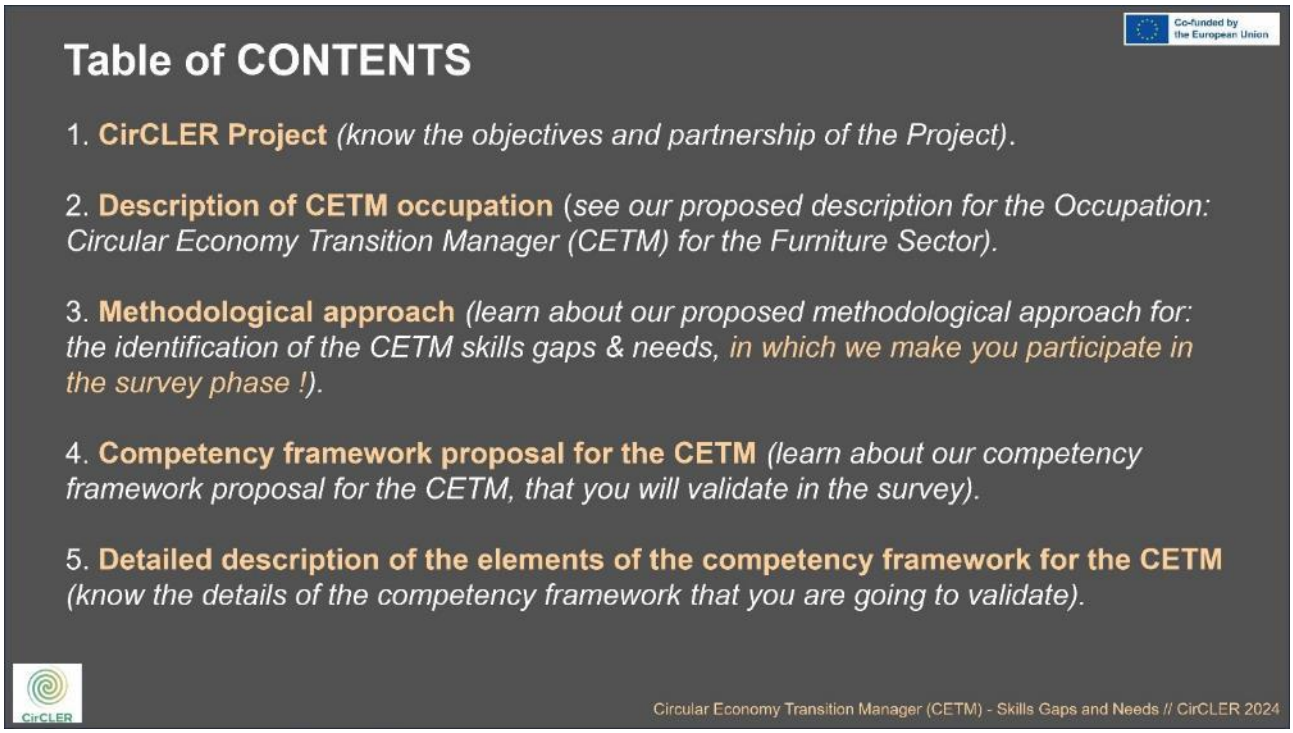
2. During the online survey session, experts also had the opportunity to express their opinions on the previously obtained results. In their comments, experts expressed agreement with the survey results while simultaneously expressing some remarks (these results may be quite subjective; it would be important to understand the size of the companies whose representatives were respondents; the preliminary results indicate the need for broad and specific knowledge in education, among other things).

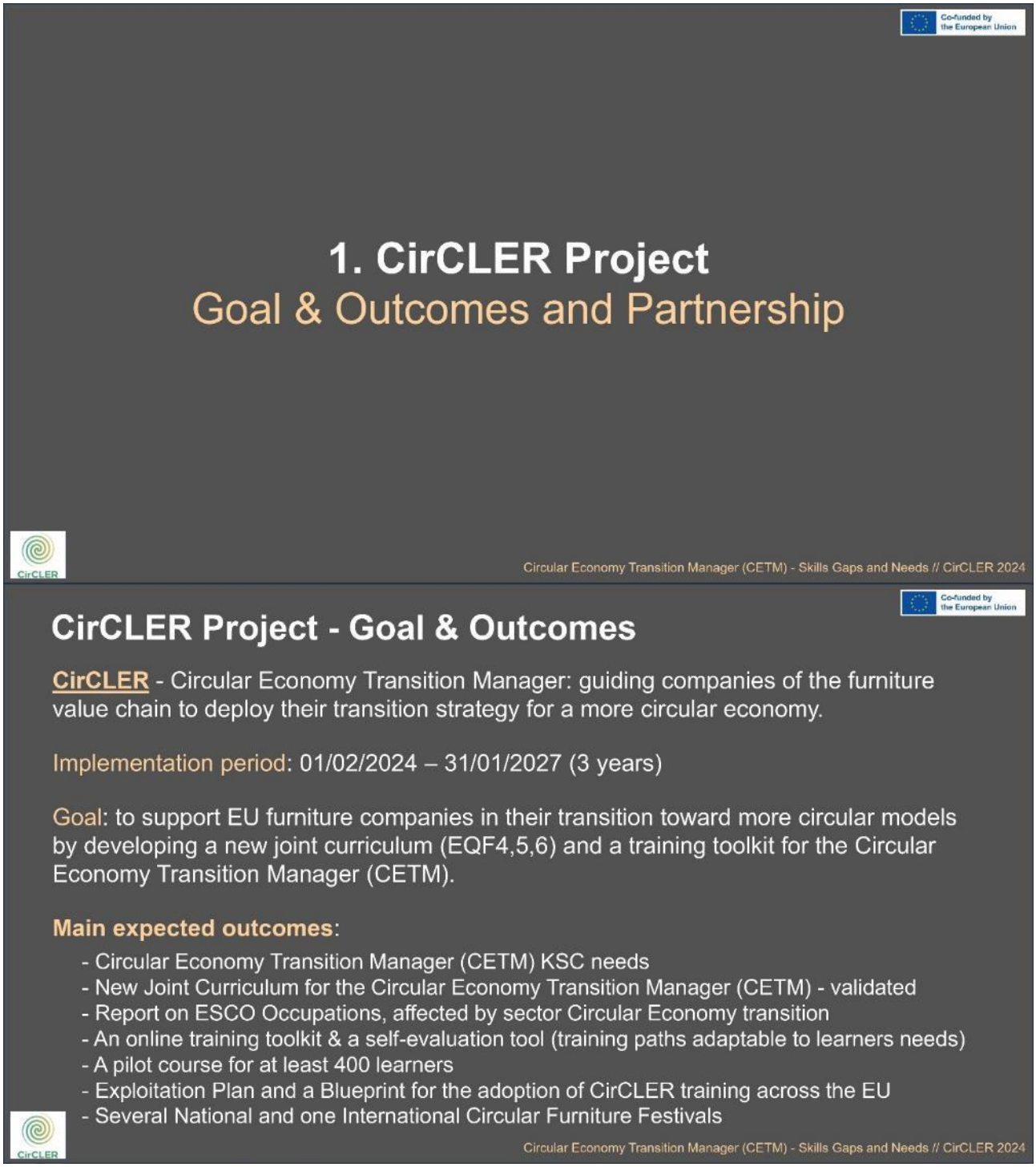
3. During the open mic session, many experts supported the project's objectives and noted that the primary task is to integrate skills and competencies across all areas and adapt them to the specific needs of the furniture industry.

5. Annexes

5.1 Annex I – CirCLER Competencies Framework

Link to the Annex I – CirCLER competency framework for the CETM

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1. CirCLER Project
Goal & Outcomes and Partnership
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Circular Economy Transition Manager (CETM) - Skills Gaps and Needs // CirCLER 2024
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CirCLER Project - Goal & Outcomes
CirCLER - Circular Economy Transition Manager: guiding companies of the furniture value chain to deploy their transition strategy for a more circular economy.
Implementation period: 01/02/2024 – 31/01/2027 (3 years)
Goal: to support EU furniture companies in their transition toward more circular models by developing a new joint curriculum (EQF4,5,6) and a training toolkit for the Circular Economy Transition Manager (CETM).
Main expected outcomes:
- Circular Economy Transition Manager (CETM) KSC needs
- New Joint Curriculum for the Circular Economy Transition Manager (CETM) - validated
- Report on ESCO Occupations, affected by sector Circular Economy transition
- An online training toolkit & a self-evaluation tool (training paths adaptable to learners needs)
- A pilot course for at least 400 learners
- Exploitation Plan and a Blueprint for the adoption of CirCLER training across the EU
- Several National and one International Circular Furniture Festivals
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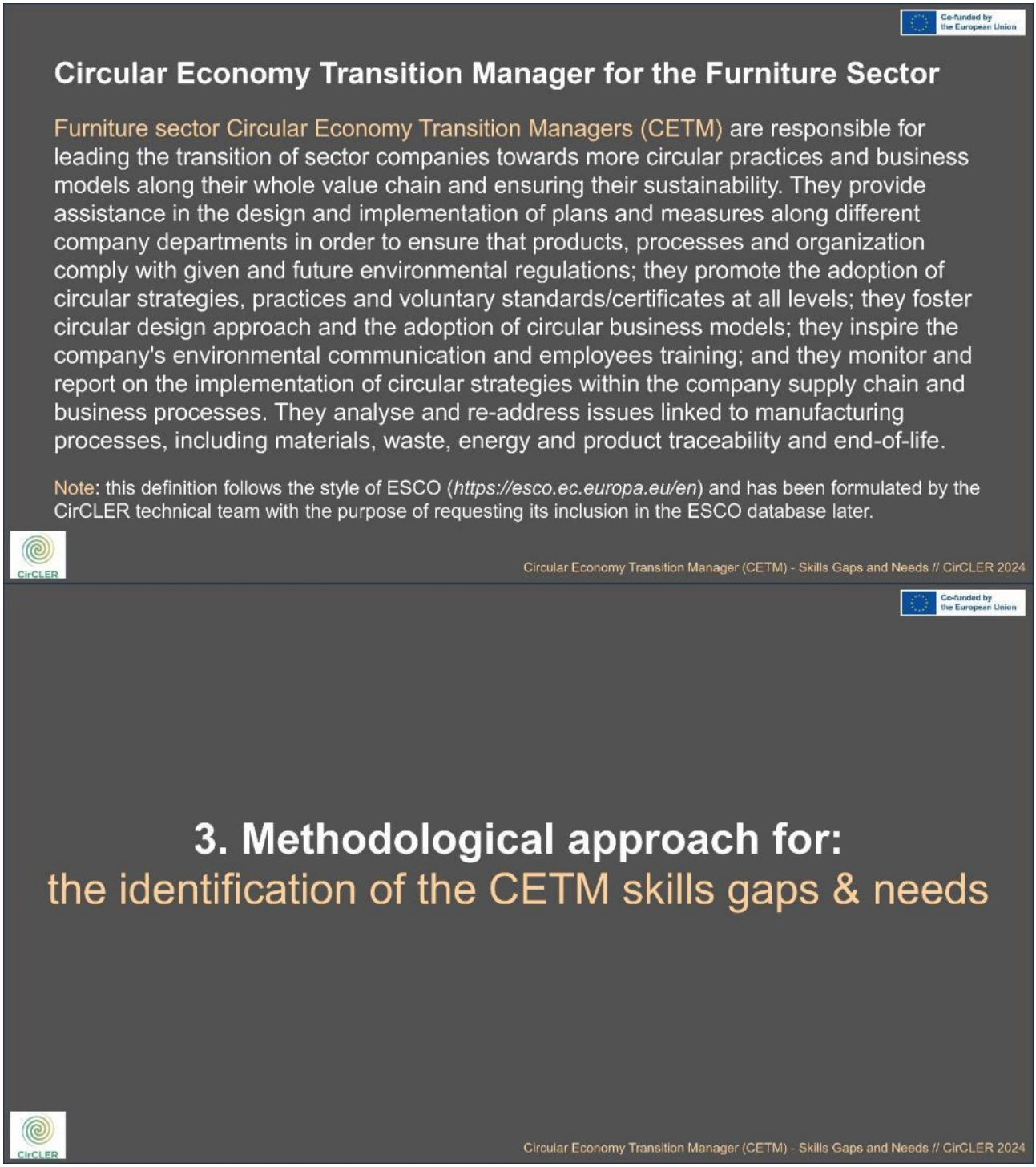
CirCLER Project - Partnership

16 full partners (9 countries, 7 languages) / Industry, VET, HE, R+D
+ 6 associated partners
+ 8 supporting partners

Circular Economy Transition Manager (CETM) - Skills Gaps and Needs // CirCLER 2024

2. Description of the Occupation:
Circular Economy Transition Manager (CETM) for the Furniture Sector

Circular Economy Transition Manager (CETM) - Skills Gaps and Needs // CirCLER 2024


Co-funded by the European Union
Circular Economy Transition Manager for the Furniture Sector
Furniture sector Circular Economy Transition Managers (CETM) are responsible for leading the transition of sector companies towards more circular practices and business models along their whole value chain and ensuring their sustainability. They provide assistance in the design and implementation of plans and measures along different company departments in order to ensure that products, processes and organization comply with given and future environmental regulations; they promote the adoption of circular strategies, practices and voluntary standards/certificates at all levels; they foster circular design approach and the adoption of circular business models; they inspire the company's environmental communication and employees training; and they monitor and report on the implementation of circular strategies within the company supply chain and business processes. They analyse and re-address issues linked to manufacturing processes, including materials, waste, energy and product traceability and end-of-life.
Note: this definition follows the style of ESCO (https://esco.ec.europa.eu/en) and has been formulated by the CirCLER technical team with the purpose of requesting its inclusion in the ESCO database later.
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3. Methodological approach for:
the identification of the CETM skills gaps & needs
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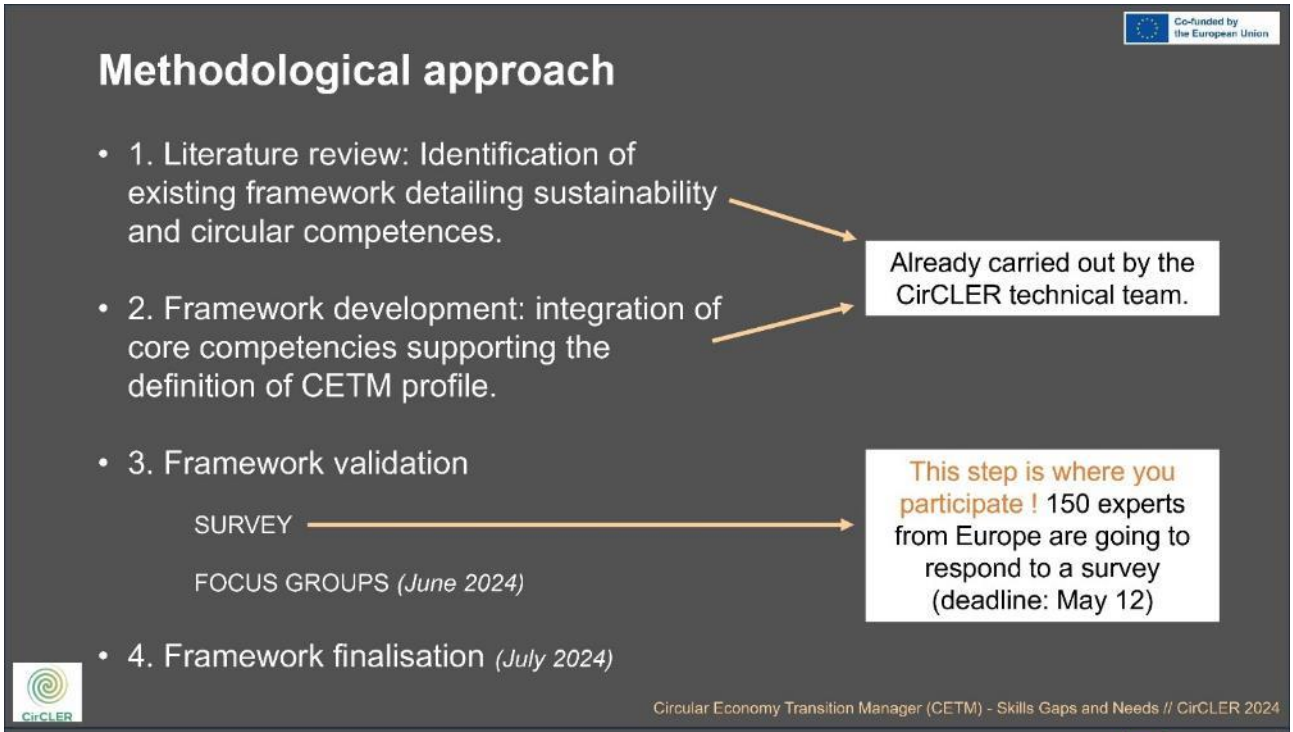
Co-funded by the European Union
Methodological approach
• 1. Literature review: Identification of existing framework detailing sustainability and circular competences.
• 2. Framework development: integration of core competencies supporting the definition of CETM profile.
Already carried out by the CirCLER technical team.
• 3. Framework validation
SURVEY
FOCUS GROUPS (June 2024)
This step is where you participate ! 150 experts from Europe are going to respond to a survey (deadline: May 12)
• 4. Framework finalisation (July 2024)
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4. Competency framework proposal for:
Circular Economy Transition Manager (CETM)
for the Furniture Sector
- to be validated by 150 experts through a survey -
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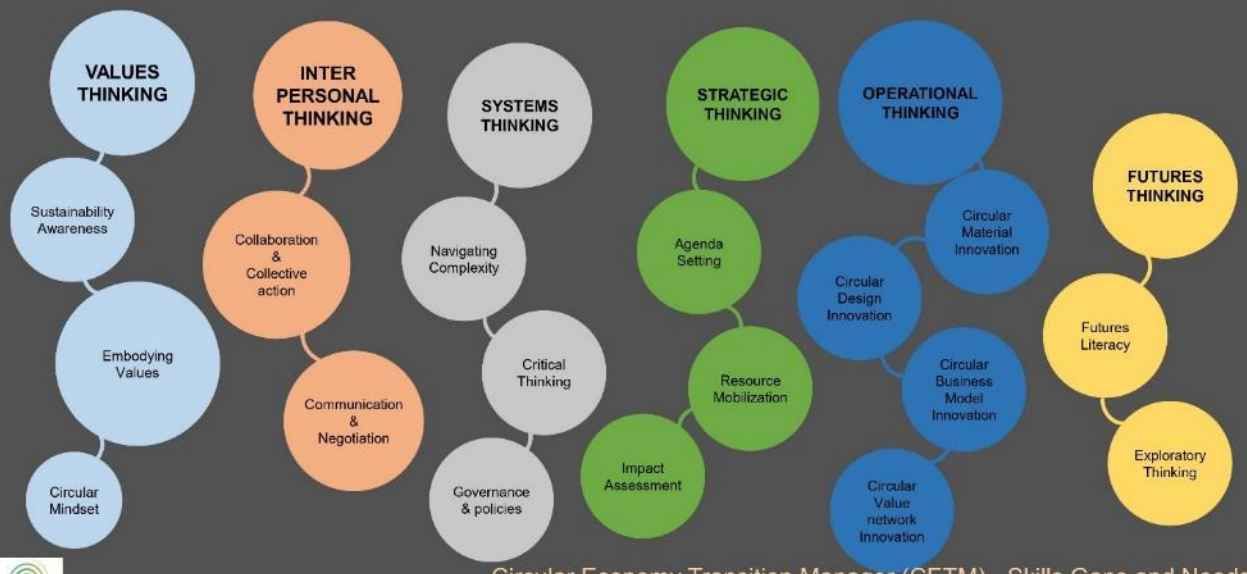
Basic concepts:

Competency: "a functionally linked complex overview of knowledge, skills, and attitudes that enable successful task performance and problem-solving." *Wiek et al 2011.*

Circular Economy transition manager competencies: the set of integrated knowledge, skills and attitudes enabling a transition manager to engage its company and its stakeholders towards a circular economy.

Circular Economy Transition Manager (CETM) - Skills Gaps and Needs // CirCLER 2024

Proposed competency framework for the CETM



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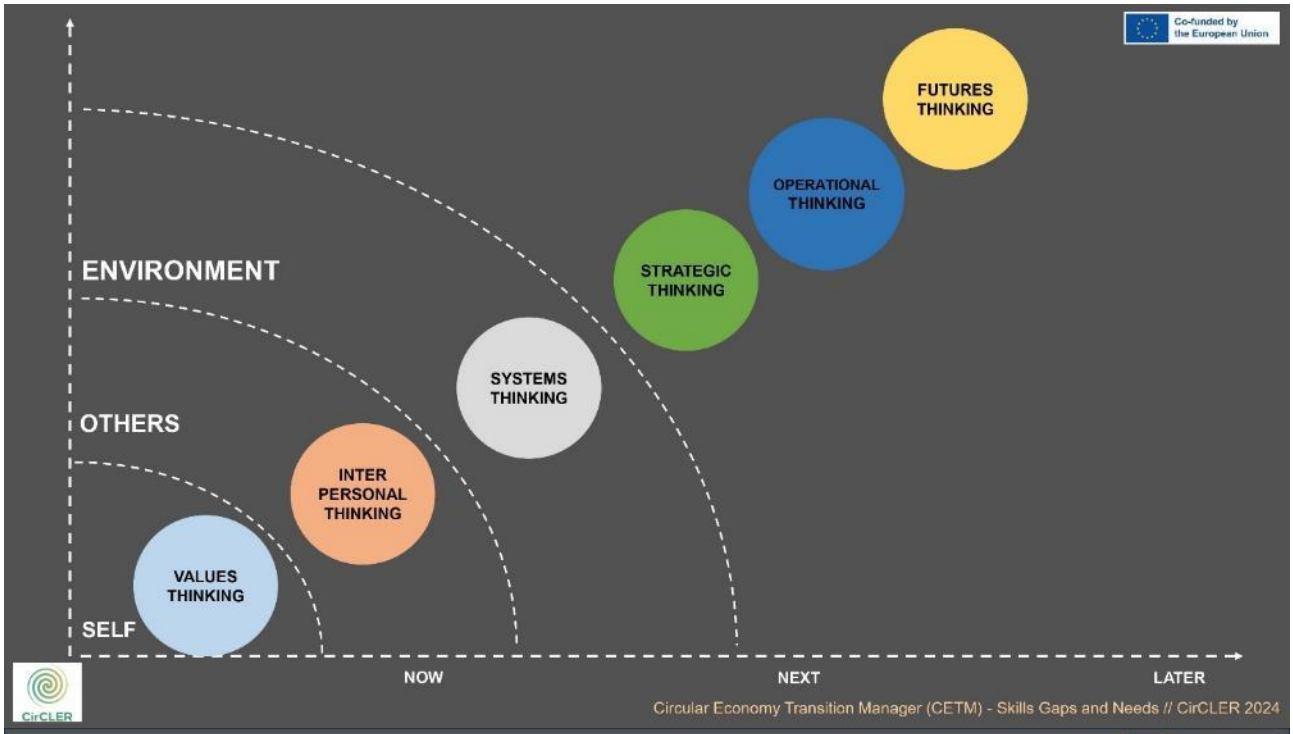
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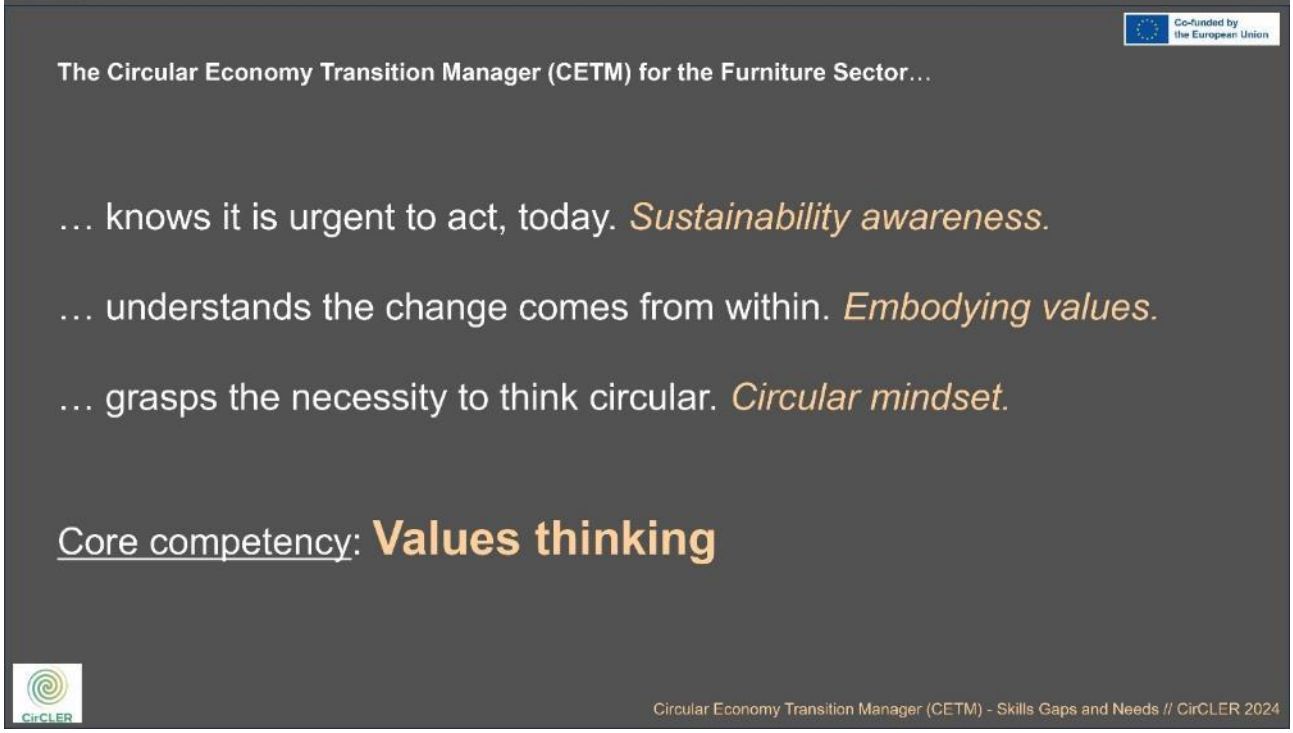
FUTURES THINKING
OPERATIONAL THINKING
STRATEGIC THINKING
SYSTEMS THINKING
INTER PERSONAL THINKING
VALUES THINKING
ENVIRONMENT
OTHERS
SELF
NOW
NEXT
LATER
CirCLER
Circular Economy Transition Manager (CETM) - Skills Gaps and Needs // CirCLER 2024


Co-funded by the European Union
The Circular Economy Transition Manager (CETM) for the Furniture Sector…
… knows it is urgent to act, today. Sustainability awareness.
… understands the change comes from within. Embodying values.
… grasps the necessity to think circular. Circular mindset.
Core competency: Values thinking
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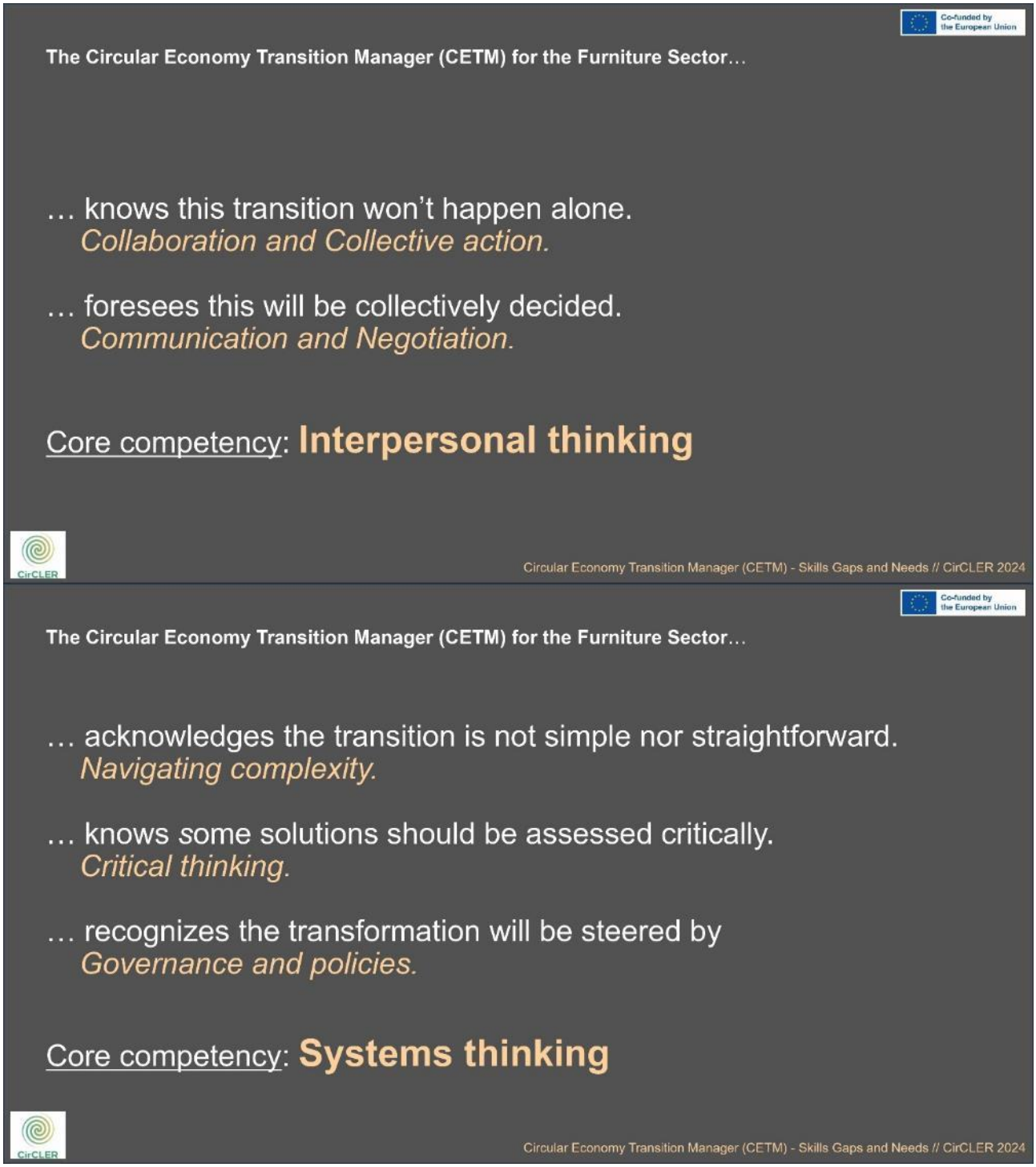
Circular Economy Transition Manager (CETM) - Skills Gaps and Needs // CirCLER 2024


Co-funded by the European Union
The Circular Economy Transition Manager (CETM) for the Furniture Sector…
… knows this transition won't happen alone.
Collaboration and Collective action.
… foresees this will be collectively decided.
Communication and Negotiation.
Core competency: Interpersonal thinking
CirCLER
Circular Economy Transition Manager (CETM) - Skills Gaps and Needs // CirCLER 2024
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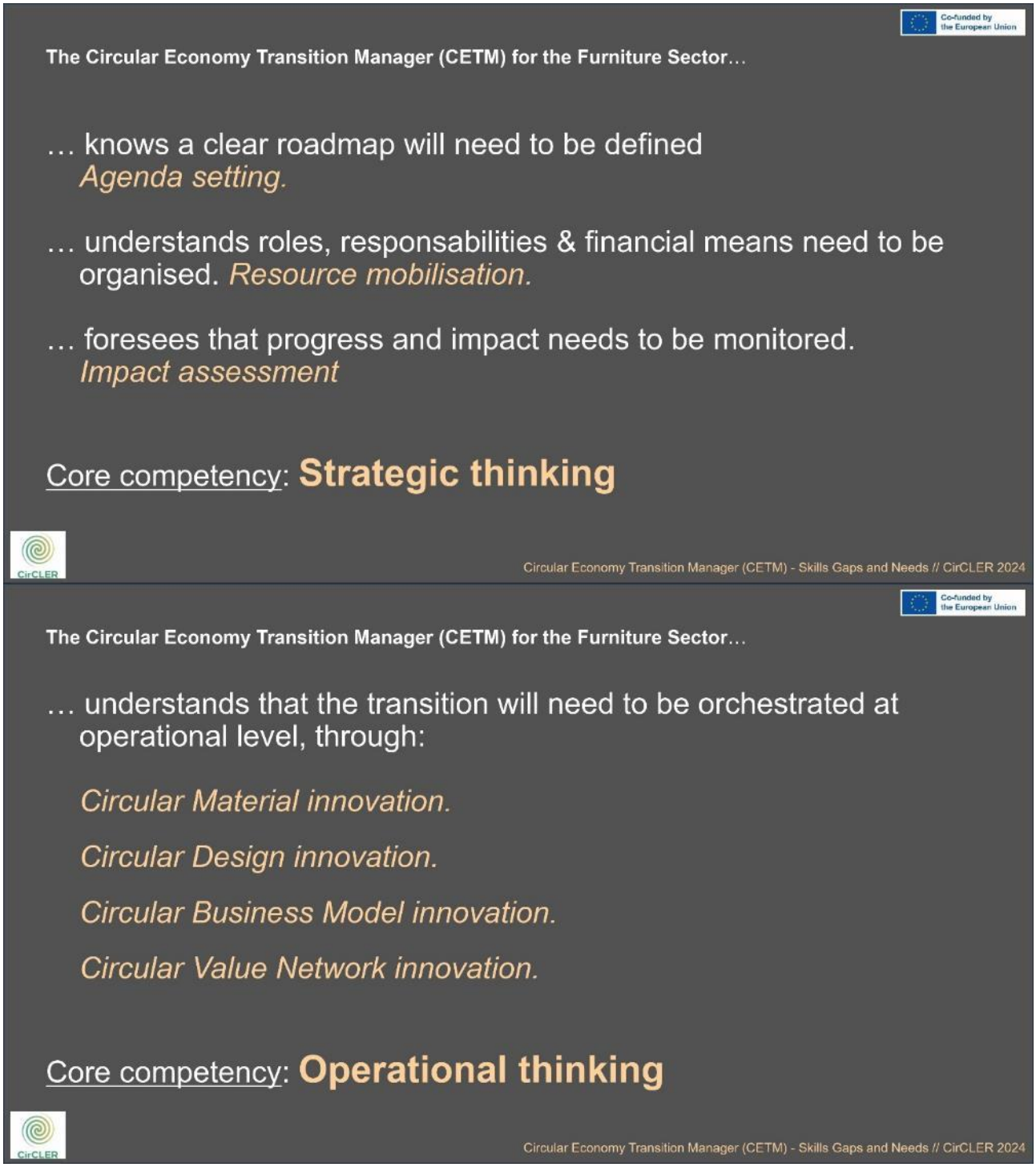
The Circular Economy Transition Manager (CETM) for the Furniture Sector…
… acknowledges the transition is not simple nor straightforward.
Navigating complexity.
… knows some solutions should be assessed critically.
Critical thinking.
… recognizes the transformation will be steered by
Governance and policies.
Core competency: Systems thinking
CirCLER
Circular Economy Transition Manager (CETM) - Skills Gaps and Needs // CirCLER 2024


Co-funded by the European Union
The Circular Economy Transition Manager (CETM) for the Furniture Sector…
… knows a clear roadmap will need to be defined
Agenda setting.
… understands roles, responsabilities & financial means need to be organised. Resource mobilisation.
… foresees that progress and impact needs to be monitored.
Impact assessment
Core competency: Strategic thinking
CirCLER
Circular Economy Transition Manager (CETM) - Skills Gaps and Needs // CirCLER 2024
Co-funded by the European Union
The Circular Economy Transition Manager (CETM) for the Furniture Sector…
… understands that the transition will need to be orchestrated at operational level, through:
Circular Material innovation.
Circular Design innovation.
Circular Business Model innovation.
Circular Value Network innovation.
Core competency: Operational thinking
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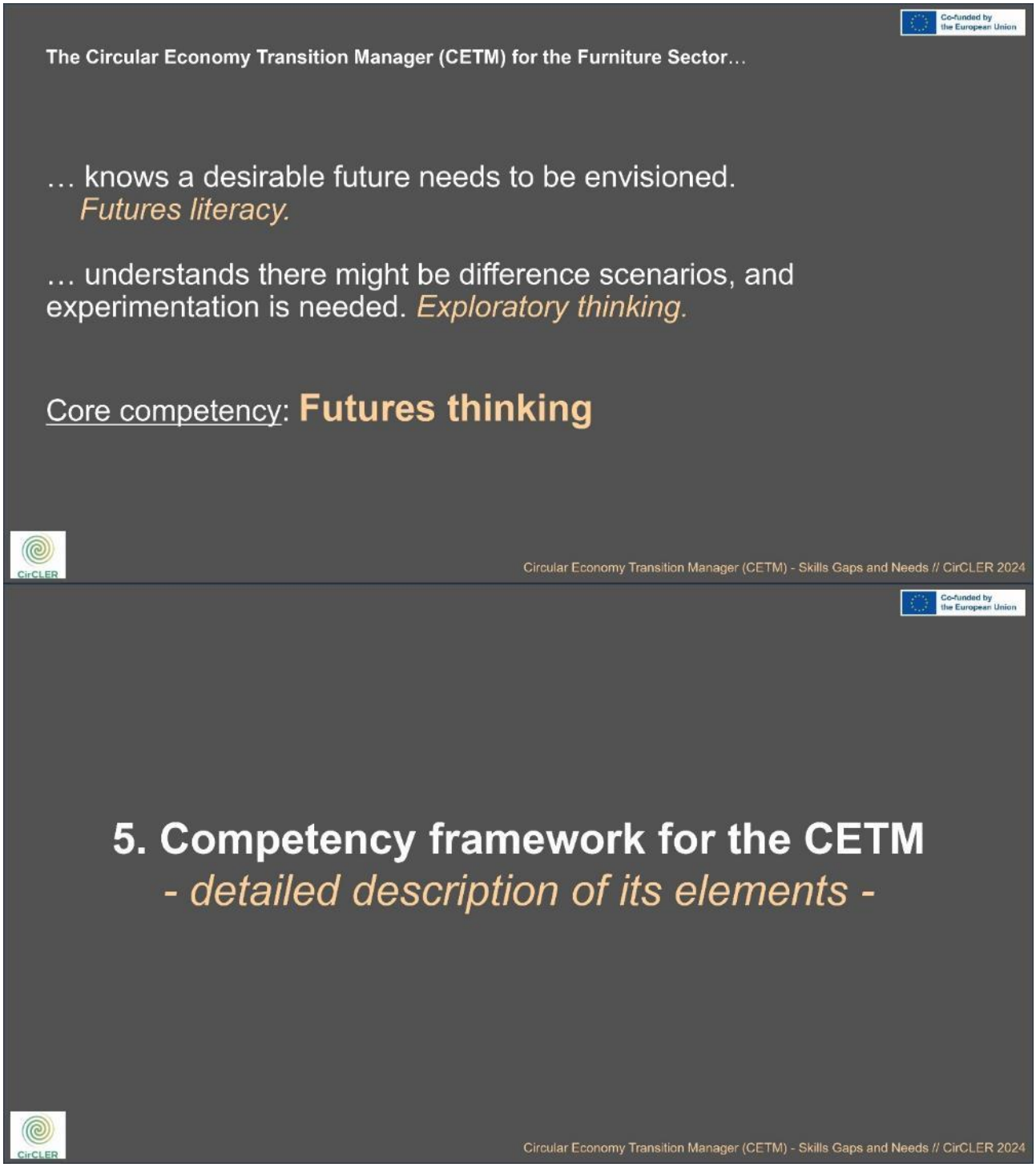
Co-funded by the European Union
The Circular Economy Transition Manager (CETM) for the Furniture Sector…
… knows a desirable future needs to be envisioned.
Futures literacy.
… understands there might be difference scenarios, and experimentation is needed. Exploratory thinking.
Core competency: Futures thinking
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5. Competency framework for the CETM
- detailed description of its elements -
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COMPETENCY AREA	DESCRIPTION	COMPETENCY	KNOWLEDGE	SKILLS	ATTITUDE
Values thinking	Values Thinking is focused on integrating goals, values, ethics, equity, and justice into one's decision making. This is about recognizing and explaining the different values of individuals, groups, organizations, and cultures, and understanding how these differences may impact the development of circularity solutions. It is also about self-reflection to help understand how one's norms, values, and preferences compare to others, and how that may influence sustainability worldview.	Sustainability awareness	Having a thorough understanding of sustainability issues at stake. Knowing contemporary frameworks (SDGs, planetary boundaries, doughnut economics) used in understanding sustainability.	Can recognize key sustainability impacts of current production.	Proactive approach towards environmental responsibility.
		Embodying values	To acknowledge that humans are part of nature; and to respect the needs and rights of other species and of nature itself in order to restore and regenerate healthy and resilient ecosystems.	Being able to reflect on personal experiences to align with sustainability values.	Willingness to adopt a self-critical perspective, understanding personal and company's role and responsibility in sustainability issues, ability to adopt a transformative mindset.
		Circular mindset	Having a clear understanding of the circular economy concept through knowledge of core principles and frameworks (butterfly model, 9rs, value hill). Having a shared circular economy vocabulary and taxonomy in place.	Being able to frame issues from a circularity perspective and select the right circularity principle to conduct change.	Positive mindset towards circular change and adaptation in organizational culture.

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COMPETENCY AREA	DESCRIPTION	COMPETENCY	KNOWLEDGE	SKILLS	ATTITUDE
Interpersonal thinking	Interpersonal thinking is focused on connecting and collaborating with others to successfully plan and implement circularity solutions. Stakeholders include anyone who is involved in or will be impacted by a project. Engaging with other stakeholders is important because it will provide you with a variety of resources and support that you may not have by completing a project on your own.	Collaboration & collective action	Understanding that circular economy transition does not happen through the transformation of a single company but requires systemic collaboration.	Being able to apply tools of collective intelligence to run multi-stakeholders workshops.	Ability to work collaboratively in multidisciplinary teams for circular solutions. Ability to act for change in collaboration with others.
		Communication & negotiation	Having a basic understanding of sustainability communication.	Being able to translate what circular economy means for different business functions and for the company. Being able to communicate and sell circular benefits to internal and external stakeholders (e.g. Customers, suppliers, partners, etc.). Being able to navigate the possible tensions between profit making, social development and environmental sustainability.	Ability to communicate with different stakeholders through technical and non technical vocabulary.

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COMPETENCY AREA	DESCRIPTION	COMPETENCY	KNOWLEDGE	SKILLS	ATTITUDE
Systems thinking	Systems thinking is focused on examining sustainability problems through a lens of interconnectedness and complexity. This competency is about identifying and understanding the systems that contribute to sustainability problems, then finding ways to intervene in these systems to develop appropriate solutions.	Navigating complexity	Having a clear understanding that every human/enterprise action has environmental, social, cultural and economic impacts.	Being able to approach a sustainability problem from all sides; to consider time, space and context in order to understand how elements interact within and between systems.	Is concerned about the short- and long- term impacts of personal and company' actions on others and the planet.
		Critical thinking	Knowing that sustainability claims without robust evidence are often mere communication strategies, also known as greenwashing.	Being able to assess information and arguments, identify assumptions, challenge the status quo, and reflect on how personal, social and cultural backgrounds influence thinking and conclusions.	Ability to reflect on multiple worldviews.
		Governance and policies	Having a global understanding of national and EU policies enabling or hindering the transition of the furniture sector towards circularity.	Being able to actively monitor upcoming changes in policy. Being able to translate new policies and directives into concrete transformative plans at company level.	Ability to screen and monitor policy changes.

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COMPETENCY AREA	DESCRIPTION	COMPETENCY	KNOWLEDGE	SKILLS	ATTITUDE
Strategic thinking	Strategic thinking is focused on translating future visions into successful pathways to transform one's business towards circularity. This competency often includes principles of project management, and details agenda setting, resources mobilisation as well as the development and monitoring of key performance indicators.	Agenda setting	Having a clear understanding of how circular economy aligns with their company's strategy and goals.	Formulate strategies towards increased resource-efficiency and circularity based on relevant theories, methods and tools from multiple disciplines.	Positive mindset towards strategic change.
		Resource mobilization	Knowing what kind of technical, financial and social resources need to be mobilized to enable a successful transition.	Can budget and forecast resources needed to transition Can identify sources of financing (national and EU programmes) Can develop a training programme to enhance employees' skills.	Ability to search for innovative financial and non-financial resources.
		Circular Impact assessment	Having a general understanding of methods to assess impact of products and services from a circularity perspective.	Is able to recognize environmental impact throughout the life cycle of a product or service.	Understands the need to assess systematically the environmental impact of products and services.

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COMPETENCY AREA	DESCRIPTION	COMPETENCY	KNOWLEDGE	SKILLS	ATTITUDE
Operational thinking	Operational thinking is focused on finding concrete ways to take action in creating circularity solutions. It takes a multi-level perspective (from micro, meso to macro level) addressing materials, design, business models and value network perspectives to systematically develop circularity solutions based on circular economy principles.	Circular material innovation	Having knowledge on alternative materials that are recyclable, renewable, compostable and suitable for furniture production.	Ability to support designers in selecting and prioritizing materials that can easily be recycled, reused or composted.	Openness to innovation and new ways of thinking.
		Circular design innovation	Having a thorough understanding of circular design principles following the 9Rs framework.	Ability to support designers in developing products for multiple use cycles.	Openness to innovation and new ways of thinking.
		Circular business model innovation	Understanding the concept of closed-loop systems.	Being able to translate the principles and concepts of the circular economy into meaningful value propositions.	Willingness to challenge traditional business models for sustainability.
		Circular value network innovation	Understanding the importance of taking an ecosystem perspective when developing circular solutions.	Being able to define the circular supply chain (value network) of a new circular solution and identify opportunities where the current linear supply chain could be transformed into a circular one.	Ability to work collaboratively in multidisciplinary teams for circular solutions.

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COMPETENCY AREA	DESCRIPTION	COMPETENCY	KNOWLEDGE	SKILLS	ATTITUDE
Futures thinking	Futures Thinking is focused on analysing and evaluating trends, uncertainty, path dependency, feasibility to create circularity visions for the future. This competency is about developing scenarios, models, and visions to find strategic ways to intervene in current systems. Futures Thinking considers historical and cultural ideas of the future, as well as our own perspective of possible futures based on personal context and values.	Futures literacy	Knowing the difference between expected, preferred and alternative futures for sustainability scenarios.	Envisioning alternative sustainable futures by imagining and developing alternative scenarios and identifying the steps needed to achieve a preferred sustainable future.	Being aware that the projected consequences on self, business and community may influence preferences for certain scenarios above others.
		Exploratory thinking	Adopting a relational way of thinking by exploring and linking different disciplines.	Being able to use creativity methods (design thinking) and experimentation tools (lean methods) to test and validate future solutions.	Being committed to considering circularity challenges and opportunities from different angles.

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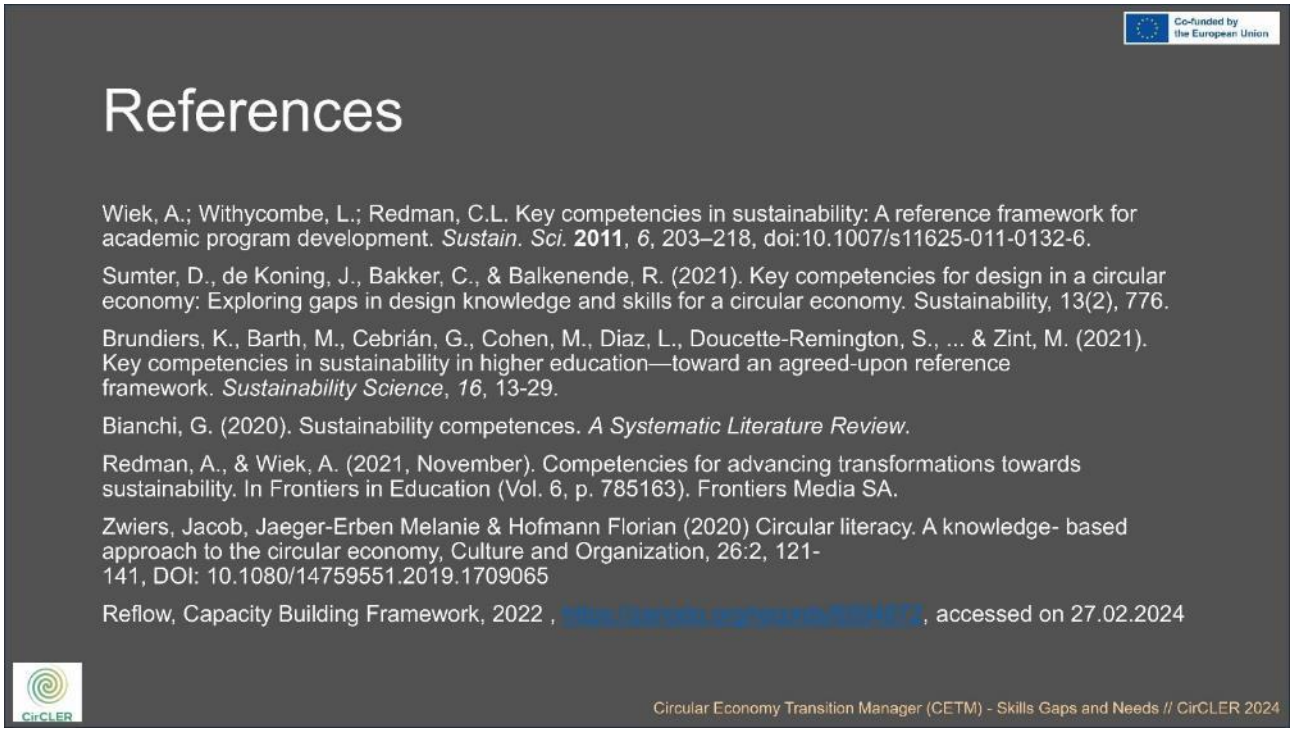
Co-funded by the European Union
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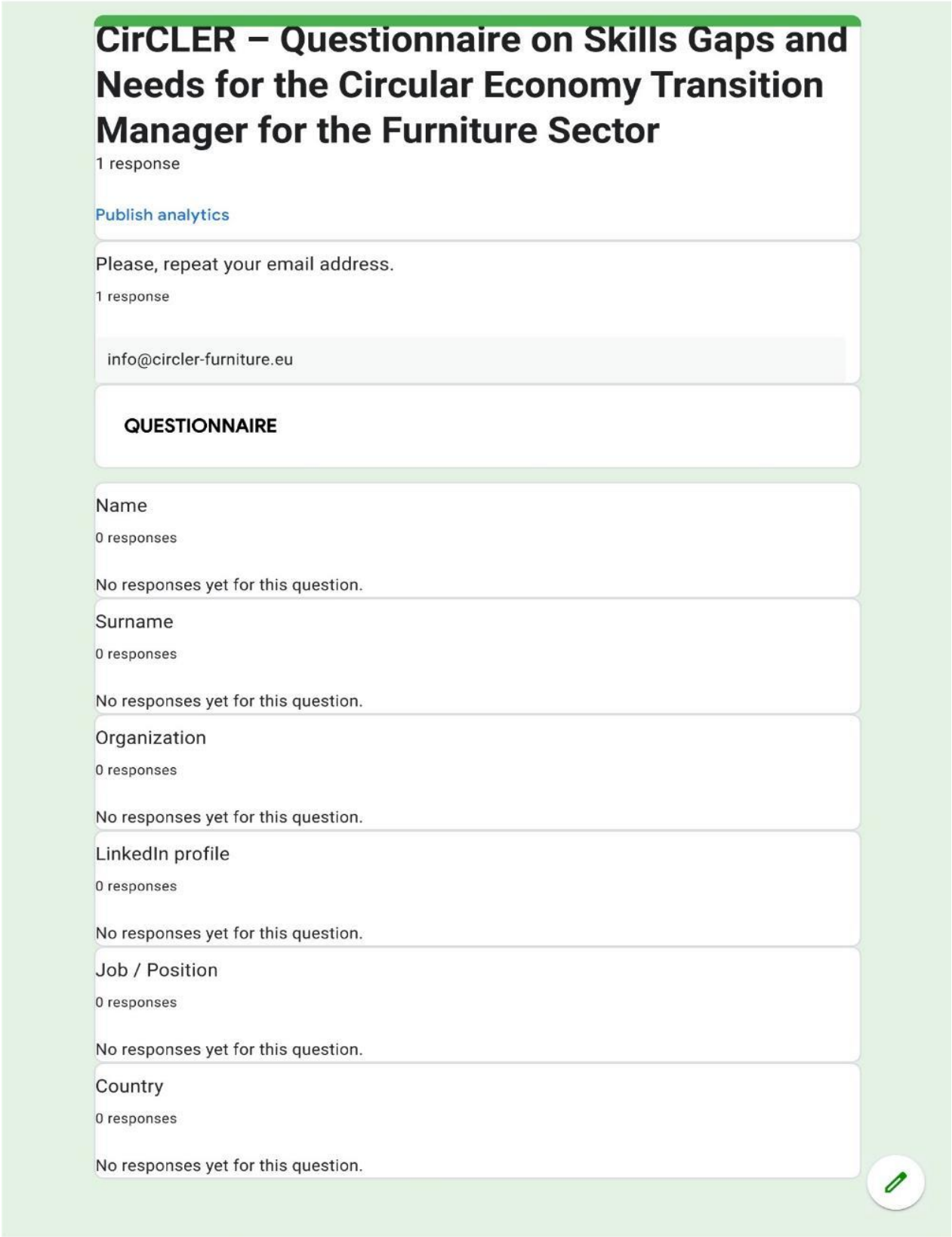
CirCLER
Circular Economy Transition Manager (CETM) - Skills Gaps and Needs // CirCLER 2024

5.2 Annex II - CirCLER survey on skills gaps and needs

Link to the Annex II - CirCLER - Questionnaire on Skills Gaps and Needs for the Circular Economy Transition Manager for the Furniture Sector



CirCLER – Questionnaire on Skills Gaps and Needs for the Circular Economy Transition Manager for the Furniture Sector

1 response

Publish analytics

Please, repeat your email address.

1 response

info@circler-furniture.eu

QUESTIONNAIRE

Name

0 responses

No responses yet for this question.

Surname

0 responses

No responses yet for this question.

Organization

0 responses

No responses yet for this question.

LinkedIn profile

0 responses

No responses yet for this question.

Job / Position

0 responses

No responses yet for this question.

Country

0 responses

No responses yet for this question.

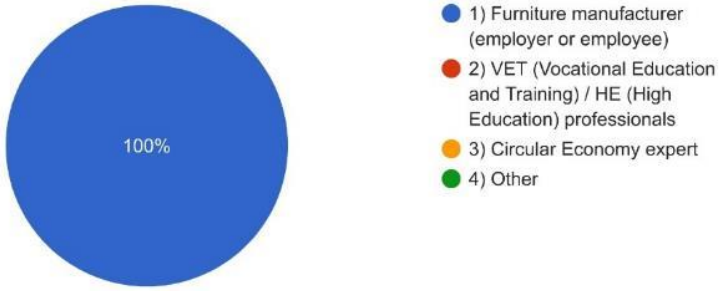
0 responses

No responses yet for this question.

Type of professional

Copy

1 response



0 responses

No responses yet for this question.

If you are expert in additional fields than the one selected above, please select it or them hereafter:

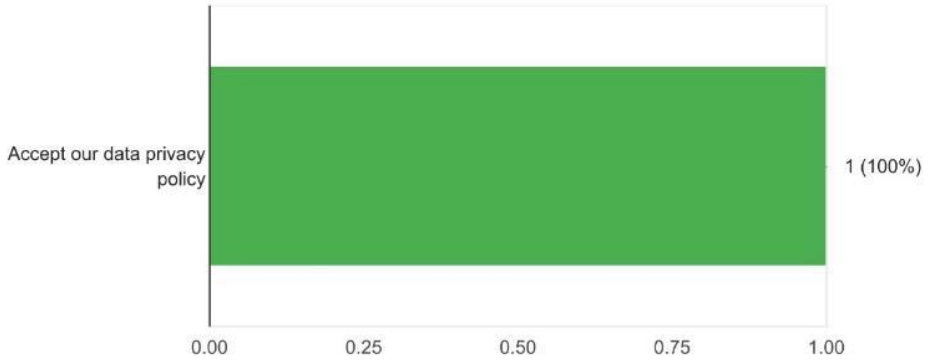
0 responses

No responses yet for this question.

Data privacy policy

Copy

1 response



Furniture manufacturer (employer or employee)

Type of Products. Please choose all those that apply:

0 responses

No responses yet for this question.

0 responses

No responses yet for this question.

Size of the company

0 responses

No responses yet for this question.

The average turnover over the last three years of your company was...

0 responses

No responses yet for this question.

VET (Vocational Education and Training) / HE (High Education) professionals

Type of professional:

0 responses

No responses yet for this question.

Field of studies / research:

0 responses

No responses yet for this question.

0 responses

No responses yet for this question.

Circular Economy expert

0 responses

No responses yet for this question.

If you have checked the "Other" option, please, indicate which one:

0 responses

No responses yet for this question.

Section for FURNITURE MANUFACTURERS (employer o employee)

Please, rate the level of **IMPORTANCE** of these six "competencies areas" for successfully leading in an integrated way the circular transition of a furniture company (between 0 - Not important at all and 10 - Extremely important).
Rate the current level of **PROFICIENCY** of the person in charge of the circular economy transition in your company (between 0 - No Dominance at all and 10 - Extremely high dominance) in the following six "competencies areas".
Finally, rate the level of **CURRENT TRAINING OFFER** available to cover such competencies areas (Between 0 No training offer and 10 Extremely Abundant training offer).

Competency area 1: VALUES THINKING

1.a VALUES THINKING - IMPORTANCE

0 responses

No responses yet for this question.

1.b VALUES THINKING - PROFICIENCY

0 responses

No responses yet for this question.

1.c VALUES THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 2: INTERPERSONAL THINKING

2.a INTERPERSONAL THINKING - IMPORTANCE

0 responses

No responses yet for this question.

2.b INTERPERSONAL THINKING - PROFICIENCY

0 responses

No responses yet for this question.

2.c INTERPERSONAL THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 3: SYSTEMS THINKING

3.a SYSTEMS THINKING - IMPORTANCE

0 responses

No responses yet for this question.

3.b SYSTEMS THINKING - PROFICIENCY

0 responses

No responses yet for this question.

3.c SYSTEMS THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 4: STRATEGIC THINKING

4.a STRATEGIC THINKING - IMPORTANCE

0 responses

No responses yet for this question.

4.b STRATEGIC THINKING - PROFICIENCY

0 responses

No responses yet for this question.

4.c STRATEGIC THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 5: OPERATIONAL THINKING

5.a OPERATIONAL THINKING - IMPORTANCE

0 responses

No responses yet for this question.

5.b OPERATIONAL THINKING - PROFICIENCY

0 responses

No responses yet for this question.

5.c OPERATIONAL THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 6: FUTURE THINKING

6.a FUTURE THINKING - IMPORTANCE

0 responses

No responses yet for this question.

6.b FUTURE THINKING - PROFICIENCY

0 responses

No responses yet for this question.

6.c FUTURE THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Open question:

Do you consider that we miss any RELEVANT competency within any of the above six areas ? If yes, please, detail it.

0 responses

No responses yet for this question.

Section for FURNITURE MANUFACTURERS (employer o employee)

Competency area 1: VALUES THINKING

Competency 1.1: Sustainability awareness

1.1.a: Sustainability awareness - IMPORTANCE

0 responses

No responses yet for this question.

1.1.b: Sustainability awareness - PROFICIENCY

0 responses

No responses yet for this question.

1.1.c: Sustainability awareness - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 1.2: Embodying values

1.2.a: Embodying values - IMPORTANCE

0 responses

No responses yet for this question.

1.2.b: Embodying values - PROFICIENCY

0 responses

No responses yet for this question.

1.2.c: Embodying values - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 1.3: Circular mindset

1.3.a: Circular mindset - IMPORTANCE

0 responses

No responses yet for this question.

1.3.b: Circular mindset - PROFICIENCY

0 responses

No responses yet for this question.

1.3.c: Circular mindset - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 2: INTERPERSONAL THINKING

Competency 2.1: Collaboration & collective action

2.1.a: Collaboration & collective action - IMPORTANCE

0 responses

No responses yet for this question.

2.1.b: Collaboration & collective action - PROFICIENCY

0 responses

No responses yet for this question.

2.1.c: Collaboration & collective action - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 2.2: Communication & negotiation

2.2.a: Communication & negotiation - IMPORTANCE

0 responses

No responses yet for this question.

2.2.b: Communication & negotiation - PROFICIENCY

0 responses

No responses yet for this question.

2.2.c: Communication & negotiation - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 3: SYSTEMS THINKING

Competency 3.1: Navigating complexity

3.1.a: Navigating complexity - IMPORTANCE

0 responses

No responses yet for this question.

3.1.b: Navigating complexity - PROFICIENCY

0 responses

No responses yet for this question.

3.1.c: Navigating complexity - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 3.2: Critical thinking

3.2.a: Critical thinking - IMPORTANCE

0 responses

No responses yet for this question.

3.2.b: Critical thinking - PROFICIENCY

0 responses

No responses yet for this question.

3.2.c: Critical thinking - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 3.3: Governance and policies

3.3.a: Governance and policies - IMPORTANCE

0 responses

No responses yet for this question.

3.3.b: Governance and policies - PROFICIENCY

0 responses

No responses yet for this question.

3.3.c: Governance and policies - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 4: STRATEGIC THINKING

Competency 4.1: Agenda setting

4.1.a: Agenda setting - IMPORTANCE

0 responses

No responses yet for this question.

4.1.b: Agenda setting - PROFICIENCY

0 responses

No responses yet for this question.

4.1.c: Agenda setting - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 4.2: Resource mobilization

4.2.a: Resource mobilization - IMPORTANCE

0 responses

No responses yet for this question.

4.2.b: Resource mobilization - PROFICIENCY

0 responses

No responses yet for this question.

4.2.c: Resource mobilization - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 4.3: Circular Impact assessment

4.3.a: Circular Impact assessment - IMPORTANCE

0 responses

No responses yet for this question.

4.3.b: Circular Impact assessment - PROFICIENCY

0 responses

No responses yet for this question.

4.3.c: Circular Impact assessment - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 5: OPERATIONAL THINKING

Competency 5.1: Circular material innovation

5.1.a: Circular material innovation - IMPORTANCE

0 responses

No responses yet for this question.

5.1.b: Circular material innovation - PROFICIENCY

0 responses

No responses yet for this question.

5.1.c: Circular material innovation - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 5.2: Circular design innovation

5.2.a: Circular design innovation - IMPORTANCE

0 responses

No responses yet for this question.

5.2.b: Circular design innovation - PROFICIENCY

0 responses

No responses yet for this question.

5.2.c: Circular design innovation - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 5.3: Circular business model innovation

Competency 5.3.a: Circular business model innovation - IMPORTANCE

0 responses

No responses yet for this question.

Competency 5.3.b: Circular business model innovation - PROFICIENCY

0 responses

No responses yet for this question.

Competency 5.3.c: Circular business model innovation - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 5.4: Circular value network innovation

5.4.a: Circular value network innovation - IMPORTANCE

0 responses

No responses yet for this question.

5.4.b: Circular value network innovation - PROFICIENCY

0 responses

No responses yet for this question.

5.4.c: Circular value network innovation - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 6: FUTURES THINKING

Competency 6.1: Futures literacy

6.1.a: Futures literacy - IMPORTANCE

0 responses

No responses yet for this question.

6.1.b: Futures literacy - PROFICIENCY

0 responses

No responses yet for this question.

6.1.c: Futures literacy - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 6.2: Exploratory thinking

6.2.a: Exploratory thinking - IMPORTANCE

0 responses

No responses yet for this question.

6.2.b: Exploratory thinking - PROFICIENCY

0 responses

No responses yet for this question.

6.2.c: Exploratory thinking - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Open question:

Do you consider that we miss any RELEVANT competency within any of the above six areas ? If yes, please, detail it.

0 responses

No responses yet for this question.

Section for VET / HE professionals / Circular Economy Experts and other professionals

Competency area 1: VALUES THINKING

1.a VALUES THINKING - IMPORTANCE

0 responses

No responses yet for this question.

1.c VALUES THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 2: INTERPERSONAL THINKING

2.a INTERPERSONAL THINKING - IMPORTANCE

0 responses

No responses yet for this question.

2.c INTERPERSONAL THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 3: SYSTEMS THINKING

3.a SYSTEMS THINKING - IMPORTANCE

0 responses

No responses yet for this question.

3.c SYSTEMS THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 4: STRATEGIC THINKING

4.a STRATEGIC THINKING - IMPORTANCE

0 responses

No responses yet for this question.

4.c STRATEGIC THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 5: OPERATIONAL THINKING

5.a OPERATIONAL THINKING - IMPORTANCE

0 responses

No responses yet for this question.

5.c OPERATIONAL THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 6: FUTURE THINKING

6.a FUTURE THINKING - IMPORTANCE

0 responses

No responses yet for this question.

6.c FUTURE THINKING - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Open question:

Do you consider that we miss any RELEVANT competency within any of the above six areas ? If yes, please, detail it.

0 responses

No responses yet for this question.

Section for VET / HE professionals / Circular Economy Experts and other professionals

Competency area 1: VALUES THINKING

Competency 1.1: Sustainability awareness

1.1.a: Sustainability awareness - IMPORTANCE

0 responses

No responses yet for this question.

1.1.c: Sustainability awareness - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 1.2: Embodying values

1.2.a: Embodying values - IMPORTANCE

0 responses

No responses yet for this question.

1.2.c: Embodying values - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 1.3: Circular mindset

1.3.a: Circular mindset - IMPORTANCE

0 responses

No responses yet for this question.

1.3.c: Circular mindset - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 2: INTERPERSONAL THINKING

Competency 2.1: Collaboration & collective action

2.1.a: Collaboration & collective action - IMPORTANCE

0 responses

No responses yet for this question.

2.1.c: Collaboration & collective action - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 2.2: Communication & negotiation

2.2.a: Communication & negotiation - IMPORTANCE

0 responses

No responses yet for this question.

2.2.c: Communication & negotiation - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 3: SYSTEMS THINKING

Competency 3.1: Navigating complexity

3.1.a: Navigating complexity - IMPORTANCE

0 responses

No responses yet for this question.

3.1.c: Navigating complexity - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 3.2: Critical thinking

3.2.a: Critical thinking - IMPORTANCE

0 responses

No responses yet for this question.

3.2.c: Critical thinking - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 3.3: Governance and policies

3.3.a: Governance and policies - IMPORTANCE

0 responses

No responses yet for this question.

3.3.c: Governance and policies - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 4: STRATEGIC THINKING

Competency 4.1: Agenda setting

4.1.a: Agenda setting - IMPORTANCE

0 responses

No responses yet for this question.

4.1.c: Agenda setting - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 4.2: Resource mobilization

4.2.a: Resource mobilization - IMPORTANCE

0 responses

No responses yet for this question.

4.2.c: Resource mobilization - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 4.3: Circular Impact assessment

4.3.a: Circular Impact assessment - IMPORTANCE

0 responses

No responses yet for this question.

4.3.c: Circular Impact assessment - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 5: OPERATIONAL THINKING

Competency 5.1: Circular material innovation

5.1.a: Circular material innovation - IMPORTANCE

0 responses

No responses yet for this question.

5.1.c: Circular material innovation - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 5.2: Circular design innovation

5.2.a: Circular design innovation - IMPORTANCE

0 responses

No responses yet for this question.

5.2.c: Circular design innovation - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 5.3: Circular business model innovation

Competency 5.3.a: Circular business model innovation - IMPORTANCE

0 responses

No responses yet for this question.

Competency 5.3.c: Circular business model innovation - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 5.4: Circular value network innovation

5.4.a: Circular value network innovation - IMPORTANCE

0 responses

No responses yet for this question.

5.4.c: Circular value network innovation - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency area 6: FUTURES THINKING

Competency 6.1: Futures literacy

6.1.a: Futures literacy - IMPORTANCE

0 responses

No responses yet for this question.

6.1.c: Futures literacy - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Competency 6.2: Exploratory thinking

6.2.a: Exploratory thinking - IMPORTANCE

0 responses

No responses yet for this question.

6.2.c: Exploratory thinking - CURRENT TRAINING OFFER

0 responses

No responses yet for this question.

Open question:

Do you consider that we miss any RELEVANT competency within any of the above six areas ? If yes, please, detail it.

0 responses

No responses yet for this question.

Biggest barriers for deploying circular economy in furniture industry

Please, choose a maximum of 3 options:

0 responses

No responses yet for this question.

If you have selected "Other", please, indicate which one / ones:

0 responses

No responses yet for this question.

Additional questions

Would you suggest to the CirCLER partnership to look at any VERY relevant course that can be considered as a high level REFERENCE in the Circular Economy field in your or other country? If yes, please, provide the name and a website link to it. (We would like to stress that it should not be just a course on Circular Economy, it should be one that can represent a qualitative reference for our sector, in spite of not focusing specifically on it).

0 responses

No responses yet for this question.

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