SAWYER
Skills and safety needs in a circular furniture sector

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Furniture Sector Forecasted Scenario in relation to Circular Economy in 2030

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List of Acronyms

BREEAM - The Building Research Establishment's Environmental Assessment Method

EMAS - The EU Eco-Management and Audit Scheme

EMS - Environmental Management System

EPR - Extended Producer Responsibility

ERP - Energy Related Product

EU - European Union

EUTR - European Union Timber Regulation

FSC - Forest Stewardship Council

GPP - Green Public Procurement

ISO - International Organization for Standardization

LEED - Leadership in Energy and Environmental Design

PEFC - Programme for the Endorsement of Forest Certification

REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals

RED - Renewable energy Directive

RoHS - Restriction of Hazardous Substances

SVHC - Substances of very high concern

WEEE - Waste of Electrical and Electronic Equipment

1. INTRODUCTION

This document aims to provide a forecasted scenario of the situation and evolution of the EU furniture sector in 2030, in relation to the impact of the sector transition toward a more Circular Economy. It has been developed looking at the expected evolution in 2030 of the main legislative and voluntary instruments and other policies and strategies that can affect the EU furniture sector transition toward a more circular economy. Moreover, aspects related to the sector future trends and its digitization have been as well taken into consideration. Following a general introductory vision for the sector, it focuses the attention on nine key pillars of the Circular Economy transition that will be analysed and presented in details.

1.1. THE RESEARCH PROCESS: THE PARTICIPATING EXPERTS

This report is the result of a research process implemented in the framework of the SAWYER project and it was based on two main activities. The first one was a forecasting survey conducted with the involvement of 50 European Experts from 15 EU countries listed in Table 1. The second step was an international Workshop organized in Brussels and involving 20 Experts from 9 EU countries and listed in Table 2.

Table 1 – List of participants to the SAWYER survey

Person	Entity	Country
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Alex Jimenez	Nutcreatives	Spain
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Antonella Ilaria Totaro	University of Turin	Italy
Arto Rajala	VAASA UNIVERSITY	Finland
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Table 2 – List of participants to the SAWYER workshop

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The design of the Forecasting Survey and Workshop was created with main contributions from:

Mr. Juan Carlos Alonso – SAWYER Circular Economy External Expert

Mr. Joaquim Solana CENFIM

Mr. Julio Rodrigo CENFIM

Mr. Massimiliano Rumignani CENFIM

This forecasted scenario will be used in the further steps of the SAWYER project to better identify the impact of the Circular Transition on the selected professional profiles in relation to their tasks, skills, knowledge needs and Occupational and Health safety. This information will be useful to a) properly understand how jobs and the safety of workers active in this sector will evolve due to the impact of the Circular Economy transition, b) to prepare companies and workers to face the coming challenges and opportunities and c) to have a stronger basis for future European Social Dialogue discussions and collaborations.

1.2. THE METHODOLOGY USED: FORECASTING SURVEY & WORKSHOP

To forecast the furniture sector scenario in 2030, the SAWYER project carried out an analysis of legislative and voluntary instruments currently existing at EU and global level, which affect and facilitate the transition of the sector toward a more Circular Economy.

Initially, through an on-line survey, 50 European professionals from 15 EU countries, experts in Circular Economy and/or in the furniture sector were required to evaluate the level of probability and the impact of 49 Forecasted Evolutions, which are related to 21 EU legislative and voluntary instruments and other policies and strategies, listed below:

Legislative Instruments:

- Circular Economy Package of the EC
- Waste Electrical and Electronic Equipment Directive (WEEE)
- Restriction of hazardous substances in Electrical and Electronic Equipment (ROHS)
- Energy related Products Directive (ErP or eco-design directive)
- Extended Producers Responsibility (EPR schemes)
- Hazardous substances / REACH Regulation
- Formaldehyde emissions
- EU's rules on "end-of-waste" criteria
- Flame retardants
- Renewable energy Directive (RED II)
- Illegal logging and illegal timber trade

Voluntary Instruments:

- Green Public Procurement
- Environmental management in organizations
- Eco design methodology
- Eco labels (Type I, II, and III)
- Chain of custody certification
- Green building certification

Other Policies and Strategies

- Cascading use of wood
- EU industry policy for Forestry
- Forest-based Industries Blueprint
- Bioeconomy

These legislative and voluntary instruments have been selected based upon their potential impact on promoting the transition of the furniture sector toward the circular economy.

Nowadays, some of them have a reduced impact on the sector, but it is foreseen that their influence will become greater in a near future.

Once the survey results were collected and summarized, they were analysed by 20 professionals coming from 9 EU countries with different expertise ranging from the furniture sector, ecodesign and specific legislation to Circular Economy. The initial Forecasted Evolutions and the survey results can be found at: Link:

These experts deeply analysed the initial Forecasted Evolutions, the survey results and the comments given by survey respondents and then they brought together their inputs and

comments within specific small brainstorming groups during a one day workshop in Brussels. The final Forecasted Evolutions, which resulted from the Workshop sessions, can be found in Annex I.

The results of these sessions were collected and further elaborated by the SAWYER Circular Economy expert and CENFIM SAWYER team who reviewed existing research and literature on current and future trends of furniture manufacturing, at both European and global level.

The vision of the forecasted scenario for the Furniture Sector in 2030 is the result of all these joint activities that will be further used in the implementation process to properly deliver all project expected results.

2. SAWYER 2030 Scenario

Preface

Furniture manufacturers are already embracing circularity and circular practices will become more and more common, as circular economy is key to tackle climate and environmental challenges and the demands for contributions from the sector will constantly increase. Circularity is in its early stages and results will be seen in the medium-long term. The path to a circular economy requires the collaboration of different actors, ranging from policy-makers, industry, experts, academia and consumers. To ensure the success of the transition to a circular economy, it is key that harmonised rules are put in place at EU/international level and that EU initiatives are implemented in a consistent way by Member States, avoiding thus a fragmentation of the internal market and barriers to the free movement of goods.

To ensure a smooth implementation of EU initiatives, simple and smart Circular Economy rules are needed, clear definitions at EU level and a common language, especially when it comes to parameters measuring circularity, such as 'long lifetime', 'reuse', 'recyclability', among others. This is key to providing harmonised information to consumers.

Key aspects to overcome, too, when it comes to barriers to circular design, are the availability of substitution materials and parts, as well as the lack of information on substances of concern from suppliers and stringent national Regulations leading to the use of unwanted chemicals (such as the case for flame retardants, https://safefurniture.eu/).

The transition to the circular economy will depend on other parameters, too, such as increased digitalisation and tools and ongoing innovation and research efforts.

Two recent EU initiatives will favour this transition to a circular economy and the achievement of the hereafter presented scenario by 2030. On the one hand the European Green Deal (COM(2019) 640 final), which will support and accelerate the EU's industry transition to a sustainable model of inclusive growth and on the other hand the new Action Plan on Circular economy (COM(2020) 98 final), in which the furniture sector is specifically mentioned as one of the priority product groups in the context of the value chains featuring in the Plan.

SAWYER (Vision statement)

By 2030, with a broadly **digitalised furniture sector**, the wood-based furniture manufacturing industry will offer **products and services** with **environmentally conscientious design** based on **low impact and traceable raw materials, sustainable manufacturing processes**, and promotion of the **best usage and recovery scenarios** for materials and discarded products. Customers (B2B or B2C) will demand more detailed information about products and their **sustainable characteristics**, including life-cycle indicators, and consumer empowerment will be key in the success of circularity objectives. Authorities (at local, national and European level) will facilitate circularity by boosting **sustainable end-of-life scenarios** for materials and wood-based products, expanding **green public and private procurement schemes** and promoting **material efficiency policies**.

2.1. DIGITALISED FURNITURE SECTOR

According to the DIGIT-FUR project[1] forecasted vision for the furniture sector in 2025, digital tools will be massively used, on the one hand for mass-customisation for consumers (online tools, on demand manufacturing models, etc.) and on the other hand for digital manufacturing, from design (virtual modelling, artificial vision, etc.), to efficient manufacturing (Industry 4.0, robotics, additive manufacturing, etc.) and distribution (smart logistics, etc.).

These **digital tools** will promote a more circular economy, making the manufacturing processes more efficient (lower energy or raw material consumption, lower emissions or waste generation) and facilitating the traceability of substances, materials and products (via big data, block chain and Internet of Things). Additionally, digital tools will facilitate informing customers about products' sustainable characteristics ("product passport").

Additionally, the digitalisation of the sector will affect the way products are sold, making more common the **e-commerce** of furniture products. This change will have a significant effect on marketing activities and the relationship with customers (communication, promotion, distribution channels, etc.) and sales and their logistic requirements (means of transport, packaging, etc.).

2.2. ENVIRONMENTALLY CONSCIENTIOUS DESIGNED PRODUCTS AND SERVICES

Product design will be one of the pillars of the Circular Economy in 2030 to promote circularity. Wood-based furniture products will be **designed considering their entire life-cycle**, from the sourcing and use of raw materials to the end-of-life scenario. The environmentally conscientious design will include:

- Use of low impact raw materials and/or from sustainable sources (recycled materials, proximity wood and/or with certified origin, etc.) and according to their environmental performance
- Reduction of hazardous substances content (formaldehyde, flame retardants, REACh classified substances, etc.) depending on available alternatives
- Efficient manufacturing (low energy consumption, energy from renewable sources, processes with low emissions, zero waste generation, low water consumption and water recycling, etc.)
- Optimised distribution (means of transport with low impact, optimised logistic, packaging reduction and recycling, use of more sustainable materials for packaging, etc.)
- Extend the useful life of products by increasing durability, facilitating reparability, disassembly, spare parts availability, modularity, upgradability, avoiding aesthetic obsolescence, promoting circular loops such as reuse, refurbishment, remanufacturing and prioritizing these over recycling, etc.
- Facilitate the recovery of materials at product end-of-life (ease disassembly, materials compatibility for recycling, specific materials marking and identification such as plastics, dismantling instructions, etc.)

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[1] https://digit-fur.eu/

By 2030, European industry, in cooperation with policy-makers, will have developed further Ecodesign principles for furniture, taking into account that Ecodesign criteria will most certainly not work for all products in the same way.

The environmentally conscientious design will be supported by digital tools, which will facilitate the **simulation and visualisation** of the desired characteristics (e.g. disassembly sequence, etc.) and will supply information about the environmental characteristics of raw materials to facilitate their selection by designers (e.g. environmental databases, etc.). Also, appropriate software tools and inventory databases will be available to calculate sustainability **life-cycle indicators** (e.g. carbon footprint, energy demand, etc.) for furniture products, using a harmonised methodology (e.g. Product Environmental Footprint of the European Commission or similar agreed by the sector).

The implementation of circularity in the furniture sector value chain will also imply the development of **new business models** associated to the change of perspective from product to service. These new services will cover different stages of the product life cycle, but they will be mainly centred on the use (e.g. renting and leasing) and end-of-life phases (e.g. remanufactured, upgraded, redesigned and refurbish products). New business models, based on pay-per-service model instead of buying the product, will be more frequent for some types of products, such as office and contract hospitality, and among some specific customers' profiles (e.g. young people).

Aspects related to legal requirements and compliance for second hand and repaired products will be addressed by the European Commission by 2030, such as those related to obligations under the General Product Safety Directive, product liability, REACH and restricted substances. These concerns apply to packaging of reused/refurbished products as well.

2.3. LOW IMPACT AND TRACEABLE RAW MATERIALS

Wood-based furniture products will be manufactured using wood from forests managed with sustainable criteria, and preferably of proximity. Manufacturers will have a **greater knowledge** about the sustainable characteristics and sources of raw materials, making necessary a major control of the supply chain and the traceability of the supplied materials and components. This is related to the greater demand from customers of more information related to environmental aspects of the purchased products and pressure from more restricted legislations about illegal trade of wood.

The use and relevance of existing **Chain of Custody schemes** (e.g. FSC/PEFC) will increase, as more organisations will demand this type of certification. New technologies (e.g. Internet of Things, blockchain, BIM, RFID tags, etc.) will support the traceability of materials and the substances they contain.

The use of **secondary raw materials** will be common, as the offer of this type of materials will increase (i.e. better quality and quantity of secondary materials due to better collection and recycling systems), promoted by the European Policies on Circular Economy, Cascading use of wood and Bio-economy. The market for secondary raw materials will increase because the sector will overcome current challenges related to the tracking of substances of concern in secondary materials and the imbalances in price and performance between primary and secondary materials.

The EU policies on **Climate Change** will favour the sustainable management of both internal and external forests, and the reduction of deforestation risk. The relevance of the forests for carbon storage will increase, facilitating the achievement of Climate Change objectives.

2.4. SUSTAINABLE MANUFACTURING PROCESSES

Wood based furniture products manufacturers will adapt their processes to make them **more efficient and more sustainable**. Some trends will support this transition:

- New technologies (e.g. industry 4.0, additive manufacturing, etc.) that increase the efficiency of the processes
- Greater legislative pressure on the used substances (VOCs, flame retardants, etc.) and on the environmental impact of the manufacturing process (air emissions control, etc.)
- Higher cost of the supplied energy
- Lower cost of renewable energies (e.g. solar, energy storage) and promotion of self-consumption
- Demand for Environmental Management Systems (ISO-14001, EMAS, etc.)
- Demand for life-cycle sustainability indicators in the supply chain (e.g. carbon footprint)
- Increasing cost of waste management (e.g. cost of landfill, promotion of selective waste collection, etc.)
- Increasing cost of consumables (e.g. water, etc.)
- Increasing costs of logistics (combustible costs, etc.)
- Supply risks associated to raw materials (e.g. new protected species, deforestation, uncontrolled wildfires, etc.)
- Implementation of Extended Producer Responsibility schemes (such as the actual scheme in France)
- Etc.

These changes will prompt manufacturers to reflect about the environmental impacts associated to their manufacturing processes and how to control and reduce them.

More frequently, customers, especially (B2B), will ask information about the **environmental profile of the product** and how it is manufactured (e.g. hazardous substances added in the process, carbon footprint, etc.).

2.5. BEST USE AND RECOVERY SCENARIOS

Wood-based furniture products manufacturers will have a **greater control** about the use and end-of-life scenario of their products. This will require a better product design to facilitate the desirable scenarios.

Regarding the **use scenario**, manufacturers will be required to analyse:

- How to prolong the durability of their products and adapt it to users' needs
- How to promote the maintenance of their products by customers
- How to facilitate the reparability of their products by customers or specialised providers
- How to make available the needed spare parts and consumables in the aftersales market and during product life
- How to inform the customers about all these issues and how to motivate them to take them into greater consideration.

Regarding the **end-of-life scenario,** manufacturers will analyse:

- Need and value of a take back system for their products (e.g. reverse logistic and its optimisation)
- How to facilitate the remanufacturing/reuse of their products
- How to facilitate the recycling of the materials included in their products

Dealing with these issues will require a greater knowledge of the products and customers' use profiles and the collaboration with different actors of the products **value chain** (from suppliers to potential recyclers), policy-makers (EU and national level) and municipalities. On the other hand, this greater control out of the manufacturing process could provide new business opportunities associated to these use and end-of-life scenarios.

2.6. CUSTOMER DEMANDS FOR MORE ENVIRONMENTALLY FRIENDLY PRODUCTS

During the purchasing process, customers of wood-based furniture products will demand **more information** about the environmental sustainability of products. Although costs associated to the product will probably continue to be a main decision parameter for consumers, other aspects will gain relevance, such as those associated to a greater concern for environmental issues (e.g. climate change, hazardous substances use, etc.).

Different mechanisms will be used by manufacturers to communicate these characteristics, from dedicated websites to information directly contained on the products and their packaging (e.g. ecolabels type I, II or III). This information will be harmonised at EU level (e.g. Product Environmental Footprint or similar agreed by the sector) and adapted to the level of knowledge on these issues of the targeted customers (B2B, B2C, etc.).

New (digital) tools will be put in place such as the "**product passports", watermarks or taggings,** which will contain relevant environmental information for consumers about the entire life cycle of products and other circularity parameters (e.g. recyclability potential). This will require a greater traceability of used raw materials and substances contained as well as a greater control of the supply chain and harmonised methods and databases at EU/international level to calculate and report relevant sustainability life-cycle indicators for furniture products (e.g. carbon footprint, energy demand, etc.).

Some customers will start to demand not only environmental characteristics, but also a **social profile** of the product (focusing for example on child labour, workers conditions, gender aspects, etc.) and of the entire supply chain.

To promote circularity, customers will need to have clear directions on how to **maintain/repair** the product and how to proceed to dispose it adequately.

2.7. SUSTAINABLE END-OF-LIFE SCENARIOS BOOSTED BY ADMINISTRATION

The administration will define mechanisms to boost the most **sustainable end-of-life scenarios** for wood-based furniture products and their materials.

The main mechanism will be the implementation of a harmonised **Extended Producer Responsibility scheme at EU levels**, with the involvement of manufacturers. At local level, municipalities and social entities will define collection and recycling systems for some of these products. The harmonised EPR scheme will establish harmonised requirements, clear rules and

responsibilities for the players involved, harmonise reporting obligations, set an EU-wide approach for eco-modulation of fees, cover online trade, definitions of scope, etc.

Depending on the implemented mechanism, the direct involvement of manufacturers will be more or less relevant, but in any case, they can **favour these scenarios by designing their products** taking into account the most feasible and environmental-friendly end-of-life scenario.

New legislation on waste, at EU level, will limit the most polluting end-of-life scenarios (i.e. landfill), promoting the development of new recycling/recovery scenarios and technologies.

2.8. GREEN PUBLIC AND PRIVATE PROCUREMENT SCHEMES

The GPP schemes will favour the circularity of wood-based furniture products. The public administrations and private organisations will define **more environmental requirements** in their purchase tenders.

For these, the European Commission will propose minimum mandatory green public procurement (GPP) criteria and targets, which will be implemented by a greater number of public and private organisations, and it will support capacity building with guidance, training and dissemination of good practices. Some aspects taken into consideration will be:

- Durability of the product
- Warranty period
- Content on recycled materials
- Content on hazardous substances
- Emission of hazardous substances
- Recyclability potential
- Chain of custody (origin of the raw materials)
- Environmental Management Systems
- Sustainability life-cycle indicators (e.g. carbon footprint)
- Etc.

GPP schemes will mainly affect some types of wood-furniture (e.g. office), but they will gain relevance in other types of tenders as much as more private organisations include these criteria in their purchasing strategy.

2.9. MATERIAL EFFICIENCY POLICIES

Authorities at national and European level will define policies to **promote a more efficient use of materials, including wood**. These policies will be mainly related to **Circular Economy, Cascading use of wood and Bio-economy**, which will promote the use of secondary raw materials and the most valuable recovery/recycling options of wood-based materials and products.

These aspects will gain relevance in the **funding programmes** of the European Union, asking for the development of demonstration case studies, proposals of new schemes, new and optimised recycling technologies, new business models, customer awareness campaigns, training programmes for stakeholders, etc.

ANNEX 1 - LIST OF FORECASTED EVOLUTIONS 2030.- WORKSHOP RESULTS

Topic Acronyms:

CE	Circular Economy	EMS	Environmental Management System
BE	Bioeconomy	URM	Use of Raw Materials
HS	Hazardous Substances	GPP	Green Public Procurement
EoL	End-of-life	ECL	Ecolabels
ECD	Ecodesign	GBC	Green Building Certification

Ref.	Topic	Forecasted Evolution
1.1	CE	The furniture sector will be an established priority in the Circular Economy Package of the EC (COM (2015) 614)[2], with specific legislation to increase the reuse and recycling of its products, setting specific objectives of recovery similar to existing EPR schemes.
1.2	CE	Wood and wood-based derivatives will be considered a priority raw material in future reviews of the Action Plan in Circular Economy of the European Commission (COM (2015) 614), developing specific legislation in this regard to promote how and where wood is grown, how wood is maintained, as well as its efficient use and recovery in wood and wood-based derivatives.
1.3	CE	Business models of the furniture sector based on servitization are common in certain sectors (e.g. office, student rental, co-workers, young professionals, etc.), where the manufacturer owns the product and offers the use of furniture as a service to consumers for a certain fee, which covers its maintenance, replacement, etc.
1.4	CE	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) will generate changes in the productive models of the furniture sector, developing processes and machinery that are more efficient and generating less waste, based on lean manufacturing principles and new ICT technologies (Industry 4.0).
1.5	CE	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) will produce changes in the customer service models, increasing the information to be provided to customers (for example: content of hazardous substances, product durability, manuals for repair and maintenance, instructions for the end of life management, etc.).
1.6	CE	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) will produce changes in the customer service models, increasing the minimum guarantee period and the time of spare parts availability.
21.1	BE	The European Bioeconomy strategy has identified the furniture sector as a relevant sector to achieve its objectives, setting concrete actions that bind sector companies.
21.2	BE	Based on the European Bioeconomy strategy, the European Commission will encourage significant synergies with other sectors of primary production that use and produce biological resources arise, optimizing raw materials consumption and minimizing generation of waste.

[2] The new Action Plan on Circular economy (COM(2020) 98 final) was published in March 2020 (after the Sawyer Workshop)

Ref.	Topic	Forecasted Evolution
3.1	HS	Furniture sector products that contain electrical and electronic components are affected by the requirements of the RoHS Directive (EU 2017/2102), and therefore their components cannot contain substances such as brominated flame retardants (PBDE, PBB) or heavy metals such as lead, mercury, cadmium or hexavalent chromium, including components purchased and finished outside the EU.
6.1	HS	The REACH Regulation (EC 1907/2006) classifies some of the substances used in the furniture products manufacturing, such as flame retardants, formaldehyde or VOCs, as restricted substances (Annex XVII), in the list of candidates or as extremely worrying substances (substances of very high concern –SVHC-) that require authorization (Annex XIV).
6.2	HS	The proposal presented within the REACH Regulation framework is approved to restrict the placing on the market or the use of items that emit formaldehyde at concentration levels equal or lower to 0.124 mg/m^3 (equivalent to category E1), bringing harmonization to a fragmented single market
7.1	HS	The European Commission decides to regulate the emission of formaldehyde of products at European level, fixing a value lower than category E1 (<0.124 mg/m^3) currently fixed in several European countries and in the voluntary agreement of EPF (European Panel Federation) members, bringing harmonization to a fragmented single market.
7.2	HS	The European Commission does not propose to reduce the formaldehyde occupational exposure limit below the current value of 0.3 ppm.
7.3	HS	Consumers would not have the sufficient knowledge to appreciate that a particular product does not emit formaldehyde, thus a specific label of "formaldehyde-free" to inform consumers will not be needed/effective.
9.1	HS	The use of the most toxic and dangerous flame retardants in furniture products is forbidden. Compliance with the flammability requirements set by current legislation will be secured by alternatives, such as material combinations that in themselves are fire safe, new materials, product design, including the use of interliners, with lower risk for people and the environment, and in addition smart fire prevention and education for consumers will be encouraged.
9.2	HS	Consumers do not have sufficient knowledge on fire safety to determine whether it would be appreciated that a product does not contain dangerous flame retardants (and a label could have the opposite desired effect, leading the consumer to think that fire safety decreases if no flame retardants are used), thus a specific label of "flame retardant-free" would not be effective/desired.
2.1	EoL	Some specific products that contain electrical and electronic components are affected by the requirements of the WEEE Directive (2012/19/EU), and therefore, at the end of their life cycle, they require a specific disassembly and treatment.
2.2	EoL	Some specific furniture sector products that contain electrical and electronic components are affected by the requirements of the WEEE Directive (2012/19 / EU), and guidelines are set for specific disassembly of the electrical and electronic components inside the normal recovery circuit of furniture waste.
5.1	EoL	Some national authorities define an Extended Producer Responsibility scheme or take-back scheme for some furniture products, forcing to define a system for the collection and treatment of these products at the end of their life cycle, being the organisation that put the product on the market the one responsible for covering the associated costs.
5.2	EoL	Some major manufacturers and distributors of the furniture sector and some municipalities at local level agree to define an Extended Producer Responsibility scheme or take-back scheme, which allows the products collection, return and treatment at the end of their life cycle.

Ref.	Topic	Forecasted Evolution
8.1	EoL	End-of-life waste criteria are defined for wood waste from the industry (Directive 2008/98/EC), which will produce quality standards for secondary raw materials. This scenario is not foreseen for post-consumer wood waste (contamination, quality guarantees, etc.)
8.2	EoL	There is a growing market and demand for wood waste that will be used as secondary raw materials in different sectors, ensuring their quality and traceability.
10.1	EoL	In some pilot cases and specific regions, wood furniture and panels waste are used to produce second generation biofuels, which meet the sustainability requirements set out in Directive 2018/2001/EU.
18.1	EoL	The European Commission reinforces its circular economy strategy by promoting the strategy of cascading use in the wood sector, facilitating the recovery of wood in the different stages of the product, optimising its use according to the wood quality (less contaminated, etc.)
4.1	ECD	Ecological design requirements are defined for products not-related with energy, such in the case of furniture sector products, under the eco-design (ErP) directive framework (2009/125/EC). These criteria include aspects of materials efficiency such as durability requirements, reparability, spare parts availability, disassembling easiness, use of materials, source of materials (from previous products, raw material, reused materials), etc. Private sector could exploit this to create new services and opportunities.
13.1	EMS	In Europe, 15% of companies of the furniture sector have a certified environmental management system, either EMAS or ISO-14001. The impact on certified companies will be high along the whole value chain.
13.2	EMS	Some intermediate customers (B2B), value positively that the furniture products supplier in the sector has a certified environmental management system, either EMAS or ISO-14001, which has become a competitive advantage.
14.1	ECD	20% of the European furniture sector companies will adopt criteria defined by Ecodesign ISO-14006 management system, but only 5% will reach the certification.
14.2	ECD	Few final customers (B2C) and some intermediate customers (B2B), positively value that the furniture products supplier in the sector has an Eco-design ISO-14006 management system, which has become a competitive advantage in niche markets and public procurement.
14.3	ECD	The furniture is designed to reduce the impact of used raw materials (use of recycled materials, reduction of hazardous substances content, use of wood with lower environmental impact, use of proximity wood, etc.), provoking changes in the supply chains of companies and in the managing of old furniture collected when the new one is delivered, generating new business models.
14.4	ECD	The majority of furniture is designed to extend its life cycle (more resistant materials/joints, facilitate its repair and maintenance, etc.), increasing its quality. The furniture that is not meant to last, will be designed in such a way that is easy to re/upcycle.
14.5	ECD	Low, medium and high quality furniture is designed to optimize its recovery at the end of its life cycle (to facilitate materials disassembly and separation, modularity for reuse of certain parts, reuse and remanufacturing enhancement, etc.).
11.1	URM	The type of products covered by the Regulation (EU) No. 995/2010 or EUTR is extended, reducing the number of exclusions and extending the scope to medical furniture and seating furniture (e.g. sofas, chairs, etc.). Market surveillance will be stronger and the traceability of wood from forests to furniture companies will be ensured (through sustainable and traceable chains).

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11.2	URM	The signature of an agreement, under the umbrella of the FLEGT Regulation (Regulation (EC) No 2173/2005), will be compulsory between countries that want to sell wood / wood products in the EU. A stronger market surveillance will prevent the importation and sale of illegal timber products in the EU.
16.1	URM	Customers, final customers (B2C) and especially intermediate customers (B2B), demand that the furniture product has a chain of custody certification, according to existing schemes (FSC, PEFC, etc.), which have become a standard.
16.2	URM	More than 70% of the furniture sector products will be made out of CoC certified resources. Big and medium companies and companies with high export rates will have this certification as a standard. Small companies will have difficulties to obtain this certification due to high costs of certification and high administrative efforts for developing, documenting and implementing the system.
16.3	URM	Customers, final customers (B2C) and especially intermediate customers (B2B), demand that the furniture products use wood from forests with certified management according to certificates such as FSC, PEFC, or others equivalent, which have become a standard.
16.4	URM	New technologies (e.g. Internet of Things, blockchain, BIM, RFID tags, etc.) are used to improve the traceability of wood products to ensure the chain of custody along the whole value chain and to create Material Passports to facilitate their reusing and recycling.
19.1	URM	The EU Forest Strategy extends beyond forests and deals with aspects of its value chain, such as how forest resources are used to produce products or services, taking into account regional/local conditions but without specifying requirements that imply compliance.
19.2	URM	The activities of greenhouse gas emissions compensation generate a reactivation of forest resources and plantations, making necessary their better management, traceability and monitoring, which will also supply the furniture industry.
20.1	URM	The EU furniture sector adopts concrete and binding commitments aligned with the "Forest-based Industries 2050: a vision for sustainable choices in a climate-friendly future" and in particular aligned with the following goals of the vision: i) eradicate waste in circular economy by closing materials loops with a sector target of at least 90% material collection and 70% recycling rate; ii) drive resource-efficiency in the industrial value chain by enhancing productivity in all areas (materials, manufacturing, logistics); iii) meet the increasing demand for raw materials by maximizing new secondary streams and ensuring primary raw materials supply from sustainably managed forests and iv) satisfy the growing demand for climate-friendly products by increasing the use of wood and wood-based products in our daily lives.
12.1	GPP	In Europe, it has been achieved the objective that 50% of public procurement tenders for furniture include all environmental criteria of green public procurement set by the European Union or all the ones set by each country. This percentage will be higher than 70%, if we include also those public procurement tenders for furniture that include only some of these environmental criteria.
12.2	GPP	All European countries have developed Green Public Procurement criteria for furniture, either by adopting the EU recommendations or by developing their own. Only some of them will approve a law based on these criteria, the others will just consider them as recommendations. A European directive to implement green public procurement will be adopted and countries will follow it, but some of them probably won't have it fully transposed by 2030.
15.1	ECL	Customers (final or intermediate customers) will not value ecolabels Type I (according to ISO 14024) in a massive way. Just some of these ecolabels will be

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		widely recognized and clients will consider them important, especially in specific markets and for specific products.
15.2	ECL	The amount of companies with a Type II ecolabel (according to ISO 14021) will increase a lot until 2030. This is a positive first step for this trend, but educated consumers will not give much value to self-declarations.
15.3	ECL	Intermediate customers (B2B) positively value that the furniture products have a Type III ecolabel (according to ISO 14025), which has become a competitive advantage. Final customers (B2C) will still have many difficulties to appreciate/understand the value of Type III ecolabel for products.
15.4	ECL	The different Type I ecolabels criteria that affect the furniture sector are not unified yet, this is hindering their understanding by customers (for example European label, Blue Angel, Nordic Swan, etc.).
15.5	ECL	50% of the furniture sector products have at least one type of environmental ecolabel. Ecolabel Type II will be the most common one, but Type I and III will also grow.
17.1	GBC	The criteria associated with the use of furniture that uses sustainable materials acquires greater relevance in the systems of Green building certification (e.g. LEED or BREEAM), encouraging their use in those buildings that aim to obtain this type of certification. This will act as a driver that will encourage the use of these more sustainable materials, also for buildings that don't have these certifications.