

ADVANCED TEXTILES MANUFACTURING INDUSTRY  
Learning unit 5  
Lesson 1

# EU legislation. Influence on the textiles sector. Principles of circular economy.



Innovative smart textiles & entrepreneurship

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## Introduction

This lesson (LU5.1) is about *EU legislation. Influence on the textiles sector. Principles of circular economy* are enclosed in Learning Unit 5, which corresponds to *Issues related to the sustainability of functional and smart textiles*.

The lesson describes the evolution of EU legislation in recent years and how these legislations are related to the circular economy. The definition of circular economy will be scrutinized and it will be emphasized the importance of circular economy in the textiles sector.

## 1. Overview and Status Quo of the European Green Deal

The European Green Deal is the EU's new trend in development, which "focus on transforming the European Union into a fair and growing community with an antagonistic economy". It is also an important part of the EU's vision to reach success in the Agenda of 2030 for Sustainable Development. Moreover, through Green Deal, the EU desires to offer citizens a safe and harmless environment without impacts, at the same time being fair and presenting available chances. The economic strategy should focus on Well-being.

The European Commission presented the EGD to the EU institutions and the public on December 11, 2019. After a debate took place in parliament in January 2020, the European Parliament took the decision to support the EGD, at the same time they underlined that more needed to be done to lead to a fair transition and provide everyone a chance to follow up the new trend. The European Parliament also asked for higher intermedium targets, lately, regarding carbon emissions. Frans Timmermans, who is the Executive Vice President responsible for the EGD, was assigned to supervise and develop different plans, directives, and policies, and take care of their implementation.

The main target of the EGD is, by 2050 to achieve a free-of-carbon European Union and release economic increase and resource use. The EGD does not act as a law in itself, but as a general policy strategy, underlining the desire and goals of different policy divisions. To bring into force the above plan, will have to proceed with a review of the standards that already exist and develop in the next few years the legal framework for new directives.

Eight key points make up the Green Deal:

- 1) Increasing the EU's climate ambition for 2030 and 2050
  - 2) Supplying clean, affordable, secure energy
  - 3) Mobilising industry for a clean and circular economy
  - 4) Building and renovating in an energy and resource-efficient way
  - 5) A zero pollution ambition for a toxic-free environment
  - 6) Preserving and restoring ecosystems and biodiversity
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- 7) Farm to Fork: a fair, healthy, and environmentally friendly food system
- 8) Accelerating the shift to sustainable and smart mobility [1]

## 2. Circular economy: Definition, importance, and benefits

The circular economy is an example of production and consumption, which enhance sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products as long as possible. Through this model, the lifespan of the materials is extended and at the same time, we reduce waste to a minimum. When the life of a product ends its components can be used again thanks to recycling. In this way, the materials continue to have value. This is a way to differentiate ourselves from the classic linear economic model, which is based on a take-make-consume-throw-away model. This model relies on huge quantities of low-cost, easily accessible materials and energy resources. More, part of this plan is intentional obsolescence, where a product is designed to have a limited lifespan to incentivize consumers to buy it again. The European Parliament called for actions to counter this philosophy.

### 2.1 To protect the environment

Reusing and recycling products would help to reduce the use of natural resources, reduce the deterioration of the natural landscape and habitats and help limit the lack of biodiversity. At the same time, the circular economy contributes to the reduction of the total annual greenhouse gas emissions. According to the European Environment Agency, industry, and product use are mainly responsible for 9.10% of EU greenhouse gas emissions, while waste treatment accounts for 3.32%. Developing solutions that are more efficient and sustainable at the same time would help slow down energy and resource consumption, as it is estimated that more than 80% of a product's environmental footprint is already determined by its design stage. Choosing to switch to more reliable products that promote reuse, upgrading, and re-engineering would reduce the amount of waste. The issue of packaging is a growing problem and, on average, the average European citizen is responsible for approximately 180 kg of packaging waste per year. The aim is to drastically reduce the unnecessary and excessive use of packaging and at the same time to upgrade its design to promote reuse and recycling

## 2.2 Reduce raw material dependence

The need to find raw materials increases as the population of the earth increases. However, the availability of necessary raw materials is limited. Finite supplies also mean that EU countries are interdependent regarding the supply of raw materials. According to Eurostat, the EU imports about half of the raw materials it needs to consume. The value of trade (imports and exports) of raw materials between the EU and the rest of the world has almost tripled since 2002, but exports tend to grow faster than imports.

However, the EU still imports more raw materials than it exports. The above tactic resulted in 2021, leading to a trade deficit of 35.5 billion euros. Recycling raw materials mitigates supply-related risks such as price volatility, availability, and import dependency. This concerns particularly critical raw materials, which are necessary for the production of technologies that are important for achieving climate goals, such as batteries and electric motors.

## 2.3 Create jobs and save consumers money

Moving towards a more circular economy could help competitiveness, increase innovative ideas, improve economic growth, and create new jobs as a result (700,000 jobs in the EU alone by 2030). The development of materials and products for circular use would also boost innovation in various sectors of the economy. The buying public will have the opportunity to buy more innovative and long-lasting products that contribute to a better quality of life and to saving money.

## 3. What is the EU doing to become a circular economy?

In March 2020, the European Commission published its action plan for the development of the circular economy, which aims to launch a more sustainable product design, reduce waste and strengthen the purchasing public, giving as an example the choice of repair. It also emphasizes the significant strengthening of critical resources such as electronics and ICT, plastics, textiles, and construction. In February 2021, Parliament voted positively for a new action plan on the circular economy, calling for additional measures to achieve a carbon-neutral, environmentally sustainable, zero-toxic circular economy by 2050. At the same time, it will include stricter recycling rules and an implementation plan for the 2030 material use and consumption targets.

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In March 2022, the Commission published the first set of measures to accelerate the transition. The solutions are based on strengthening sustainable products, encouraging the buying public to go green, revising existing legislation on products intended for building materials, and developing a strategic plan for more sustainable solutions in textile products as well. In November 2022, the Commission turned to new EU-wide rules on packaging. The purpose is to reduce waste related to packaging and the development of the design as far as packaging is concerned to a circular economy as part of the Circular Economy Action Plan. As an example, we can cite prominent labeling to promote reuse and recycling; and there is a need to change to biodegradable and compostable plastics. [2]

### 4. EU strategy for sustainable and circular textiles

Textile products exist as fabrics in our everyday life. They are used in clothing, household use, and furniture, as well as in products such as medical and protective equipment, buildings, and vehicles. Textile materials contribute to the functionality and performance of the products, at the same time they are chosen for reasons of beauty and comfort. The production and consumer demand for textile products is increasing and at the same time their impact on the environment. They affect water and energy consumption and have consequences for the environment.

Worldwide textile production almost doubled between 2000 and 2015, specifically apparel and footwear consumption are expected to increase by 63% by 2030, from 62 million tons today to 102 million tons in 2030. In the EU, the consumption needs of textiles, of which the largest percentage is imported, is the main reason for the fourth-highest negative impact on the environment and climate change and the third-highest for water and land consumption in terms of the global cycle life.

Considering that clothes make up the largest part of textile consumption in the EU (81%), the shift to using clothes for shorter periods before discarding them promotes highly unsustainable patterns of overproduction and overconsumption. Such models, also referred to as fast fashion, encourage the buying public to continue to buy lower-quality, lower-cost clothing that is quickly produced in response to new trends.

Although from 1996 to 2018 the cost of clothing in the EU fell by more than 30% relative to inflation, average household spending on clothing increased, showing that such unsustainable standards have not helped consumers fully benefit from cost-saving opportunities.

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Furthermore, the escalating demand for textile products reinforces the inefficient use of non-renewable resources, including the development of synthetic fibers from fossil fuels.

These negative effects stem from a linear model characterized by low rates of use, reuse, repair, and fiber-to-fiber textile material recycling, as which typically does not place quality, durability, and recyclability as primary goals for clothing design and creation. The dispersal of microplastics from synthetic fabrics and shoes throughout their life cycle further adds to the environmental impact of the industry

The complex and idiosyncratic global textile value chain faces several societal challenges, for example, the need to reduce production costs to meet consumer needs for affordable products. Child labor in the garment industry is a serious problem of concern. Women make up a large percentage of the low-paid and inexperienced workforce in the textile industry, and upgrading the sustainability of the supply chain also has an important reference to gender equality.

With its focus on social and environmental sustainability, the EU wishes to support global value chains, thereby contributing to the Sustainable Development Goals worldwide

The textile and clothing sector is an important economic factor for the European Union and has the potential to play a dominant role in the circular economy. It consists of 160,000 companies employing 1.5 million people, with a turnover of 162 billion euros in 2019. COVID-19 has hurt the sector. In 2020, the scope of EU work contracted by 9.2% in textiles and by 18.1% in clothing compared to 2019.

Also, during the pandemic, the textile industry coped with efficiency and ingenuity, as it was faced with large production lines in a very short time, managing to supply masks and additional protective equipment that was necessary but until that moment did not exist in surplus. With Russia's violent and unprovoked attack on Ukraine, energy has been greatly affected resulting in increased energy prices, disrupted security of supply of raw materials, and negative impacts on textile exports, which to me highlights the areas in which the global supply chain needs significant improvements.

The textile sector in the EU following reduced demand needs to be strengthened. The disruption of value chains with price increases in the last two years has brought companies to face to face with various challenges affecting both their day-to-day and short-term operations and survival there. the causes are turbulence from intense competition from around the world and future volatility. Consisting mainly of small and medium-sized enterprises (SMEs), it needs

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to strengthen its power, mainly in terms of the supply of energy and raw materials; turn to new markets for more sustainable products. Looking for a talented and skilled workforce would also help. Europe has over the years been the source of innovative brands, creativity, know-how, and quality textile products.

These obstacles and opportunities need more systemic solutions in line with the need of the European Green Deal to make development sustainable, climate neutral, energy and resource efficient, and without disrupting the environment, based exclusively on the circular economy. The Circular Economy Action Plan 2020 and the 2021 update of the EU Industrial Strategy identify textiles as primary elements in the product value chain with a critical need and strong potential for the transition to sustainable and circular production, consumption, and business models.

Companies, the buying public, and public authorities in the EU are already focusing on increasing the sustainability and circularity of this field, but the transition is taking place at a slow pace, with the result that the environmental footprint of the sector remains high and we also have impacts on the climate.

Taking advantage of the progress made, ensuring the green and digital transition, societal challenges, and ensuring compliance with sustainability needs, the EU has the potential to be a global innovator in sustainable and circular textile value chains, new technological solutions, and innovative business models.

This will help reduce the environmental footprint of textiles during their lifetime, increase the efficiency and competitiveness of the industry, improve working conditions in line with applicable international labor standards, and at the same time ensure that the value of textiles is maintained. products in the economy for a longer period, without dependencies on virgin raw materials.

This Strategy for Sustainable and Circular Textiles aims to create a coherent framework and philosophy for change in the textile sector whereby: By 2030 textile products available on the EU market have a longer lifespan and are considered recyclable as they are largely created from recycled fibers, without hazardous substances. Their production is done with respect for human rights and the environment.

The buying public gains through high-quality affordable textiles, fast fashion becomes a reduced strain, and cost-effective reuse and repair services are widely available. In a competitive, strong, and innovative textile industry, creators are responsible for their products

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throughout their life in the value chain, even when they become waste. The circular textile ecosystem flourishes, thanks to the sufficient possibilities for innovative fiber-to-fiber recycling, while the incineration and landfilling of textiles are significantly reduced [3].

### References

[1] [https://www.esdn.eu/fileadmin/ESDN\\_Reports/ESDN\\_Report\\_2\\_2020.pdf](https://www.esdn.eu/fileadmin/ESDN_Reports/ESDN_Report_2_2020.pdf)

[2] <https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits>

[3] <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52022DC0141>

### Partnership



**Project coordinator**

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