TOWARDS A GREENER FUTURE: A REVIEW OF EU'S CIRCULAR ECONOMY ACTION PLANS

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Abstract: The Circular Economy is a crucial global objective that requires increased action at both the European Union (EU) and global levels, particularly in the context of environmental policy and climate change. The European Commission's adoption of the European Green Deal in December 2019 further highlights the importance of this issue. The first Circular Economy Action Plan (CEAP) was adopted by the European Commission in December 2015 and aimed to reduce waste and increase the lifespan of products and materials, thereby facilitating the transition of Europeans to a circular economy. After three years of implementation, the European Commission updated the CEAP in March 2020 as part of its support for the European Green Deal. The new plan outlines a forward-looking agenda for a cleaner and more competitive Europe. The CEAP is a roadmap aimed at transforming the economy of Europe into a more sustainable and circular model, recently reflected in a package of legislative proposals put forth by the European Commission in March 2022. It plays a vital role in decoupling economic growth from excessive natural resource consumption. Hence, it is essential to evaluate the the experiences of the EU in executing both iterations of the CEAP to gain insight into the challenges and prospects of fostering a circular economy.

Keywords: Circular Economy; Circular Economy Action Plan (CEAP); EU environmental Policy; sustainable development.

1. Introduction

The challenge of managing finite resources is one of the defining issues of the twenty-first century, as it leads to significant impacts on the environment and

climate.[1] Reducing such impacts while improving resource productivity and meeting climate targets requires a shift towards a more circular and sustainable system.

The circular economy represents a paradigm shift in economic and resource management practices, moving away from traditional linear systems of resource depletion.[2] By prioritizing recycling, reusing, and repairing materials and products, it offers a solution to pressing global environmental issues, such as climate change and marine plastic pollution. The transformation towards a circular economy not only addresses these challenges but also stimulates innovation and fosters new business opportunities.[3] This transition aligns with and supports the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs)[4], as well as key international agreements such as the Paris Agreement[5], the Convention on Biological Diversity[6], and the United Nations Convention to Combat Desertification[7-8].

Putting the circular economy into action has been prevalent not only in the European Union (EU[9]) countries,[10] but in other countries of the world as

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1 As Behrens concluded in CEPS Policy Brief, "there is a direct physical relationship between the quantity of raw materials used in industrial processes and greenhouse gas (GHG) emissions, GHG emissions are emitted in all stages of the product lifecycle (including extraction, production, consumption and waste management)." See: Arno Behrens, Time to connect the dots: What is the link between climate change policy and the circular economy?, *Centre for European Policy Studies*, 337 (2016).

2 Almut Reichel, Mieke De Schoenmakere, et al, Circular Economy in Europe: Developing the Knowledge Base, *European Environment Agency Report*, 2 (2016), p. 9.

3 Zinaida Fadeeva and Rene Van Berkel, Unlocking Circular Economy for Prevention of Marine Plastic Pollution: An Exploration of G20 Policy and Initiatives, *Journal of environmental management*, No. 277, 2021, p. 111457.

4 In particular SDG 8.4 on resource efficiency and decoupling; SDG 12.2 on sustainable management and efficient use of natural resources; SDG 15.3 on land-degradation neutrality; and SDG 15.5 on halting biodiversity loss.

5 Paris Agreement to the United Nations Framework Convention on Climate Change, 12 December 2015, T.I.A.S. No. 16-1104.

6 United Nations Convention on Biological Diversity, 5 June 1992, 1760 U.N.T.S. 69.

7 United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, 17 June 1994, 33 ILM 1328 (1994).

8 Commission Staff Working Document on *Leading The Way to a Global Circular Economy*: *State of Play and Outlook*, SWD(2020) 100 final, Brussels, 11 March 2020.

9 For simplicity, EU is used to denote the European Union and its precursors, the European Economic Community and the European Community.

10 The Netherlands, France, Italy, Germany, Luxembourg, Belgium, Portugal and Spain are the leading EU countries in circular economy. See: "Which Countries Are Leading the Change in Circular Economy?," Construcía, 2020/09/30, Spain.

well[11]. In most cases, the EU has been at the forefront of international efforts to implement circular economy action plans to curb climate change.[12] The EU continues to be a pioneer in the global efforts to combat climate change, as evidenced by its various climate initiatives and its nationally determined contribution (NDC) to reduce GHG emissions.[13] The EU also demonstrates unparalleled leadership in promoting the transition to a circular economy, which is integrated into its policy framework, particularly with regard to waste management. In recent times, the EU has made remarkable strides in advancing the circular economy through both its policy framework and practical implementation.

2. EU Progress towards a Circular Economy

This section examines the advancements the European Union has made towards a circular economy. It outlines the policy framework of the EU and its overarching policies, and concludes with an assessment of the governance practices in waste management.

2.1. Legal foundations for resource efficiency

Environmental protection is an important priority of EU law. The first formal recognition of the importance of environmental protection in the European Community treaties was introduced through the Single European Act[14] and further

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11 There are many countries around the Pacific Rim contributing much efforts to the transformation of green economy, such as New Zealand passed the Resource Management Act as its principal legislation for environmental management in 1991, Japan implemented the Basic Law for Establishing the Recycling-based Society to start the environmental governance in 2001, China issued Circular Economy Promotion Law which makes the circular economy a domestic political priority in 2008, the United States enacted the American Recovery and Reinvestment Act in 2009 to promote energy efficiency through capital investment and reduce energy consumption in multiple economic sectors, and, in Australia, Victoria has ten year plan to boost recycling and other actions towards a waste free future.

12 The new Circular Economy Action Plan 'For a cleaner and more competitive Europe' confirms that the EU will continue to lead the way to a circular economy at the global level.

13 In December 2020, the EU submitted its updated NDC targets to reduce emissions by at least 55% by 2030 from 1990 levels. Its initial NDC under the Paris Agreement was the commitment to reduce greenhouse gas emissions by at least 40% by 2030 compared to 1990, under its wider 2030 climate and energy framework. See: Beatriz Pérez de las Heras, European Climate Law (s): Assessing the Legal Path to Climate Neutrality, *Romanian Journal of European Affairs*, 21.2 (2021), pp. 19-32.

14 See Articles 130r to130t of the Single European Act, *OJ* L169, 29 June 1987.

refined in the Maastricht Treaty[15] and the Amsterdam Treaty[16].[17] The Lisbon Treaty[18] elevated environmental protection to a key goal of the EU, along with sustainable development and principles related to economic growth and external action.[19] These legal provisions complement EU environmental policy initiatives in areas such as waste management and energy efficiency.

The TFEU outlines the guiding principles and objectives of environmental protection policies, as embodied in Articles 191 to 193.[20] Article 191 outlines the commitment of the EU to ensuring the prudent and rational use of resources, addressing climate change, and operating under the precautionary principle, the principle of preventive action, and the polluter pays principle. These articles provide the legal framework for the actions of the EU in promoting sustainable use of resources and the circular economy.

2.2. The action plan of the EU for a circular economy

The EU is the birthplace of circular economy legislation, with prescribing policies and legislative requirements for its member states in the form of European Commission Directives, hence ensuring that the EU member states played a significant role in driving innovation in the early stages of the circular economy.[21] In 1975, the EU enacted its first waste management framework directive,[22] which was largely ineffective. It was amended twice in 1991.[23] In 1994, Germany passed

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15 See Articles 174 to 176 of the Treaty of Maastricht, *OJ* C191, 29 July 1992.

16 See Article 2 and Article 6 of the Treaty of Amsterdam, *OJ* C 340, 10 November 1997.

17 Leonardo Massai, *European Climate and Clean Energy Law and Policy*, Earthscan, London, 2012, pp. 1-7.

18 The Lisbon Treaty is in fact a set of amendments to the two main treaties governing the EU: The Treaty on European Union (TEU) and the Treaty establishing the European Community (TEC) which was renamed the Treaty on the Functioning of the European Union (TFEU).

19 Article 3, paragraph 3 of the TEU refers to sustainable development as one of the goals of the EU, paragraph 5 refers to the EU's role in achieving sustainable development on the earth. Article 21(2)d and f of the TEU refers to sustainable development is also related to the foreign policy and external action of the EU.

20 Consolidated version of the Treaty on the Functioning of the European Union, *OJ* C 326, 26 October 2012, pp. 86-88.

21 G. Gordon Davis and Jessica Anne Hall, Circular Economy Legislation: The International Experience, in *Paper for the environment and natural resources protection Committee of the National People's congress*, May 2006.

22 Council Directive 75/442/EEC of 15 July 1975 on *Waste*, Council of the European Communities, *OJ* L 194, 25 July 1975.

23 The 1991 amendments firmly established the "Reduce, Reuse, Recycle" priorities for the EU, another two more amendments were promulgated in 1996. Then, the 1975 directive on waste

the Act for Promoting Closed Substance Cycle Waste Management and Ensuring Environmentally Compatible Waste Disposal,[24] which established the foundation of "closed loop recycling"[25]. In 2008, the EU launched the Waste Framework Directive (Directive 2008/98/EC)[26] as a comprehensive policy framework for waste management. This directive defines key waste-related terms and lays down measures to protect the environment through the reduction of waste, using a five-step "waste hierarchy"[27]. In addition, there are several EU directives addressing specific materials and products, such as packaging, end-of-life vehicles, waste electrical and electronic equipment, and batteries and accumulators.[28] Prior to 2010, the legislation of the EU and the actions in the area of circular economy primarily focused on waste management and environmental impact reduction, rather than on economic development.

In response to the global financial crisis of 2008, the EU proposed a shift from a linear economy model to a circular economy model to drive economic transformation and development while continuously improving the resource efficiency.[29] To support this initiative, the EU established the Ecodesign

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management and its four amendments constitute the framework for the EU member states to enact legislation on waste management. Pursuant to this framework, EU member states must enact legislation to prevent "uncontrolled discarding, discharge and disposal of waste" and to promote reducing, reusing and recycling in order, instead of over disposal.

24 This Act implements Council Directive 91/156/EEC of 18 March 1991 for amendment of Directive 75/442/EEC on waste (EC Official Journal no. L 78 p. 32) and of Council Directive 94/31/EC of 27 June 1994 for amendment of Directive 91/689/EEC on hazardous waste (EC Official Journal no. L 168 p. 28).

25 The 1994 Act brought the "closing loop recycling" throughout the supply chain, stipulated the extended producer responsibility system which is responsible for the entire life cycle of the product, with the aim to force producers to consider how to decompose and reuse their products during the product design.

26 Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on *waste and repealing certain Directives* (Directive 2008/98/EC), *OJ* L 312, 22 November 2008, pp. 3-30.

27 The waste hierarchy established a priority order from prevention, preparation for reuse, recycling and energy recovery through to disposal.

28 Namely, Directive 94/62/EC on packaging and packaging waste, Directive 2000/53/EC on end-of-life vehicles, Directive 2012/19/EC on waste electrical and electronic equipment and Directive 2006/66 on batteries and accumulators. The extended producer responsibility is also enshrined in these above four sectoral waste directives.

29 Igor Taranic, Arno Behrens, and Corrado Topi, Understanding the Circular Economy in Europe, from Resource Efficiency to Sharing Platforms: The CEPS Framework, *Centre for European Policy Studies*, 143 (2016).

Directive[30] in 2009, providing a consistent EU-wide framework for improving the environmental performance of products through eco-design. The Waste Framework Directives and the Ecodesign Directives are critical components of the policy framework for a resource-efficient circular economy in the EU. In 2010, the EU released the Europe 2020 Strategy,[31] which made resource efficiency improvement a central component of the strategy f the EU for sustainable economic development. Since then, the EU has linked its circular economy efforts to the promotion of economic growth.

In 2011, the Roadmap to a Resource Efficient Europe was launched with the objective of enhancing resource productivity and breaking the link between economic growth and resource utilization and its negative impact on the environment.[32] In 2013, the EU's 7th Environment Action Programme[33] further enhanced this vision, with a focus on transitioning from a linear economy to a circular one. To achieve this, the EU launched its first Circular Economy Action Plan (CEAP)[34] in 2015, which aimed to improve resource efficiency and waste management. This marked the beginning of a comprehensive effort to promote the circular economy and transform the economic development model of the EU towards sustainable growth, increased competitiveness, and job creation. To support this transition, the EU developed a package of measures in 2015, including legislative proposals on waste, recycling, and reuse. In 2017, the European Commission introduced additional measures, including the establishment of a circular economy financial support platform and rules on hazardous substances

30 Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 *establishing a framework for the setting of ecodesign requirements for energy-related products*, European Parliament, Council of the European Union, *OJ* L 285/10, 31 October 2009.

31 The EU adopted the Europe 2020 Strategy in 2010, aims at supporting a smarter, inclusive and more sustainable and economy for the EU over a period of 10 years.

32 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on *Roadmap to a Resource Efficient Europe*, COM(2011) 571 final, Brussels, 20 September 2011.

33 This programme is intended to help guide EU action on the environment and climate change up to and beyond 2020 based on the following vision: "In 2050, we live well, within the planet's ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society's resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society."

34 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on *Closing the loop – An EU action plan for the Circular Economy*, COM(2015) 614 final, Brussels, 02 December 2015.

in electrical and electronic equipment.[35] In 2018, EU Strategy for Plastics in the Circular Economy[36] was introduced to alleviate the over-consumption of plastics and its associated environmental problems. In May 2018, the EU made four legislative proposals on waste management to reduce the waste volume in landfills, promote recycling, and encourage citizen responsibility in waste management. In December 2019, the European Green Deal[37] was launched, with the core strategic goal of achieving climate-neutrality by 2050 and decoupling economic growth from resource use. This was followed by the updated CEAP in March 2020,[38] which focuses on the entire life cycle of products and outlines a path towards a cleaner and more competitive Europe.[39]

The analysis of the progress of the European Union in transitioning to a circular economy demonstrates the presence of a highly advanced policy framework, ranking among the most developed in the world in terms of environmental protection. This progress is evident in the comprehensive action plans outlined above that chart the journey of the EU towards a circular economy. This transition can be divided into two distinct phases, marked by the Europe 2020 Strategy. The first phase, spanning from 1975 to 2010, focused on waste management, while the second phase, from 2010 to 2021, saw a redefinition of the circular economy and a shift from a linear model to a closed-loop system.

2.3. EU waste management governance strategies

The above analysis of the progress of the EU in the circular economy also demonstrates a significant shift in its waste management strategy. Previously focused on end-of-pipe treatment and pollution prevention, the EU now views waste as a resource and aims to promote a circular economy where natural resources are managed sustainably and nothing goes to waste.[40] As waste

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35 Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on *the implementation of the Circular Economy Action Plan*, COM(2017) 33 final, Brussels, 26 January 2017.

36 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on *A European Strategy for Plastics in a Circular Economy*, COM(2018) 28 final, Brussels, 16 January 2018.

37 Communication from the Commission on *the European Green Deal*, COM(2019) 640 final, Brussels, 11 December 2019.

38 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on *A new Circular Economy Action Plan for a cleaner and more competitive Europe*, COM(2020)98 final, Brussels, 11 March 2020.

39 *Ibid*., COM(2020)98 final.

40 Press Release, *Changing How We Produce and Consume*: *New Circular Economy Action Plan Shows the Way to A Climate-Neutral*, *Competitive Economy of Empowered Consumers*, European

management plays a central role in the circular economy, it is essential to review the EU policy framework and the national policy framework for waste management, using Germany as a case study. This will provide valuable insights into the legal, policy and regulatory frameworks that serve as reference points for states that have already taken steps towards a circular economy transition, as well as for those that have yet to do so but plan to in the future.

The Waste Framework Directive[41] establishes the guiding principles and legal foundation for waste management in the EU. Key provisions of the Directive include the principles of the waste hierarchy, the polluter pays principle and extended producer responsibility. These provisions have been incorporated into national law by EU Member States.

At the EU governance level, the Directorate-General for Climate Action (DG CLIMA) leads the efforts of the European Commission to combat climate change both within the EU and globally.[42] This policy-making DG is responsible for developing and facilitating the implementation of cost-effective policies and environmental legislation, as well as monitoring the enforcement of EU climate legislation within the EU.[43] The DG CLIMA releases a strategic plan every five years to outline the overarching environmental policy direction, objectives, and corresponding evaluation indicators. The 2016-2020 Strategic Plan aligns with the 7th Environment Action Programme, aimed at fostering the transformation towards a circular economy society by changing the production and consumption patterns of EU member states.[44] The 2020-2024 Strategic Plan sets the ambitious goal of becoming the first climate-neutral and climate resilient continent by 2050.[45]

In response to the DG CLIMA's strategic plan, the Member States of the EU have also formulated policy guidelines and identified priority actions at the national level. For instance, the German Resource Efficiency Programme (ProgRess)[46] prioritizes closed-loop management and the recycling and reuse

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Commission, 11 March 2020.

41 Directive 2008/98/EC.

42 DG CLIMA was set up in 2010, climate change having previously been handled by the Commission's DG Environment.

43 DG Climate Action Ares(2016)1970101, Strategic plan of the Directorate-General for Climate Action, setting out the department's vision for 2016-2020 (Strategic Plans 2016-2020), European Union, Directorate-General for Climate Action, 26 April 2016, p. 3.

44 *Ibid*., Strategic Plans 2016-2020, pp. 3-6.

45 DG Climate Action Ares(2020)4936136, Strategic Plan of the Directorate-General for Climate Action, setting out the department's vision for 2020-2024 (Strategic Plans 2020-2024), European Union, Directorate-General for Climate Action, 21 September 2020, p. 4.

46 German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and

of raw materials. The Netherlands has launched a government-wide programme for a circular economy, incorporating the Waste to Resources (Van Afval Naar Grondstof-VANG) and Biobased Economy initiatives, which respectively focus on the sustainable use of raw materials and the transition from fossil-based to biomass-based raw materials.[47] Additionally, Finland has made substantial revisions to its waste management plan, focusing on the transition from a recycling-oriented society to a circular economy society.[48]

At the national level, Germany serves as a prime example of effective waste management regulation. Its framework influences not only the waste management policies of the EU but also those of other Member States.[49] Firstly, the German legal framework on waste management encompasses European laws, the federal Waste Management Act (KrWG),[50] state law and municipal waste disposal law.[51] Secondly, the KrWG imposes stricter measures on waste management while still being consistent with the Waste Framework Directive (Directive 2008/98/EC). It categorizes waste into two types: waste for recycling or energy recovery, which is the responsibility of the waste owner or producer, and waste of other origins to be disposed of, which is managed by public waste companies.[52] Thirdly, the German waste management system adopts a multi-level governance approach, which encompasses both vertical and horizontal governance. Vertical governance is reflected in the allocation of overall responsibility for waste management and circular economy issues to the environmental department by both federal and local governments. Horizontal governance is established through communication mechanisms at various levels to ensure that governance policies at all levels are in line with national legal norms and policy frameworks (as illustrated in Fig.

Consumer Protection, *The German Resource Efficiency Programme II*, 2020.

47 Netherlands Ministry of Infrastructure and the Environment and the Ministry of Economic Affairs, also on behalf of the Ministry of Foreign Affairs and the Ministry of the Interior and Kingdom Relations, *A Circular Economy in the Netherlands by 2050*, 2016.

48 Commission Staff Working Document on *the EU Environmental Implementation Review 2019 – Country Report - FINLAND*, SWD(2019) 136 final, Brussels, 4 April 2019.

49 As mentioned in section 2.2-the summary of EU action plan for a circular economy, the Germany 1994 Act (KrWG) laid the foundation of the "closed loop recycling" for future legislation on waste management. Another example is the EU issued new directives in 1991, mainly in response to the ambitious packaging waste program launched by Germany in the same year.

50 German Act Reorganising the Law on *Closed Cycle Management and Waste* (Gesetz zur Neuordnung des Kreislaufwirtschafts- und Abfallrechts) of 24 February 2012 (now called German Circular Economy Act (KrWG)).

51 Deutsche Gesellschaft für and Internationale Zusammenarbeit (GIZ) GmbH, *Germany's Waste Management Policy Development – A Focus on Municipal Solid Waste*, 2019, p. 9.

52 German Circular Economy Act (KrWG), pp. 4-10.

1). In conclusion, the multi-level governance mode adopted by Germany in its waste management system not only leads to effective and organized waste and renewable resource management but also encourages communication and sharing of experiences among government levels. This approach can serve as a valuable reference for other nations seeking an efficient governance mode for waste management.

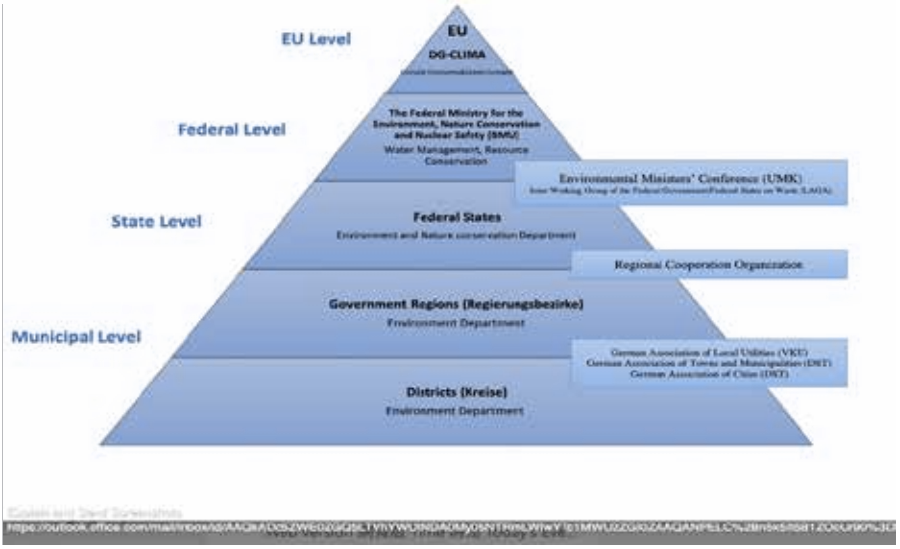

Fig. 1. The German multi-level governance mode on waste management

3. EU's Circular Economy Action Plans

The Circular Economy Action Plans (CEAPs) of the EU comprise a comprehensive strategy aimed at promoting sustainable economic growth and resource efficiency. The EU has implemented its first CEAP, and now has a new action plan with key measures that seek to reduce waste, increase recycling, and encourage the use of renewable energy. This section provides an overview of the implementation of the first CEAP of the EU,[53] highlights the key features of the new CEAP[54], and shares practical experiences gained by the EU.

53 Communication COM(2015) 614 final.

54 Communication COM(2020) 98 final.

3.1. The implementation of the initial circular economy action plan

The initial CEAP of the EU has shown promising results towards reshaping the European economy to be carbon-neutral, resource-efficient and competitive. This CEAP comprised a range of actions to achieve this, focusing on circular design and production processes, empowering consumers, turning waste into resources, closing loops of recovered materials, taking a systemic approach to plastics, encouraging innovation and investments, and promoting strong stakeholder engagement.[55]

This plan emphasized the importance of intelligent design in ensuring product cyclicality,[56] as well as active citizen engagement in changing consumption patterns.[57] The EU revised its waste management framework[58] and launched the Raw Materials Information System to monitor recycling, as well as proposed standardized processes to develop the secondary raw material market.[59] The EU Strategy for Plastics in a Circular Economy[60] sets a target for all plastic packaging to be reusable or recyclable by 2030 and launched a voluntary commitment campaign to promote the recycled plastics market. The EU dedicated a significant amount of public funding to accelerate the transition,[61] and stakeholder engagement played a significant role in the success of the plan. This action plan has sparked national discussions on circular economy, and the majority of EU Member States have either adopted or are in the process of adopting national strategies for a circular economy.[62]

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55 Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on *the implementation of the Circular Economy Action Plan*, COM(2019) 190 final, Brussels, 4 March 2019.

56 With the implementation of the Ecodesign Working Plan 2016-2019, the European Commission has further promoted the circular design of products together with energy efficiency goals, including taking specific measures for the eco-design and energy efficiency labeling system of a variety of products, such as the availability of product spare parts, ease of maintenance, and facilitating end-of-life treatment. Communication from the Commission on *Ecodesign Working Plan 2016-2019*, COM(2016) 773 final, Brussels, 30 November 2016.

57 Communication COM(2019) 190 final.

58 *OJ* L150, 14 June 2018, p. 93, 100, 109, 141. Directive 2008/98/EC on *waste*, Directive 1999/31/EC on *the landfill of waste*, Directive 94/62/EC on *packaging and packaging waste*, Directive 2000/53/EC on *end-of life vehicles*, Directive 2006/66/EC on *batteries and accumulators and waste batteries and accumulators*, Directive 2012/19/EU on *waste electrical and electronic equipment*.

59 Communication COM(2019) 190 final, p. 3.

60 Communication COM(2018) 28 final.

61 Communication COM(2019) 190 final, pp. 8-9.

62 *Ibid*., pp. 9-10.

3.2. Key measures of the new circular economy action plan

The new CEAP launched in 2020 includes several key measures to create a cleaner and more competitive Europe.[63] The new plan aims to establish a sustainable product policy framework by expanding the Ecodesign Directive to cover electronics, textiles, furniture, and other products with high environmental impact.[64] The plan also focuses on key product value chains, such as electronics, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water, and nutrients.[65] Additionally, the plan proposes measures to enhance waste policy, create circularity in a toxic-free environment, and ensure circularity benefits people, regions, and cities.[66] The plan also includes crosscutting actions to strengthen the synergy between circular economy and GHG emissions, to apply economic and financial means, and to promote the transition through research, innovation, and digitalisation.[67] Lastly, the Commission aims to monitor the circular economy progress by updating the monitoring framework and relying on European statistical data.[68] The plan also seeks to lead global efforts on the circular economy.[69]

3.3. Conclusion

The 2020 CEAP represents a significant improvement over its predecessor. This new plan boasts a more comprehensive and robust framework, featuring several prominent and strong initiatives in key areas. By leveraging the expertise and collaboration of economic actors, consumers, citizens, and civil society organizations, the new plan presents a future-oriented agenda for a cleaner and more competitive Europe.[70]

The practical experiences of the EU with the circular economy action plan provide valuable insights for policymakers seeking to promote the transition to a circular economy. These experiences can be analyzed from three dimensions: macro, meso, and micro. At the macro level, the circular economy policies of the EU not only focus on resource efficiency but also prioritize enhancing corporate competitiveness, creating job opportunities, and boosting the economy. Effective

63 Communication COM(2020) 98 final.

64 *Ibid*. pp. 3-6.

65 *Ibid*. pp. 6-12.

66 *Ibid*., pp. 12-16.

67 *Ibid*., pp. 16-17.

68 *Ibid*., pp. 18-19.

69 *Ibid*., p. 18.

70 *Ibid*., p. 2.

waste management requires clear reduction targets and measures to increase recycling rates and reduce landfill volumes. The concept of waste should be simplified, and financial means adopted for effective management. At the meso level, the new CEAP of the EU places a greater emphasis on supporting small and medium-sized enterprises (SMEs) in the industry and consumption sectors. This marks a shift from solely relying on large enterprises to demonstrate circular economy practices, which could hinder market and business opportunities. Additionally, the new plan establishes a service system that supports complete maintenance, sharing, and recycling, further strengthening consumer protection. At the micro level, the new action plan empowers consumers by providing them with sufficient information on products to make informed choices. A service system that supports complete maintenance, sharing, and recycling is also necessary. Ecodesign for products is critical since the circular economy begins at the start of the product life cycle. Producers must implement specific measures to improve repairability, upgradability, durability, and recyclability, and establish design guidelines. Encouraging enterprises to develop new business models through incentivizing maintenance and reuse services, and establishing a digital consumer platform to realize product sharing and other environmentally friendly practices is another essential aspect.

4. The road ahead: towards the climate-neutrality goal

The transition towards a circular economy in the EU is now supported by a growing number of policies and initiatives, including the European Green Deal,[71] the European Climate Law,[72] and a package of legislative measures adopted by the Commission. However, to achieve the goal of climate-neutrality for Europe by 2050, it is essential to overcome the barriers and challenges that exist at multiple levels.

At a global level, the new circular economy action plan of the EU responds to the worldwide bans on waste imports by countries such as China, Malaysia, Thailand, and Vietnam. The plan aims to prevent the EU from exporting its waste challenges to other countries and to address climate change as a transboundary challenge that requires collaboration between countries. To achieve a truly circular global economy, the EU proposes to build a global circular economy alliance and

71 Communication COM(2019) 640 final.

72 Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law'), *OJ* L 243, 9 July 2021.

work closely with other states.

However, at the EU level, the implementation of a circular economy still faces various political, social, economic, and technological barriers.[73] These include a lack of awareness and technological support for circular economy solutions among enterprises, low demand for sustainable products and services, and a need for incentive mechanisms to promote behavioral change. The EU needs to expand the transition to all industries and provide clearer directions and areas of action plans.

The transition of the EU to a circular economy also requires Member States to establish preventive measures to incorporate related Directives into national law, establish policy guidelines and action priorities, and encourage waste minimization and the use of reusable packaging. However, progress towards a circular economy varies among Member States, with only a few countries establishing circular economy strategies, such as Germany, the Netherlands, and Finland.[74]

The EU is at the forefront of promoting the transition to a circular economy. However, the successful implementation of this model is hindered by numerous obstacles that must be overcome to achieve the important goal of separating natural resource consumption and environmental impacts from economic growth. To this end, the CEAP serves as a roadmap and is being steadily put into action through the introduction of legislative and non-legislative initiatives. It is anticipated that the CEAP will remain an integral part of the effort to decouple economic growth from the unsustainable use of natural resources.

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