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Advancing Circular Economy: Czech perspective

Abstract

This article provides a comprehensive overview of the transition to a circular economy, focusing on the European Union’s (EU) efforts and the Czech Republic’s stance and actions. It elaborates on the urgent need to shift from a linear economy, which burdens Earth’s resources and leads to substantial waste, to a more sustainable circular economy by 2050. The circular economy paradigm is seen as a fundamental shift in managing waste and resource use towards maintaining the value of products and materials for as long as possible and minimising waste generation. The article outlines the EU’s initiatives, policies, and legislation to foster this transition, emphasising the critical role of member states in implementing specific measures. Several EU policies, like the Green Deal and the New Circular Economy Action Plan, aim to transform the economy from linear to circular, covering various waste streams and sectors. Particular attention is given to the Czech Republic’s position and efforts. It delves into Czech waste legislation, policies related to the circular economy, and the nation’s strategic documents like the State Environmental Policy 2030 and the Strategic Framework of the Circular Economy of the Czech Republic 2040; these aim to improve waste management, enhance material supply security, boost business competitiveness, and reduce fossil fuel consumption. The article also discusses the challenges and public opinion in the Czech Republic regarding environmental protection and the circular economy. Despite progress, factors such as inadequate use of economic instruments and public reluctance to pay more for sustainable products hinder a faster transition. Furthermore, the article reviews specific legal instruments, economic tools, and sectoral legislative acts contributing to circularity in the Czech Republic. In conclusion, while the Czech Republic and the EU have made strides towards a circular economy, the journey is ongoing. The transition promises long-term benefits like self-sufficiency, reduced greenhouse gases, and new job opportunities. The EU’s role is crucial in this transition, as it sets legislative and policy frameworks that guide member states towards circularity. This article reflects the complexities and

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multifaceted nature of transitioning to a circular economy, highlighting the need for continued efforts, policy alignment, and societal support.

**Keywords**: Circular Economy, European Union, Czech Republic, Waste Management, Sustainability, Environmental Policy

### 1. Introduction

Waste generation is fundamentally linked with modern society and a consumer-driven economy. On average, each European produces around five tonnes of waste annually, of which only 38% is recycled.\(^3\) Our prevalent lifestyle exerts a significant burden on Earth’s resources. The dominant linear economy – where products are manufactured, used, and then discarded – detrimentally impacts the environment, particularly through landfill accumulation. It also leaves the European Union (EU) more vulnerable to third states, heightens dependence on external sources, and markedly influences the Union’s economy. In response to this challenge, the EU is striving to adopt a novel perspective on product usage and lifecycle that envisions transitioning to a circular economy by the year 2050.\(^4\)

The shift to a circular economy is often described as a paradigm shift in how we perceive waste generation and resource utilisation. Our current linear economy faces a significant barrier in the form of planetary boundaries\(^5\) and limited natural resources. Therefore, championing and accelerating this paradigm shift is in line with our shared best interests.

However, it is important to note that conceptually, the circular economy is not self-sustaining or all-powerful; it requires active participation from society at large. Some scholars thus suggest a more cautious or conservative approach to the circular economy.\(^6\)

In theory, for newly introduced legislation to be effective, it must align with societal demands for regulation of certain topics or issues. While this might work in individual countries, within the EU – a collection of diverse states – this poses considerable challenges due to their varied economic, societal, and cultural backgrounds. Nonetheless, EU institutions could use Eurobarometer surveys to understand and address societal needs. Notably, recent environmental surveys related to the circular economy show increasing concern about waste accumulation. These surveys indicate that 46% of respondents view the growing amount of waste as a significant environmental issue.\(^7\)

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3 | European Commission 2024  
5 | Richardson et al. 2023, 1–2.  
6 | Corvellec, Stowell & Johansson 2022.  
7 | Eurobarometer 2020, 8.
Waste generation is fundamentally linked to our economic systems and lifestyle, particularly consumerism. Regarding this, almost 68% of Europeans acknowledge that their consumption habits negatively affect the environment both in the EU and globally.\(^8\) Among a dozen potential strategies to tackle environmental issues, the preferred ones involve changing our consumption patterns and revamping our production and trade practices.\(^9\) Nearly 70% of Europeans believe that decisions to protect the environment should be taken collectively within the EU,\(^10\) and a significant majority (83%) agree that EU environmental legislation is vital for safeguarding the environment in member states.\(^11\) When considering a specific waste category – clothing – 88% of Europeans support the idea that garments should be crafted to endure longer.\(^12\) However, concurrently, nearly half of the population advocates for the availability of clothing at the lowest possible cost, irrespective of the environmental consequences.\(^13\)

To conclude, Europeans are eager to protect the environment and acknowledge the need for a shift in the consumer-driven economy. However, their willingness to adopt such changes wanes when faced with rising costs. In terms of endorsing new EU regulatory measures, the surveys conducted indicate a widespread societal call for improved environmental protection and a move towards a more sustainable and circular economy.

The Czech populace shows, to some extent, a mixed attitude towards environmental protection and the principles of a circular economy. They recognise the necessity for stronger environmental safeguards, especially concerning waste generation – particularly in textile production.\(^14\) There is also a broad consensus on the issue of climate change, its origins, and the pressing need for mitigation.\(^15\) Typically, Czech citizens support recycling, strive to reduce unnecessary waste (like single-use plastics and excessive packaging), save food and energy, and promote longer-lasting products.\(^16\) However, there is also a noticeable indifference to environmental information.\(^17\) Many fear that strategies aimed at combating climate change might adversely affect the economy.\(^18\) Consequently, there is a tendency to prioritise cost considerations over environmental impact.\(^19\)

In short, data suggest that Czech citizens generally support environmental protection and some aspects of the circular economy, yet evince a noticeable

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8 | Ibid. 14.
9 | Ibid. 18.
10 | Ibid. 27.
11 | Ibid. 28.
12 | Ibid. 30.
13 | Ibid. 32.
14 | Stem 2022
15 | Stem 2021
16 | The Office of the Government 2022, 10.
17 | Stem 2020a
18 | Stem 2020b
19 | Stem 2022
reluctance towards measures that are financially demanding and potentially detrimental. Overall, however, while there is a clear need for legislative initiatives to encourage a shift towards a circular economy, according to Politico’s 2018 circular economy rankings, the Czech Republic somewhat unexpectedly secured the fourth position among EU member states. Consequently, Czech policies and legislation contributing to the shift towards a circular economy merit examination.

Within the EU, waste legislation is extensively harmonised. Thus, this article will initially scrutinise the EU’s waste policies and legislation related to the circular economy. Subsequently, it will explore the Czech Republic’s waste policies and legislation in this area. These analyses are instrumental in addressing this article’s objective of ascertaining whether the Czech Republic is on its way to implementing all of the EU’s obligations that stem from the Union’s secondary legislation pertaining to the shift to a circular economy by addressing the research question: Is Czechia on track to transform its linear economy into a circular economy in accordance with EU legislation?

Methodologically, this article focuses on analytical and descriptive jurisprudence, supplemented with critical analysis in some sections. The analytical jurisprudence involves a systematic analysis of legal texts and documents related to the transition to a circular economy at both the EU level and specifically in the Czech Republic. This article focuses on the fundamental EU policies and legislative frameworks that support the transition to a circular economy, including the Circular Economy Action Plan, the Green Deal, and specific legislative acts like the Waste Framework Directive (WFD). It further focuses on national legislation and policy, with a detailed analysis of Czech legislation and strategic documents, such as the State Environmental Policy (SEP) 2030, the Strategic Framework for the Circular Economy of the Czech Republic 2040, and other relevant laws and regulations. However, given that legislation in the field of the circular economy is continuously evolving and there is limited specific literature, the article primarily employs a descriptive approach. This includes describing the current state of policies and legislation without attempting extensive quantitative analysis or modelling.

In some sections, a critical approach is used to evaluate the effectiveness of current legislative and policy measures. This analysis includes challenges and barriers – identification and critical assessment of the challenges the Czech Republic faces in implementing the circular economy, such as public opinion, economic instruments, and legislative shortcomings. Additionally, it includes an analysis of the Czech public’s attitudes towards environmental issues and the circular economy based on surveys and studies such as Eurobarometer and various national surveys.

The article commences with an analysis of several pivotal EU policies on the circular economy. These include the inaugural Circular Economy Action Plan.
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(2015), which established the foundational principles of the circular economy, and the Green Deal, notable for its critical role as a precursor to subsequent legislative developments. Furthermore, the updated Circular Economy Action Plan (2020) is examined in detail. Typically, such policies and strategies set the stage for specific legislative enactments. Accordingly, this section scrutinises particular provisions of EU waste legislation, including directives and regulations, with a focus on their alignment with circular economy principles.

The latter part of the article turns to Czech waste legislation, employing a methodological approach akin to that of the initial section. This entails a detailed analysis of the Strategic Framework of the Circular Economy (SFCE) of the Czech Republic 2040 and pertinent legislation, including Act No. 541/2020 Coll. on waste, Act No. 542/2020 Coll. on end-of-life products, Act No. 243/2022 Coll. on reducing the environmental impact of selected plastic products (Single-use Plastics Act), Act No. 477/2001 Coll. on packaging waste, and Act No. 134/2016 Coll. on public procurement. Additionally, the article discusses the involvement of the Organisation for Economic Co-operation and Development (OECD) in assisting the Czech Ministry of the Environment in examining critical sectors and concerns within the waste management domain.

Even though there is a plethora of literature about general waste management or literature about specific topics such as inspections in waste management or the circularity of specific waste streams such as biogenic waste, the lack of relevant legal literature on the circular economy must be underscored. This article completely omits the international background to the circular economy (for that see Snopková T. Müllerová (ed.) 2022, 545–546).

2. The EU Legal Background

In recent years, the EU has committed itself to facilitating the shift from a linear to a circular economy, as is reflected in a variety of legal instruments, primarily consisting of policies, strategies, and secondary legislation.

2.1. Circular Economy in EU Policies

EU policies not only provide a general legal framework for waste management but also regulate specific waste streams, such as Batteries and Accumulators, Biodegradable Waste, Construction and Demolition Waste, End-of-Life Vehicles, Landfill Waste, Mining Waste, Packaging Waste, Polychlorinated Biphenyls and Terphenyls,

21 | Jančářová et al. 2015, 450–476 or Langlet & Mahmoudi 2016, 283–308.
22 | Vomáčka 2019, 2–6.
23 | Vehlow, Bergfeldt, Visser & Wilén 2007, 130–139.

Elements of the circular economy are embedded within each policy. A particularly comprehensive policy establishing the foundation for the circular economy is the initial Circular Economy Action Plan, titled ‘Closing the Loop – An EU Action Plan for the Circular Economy’.  

2.1.1. Action Plan for the Circular Economy

The Action Plan encompasses 54 initiatives intended to accelerate the shift from a linear to a circular economy. These introduced and subsequently adopted measures were designed to span the entire product lifecycle from production to consumption. Key proposals included the following: allocating over €650 million in funding under Horizon 2020 and €5.5 billion from structural funds; initiatives to diminish food waste through a standard measurement methodology, enhanced date marking, and tools aligned with global Sustainable Development Goals to halve food waste by 2030; the development of quality standards for secondary raw materials to bolster operator confidence within the single market; measures in the Ecodesign Working Plan for 2015–2017 to enhance the reparability, durability, and recyclability of products as well as energy efficiency; a revised Regulation on Fertilisers, promoting the recognition of organic and waste-based fertilisers in the single market and supporting the role of bio-nutrients; a comprehensive strategy on plastics within the circular economy, addressing recyclability, biodegradability, hazardous substances in plastics, and the Sustainable Development Goals aim of substantially reducing marine litter; and a series of initiatives on water reuse, including a legislative proposal setting minimum requirements for wastewater reuse.

The initiative evolved into numerous Circular Economy Packages, encompassing revisions to key legal frameworks. The proposed amendments addressed, among other aspects, waste management and recycling. These included the following: a universal EU target to recycle 65% of municipal waste by 2030; an analogous goal for recycling 75% of packaging waste by the same year; a binding directive to curtail landfills to a maximum of 10% of municipal waste by 2030; a prohibition on the landfilling of separately collected waste; the encouragement of fiscal measures to deter landfilling; refined and augmented definitions, alongside harmonised methodologies for calculating recycling rates across the EU; definitive actions to foster reuse and promote industrial symbiosis by transforming the
by-product of one industry into a raw material for another; and financial incentives for manufacturers to introduce more environmentally friendly products into the market and support recovery and recycling schemes, for instance, those concerning packaging, batteries, and electronic equipment.26

Upon the adoption of the European Green Deal strategy, several crucial elements of waste legislation had already been enacted. These included the revised Regulation on Fertilisers, the Directive on Single-use Plastics, and 10 eco-design implementing regulations.

2.1.2. European Green Deal

Whilst the European Green Deal, commonly referred to as the Green Deal, stands as the principal strategy for rendering the EU climate-neutral, it concurrently encompasses policies relevant to the circular economy. The European Commission posits that transitioning to a circular economy will conserve resources, thereby reducing the dependency on imports. Additionally, product designs adhering to circular economy principles, as well as a circular product lifecycle, are likely to exhibit a reduced carbon emission footprint.

New Industrial Strategy for Europe

Nevertheless, within the scope of the Green Deal, additional actions and measures have also incorporated remarks pertaining to the circular economy, at least to some extent. A notable example is the New Industrial Strategy for Europe.27 This strategy acknowledges the ongoing transformation of European industry, driven by new and disruptive technologies and the increasing pressure on natural resources, prompting a shift towards more circular resource utilisation in manufacturing processes.

Chapter 3.4, entitled ‘Building a More Circular Economy’, is expressly dedicated to this subject. The chapter succinctly elucidates the necessity of transitioning to a circular economy and its potential benefits, such as mitigating environmental impacts and generating new employment opportunities across the EU. Proposed initiatives under the action plan encompass a universal charger, a Circular Electronics Initiative, sustainability prerequisites for batteries, and innovative approaches in the textile sector. Furthermore, the action plan emphasises consumer empowerment, aiming to fortify their market position, notably through the ‘Right to Repair’ initiative.

26 | Ibid.
In more specific terms, this action has spawned several distinct initiatives that have subsequently been converted into legislation, policies, or strategies. These encompass the Circular Economy Action Plan, promulgated concurrently with this strategy, inclusive of a new sustainable product policy framework, a New Regulatory Framework for Sustainable Batteries, an EU Strategy for Textiles, the Circular Electronics Initiative, and measures to enable consumers to assume a proactive role in the circular economy through enhanced product information and fortified consumer rights.

Besides the aforementioned section of the document that pertains to the circular economy, the remainder of the text includes only a few mentions of the circular economy, which are primarily cursory remarks. For instance, the first and second chapters briefly mention the circular approach and industry, yet they do not elaborate further on this topic. Specifically, in Chapter 3.3. (Supporting Industry Towards Climate Neutrality), the text states: ‘The European Green Deal sets the objective of creating new markets for climate-neutral and circular products, such as steel, cement, and basic chemicals’. Subsequently, the focus shifts more towards sustainability rather than circularity. While sustainability and circularity are interconnected, they are not synonymous. The Commission appears to conflate these terms at certain points in the document.

In addition to the New Industrial Strategy for Europe, several other policies, which at least in part target circularity, include the EU Chemicals Strategy for Sustainability, the EU Action Plan: ‘Towards Zero Pollution for Air, Water and Soil’, and measures fostering a sustainable blue economy within the EU, among others. Notably, the remainder of the policies, actions, and initiatives are proposed under the New Circular Economy Action Plan.

2.1.3. New Circular Economy Action Plan

In March 2022, the Commission proposed a successor to the 2015 EU action plan for the circular economy – the New Circular Economy Action Plan (CEAP). Adopted as part of the Green Deal, this plan seeks to reduce the pressure on natural resources, contributing to sustainable development and job creation. The Commission notes that this transition is essential for meeting the EU’s 2050 climate neutrality goal and addressing biodiversity loss.

The CEAP outlines various measures covering the entire product lifecycle. It focuses on product design, supports circular economy practices, promotes sustainable consumption, and aims to decrease waste while keeping resources within the EU economy for as long as possible. In essence, it includes objectives to
make sustainable products standard in the EU; empower consumers and public buyers; concentrate on sectors with high resource use and potential for circularity like electronics, ICT, batteries, vehicles, packaging, plastics, textiles, construction, buildings, food, water, and nutrients; reduce waste; support circularity for people, regions, and cities; and lead international efforts on the circular economy.  

These overarching goals are translated into 35 specific actions covering areas such as a sustainable product policy framework, key product value chains, and reducing waste and enhancing value, alongside crosscutting actions.  

The CAE delineates the legislative and policy frameworks necessary for the transition to a circular economy. The second chapter emphasises the importance of a sustainable product policy framework, aiming to ensure that products in the EU market are durable, easily reusable, repairable, and recyclable, and maximally utilise recycled materials over primary raw ones. The CAEP pinpoints key sectors where targeted actions can significantly influence sustainability, including electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction, buildings, and food. For each sector, the CAEP specifies the unique challenges and delineates the EU’s strategies to address them, focusing on waste reduction and maximising the lifespan of products and materials through improved waste management, curbing overconsumption, and enhancing recycling processes.  

Moreover, the CAEP proposes actions transcending various sectors and product lifecycles, such as endorsing circular processes in production, bolstering the role of consumers, and aiming for reduced waste generation. The plan articulates the EU’s ambition to lead globally in the circular economy and integrates circularity principles into its external policies. The final section of the CAEP provides indicators and methodologies to monitor the progress of this transition, constituting essential tools to gauge the effectiveness of implemented measures and the EU’s trajectory towards complete circularity.  

Since the introduction of the CEAP, various new strategies, initiatives, and legal measures have been proposed; these include the following: a regulation on sustainable batteries, updates to rules on persistent organic pollutants (POPs) in waste, new regulations for waste shipments, the Ecodesign for Sustainable Products Regulation, an EU strategy for sustainable and circular textiles, a revised Construction Products Regulation, initiatives to support consumers in the green transition, revisions to the Industrial Emissions Directive and EU rules on Packaging and Packaging Waste, directives on green claims, common rules to encourage repair of goods, and a regulation to prevent pellet losses and reduce microplastics pollution.
In 2023, the Commission published a revision of the Circular Economy Monitoring Framework, marking a critical stride towards a more circular economy. This revision highlights that, although certain measures have been implemented, the anticipated shifts have not entirely materialised. Specifically, the rate of secondary material usage has not escalated as expected and packaging waste volumes continue to rise, indicating that the economy retains a predominantly linear character. Moreover, despite advancements in resource efficiency within production, the consumption of raw materials remains substantially high. On a positive note, these efficiency improvements have led to a 25% reduction in greenhouse gas emissions. Regrettably, this progress is somewhat offset by a 4% increase in the carbon footprint attributed to overconsumption.34

2.2. Proposed and Adopted Legislation

Following the initial Action Plan for the Circular Economy and the introduction of the Circular Economy Action Plan (CAEP), the Commission has tabled a series of proposals and amendments to directives and regulations aimed at accelerating the transition to a circular economy.

Under the auspices of the CAEP, these substantial legislative measures have been enacted or are currently in the proposal stage:

Notably, a comprehensive new regulation on batteries has superseded the previous directive, Regulation (EU) 2023/1542 concerning batteries and waste batteries.35 The Commission published new delegated regulations, thus amending Regulation (EU) 2019/1021 on POPs.36

Alongside existing legislation, numerous proposals for new legislative measures are currently in the adoption process.37 Several of these proposals are pivotal to advancing waste management and recycling efforts. For instance, there is a forthcoming regulation on waste shipments, particularly targeting textile shipments.38 Additionally, the Commission has proposed a new regulation on eco-design for sustainable products, intended to supersede the current eco-design directive and establish a comprehensive framework for eco-design requirements inclusive of textiles.39 This transition from directive to regulation reflects a broader

37 | In the legislative process at the time of publishing this article.
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trend within EU legislation, further exemplified by the proposed packaging and packaging waste regulation,\(^{40}\) which has three core objectives: diminishing packaging waste, enhancing recycling efforts, and curtailing the demand for primary resources, while fostering a market for secondary materials. Furthermore, a proposal is on the table to establish harmonised conditions for the marketing of construction products.\(^{41}\) Another proposal with an industrial focus pertains to industrial emissions,\(^{42}\) and the final proposal under discussion seeks to regulate plastic pellets.\(^{43}\)

One particular proposal that notably emphasises consumer interests is the proposed directive aimed at empowering consumers in the green transition, offering enhanced protection against unfair practices and improved information.\(^{44}\) This proposed directive seeks to amend both the Consumer Rights Directive\(^ {45}\) and the Unfair Commercial Practices Directive.\(^ {46}\) Additionally, this directive is further supported by a complementary proposal—the Green Claims Directive, which aims to ensure accurate environmental claims.\(^ {47}\) The final proposal focusing on consumer rights pertains to the Right to Repair Directive, advocating for consumers’ ability to repair their products.\(^ {48}\)

It is evident from this analysis of EU policies and legislation on the circular economy that the EU is progressing towards embracing a circular economy model.

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This perspective is reinforced by the findings of Hartley, van Santen, and Kirchherr. They not only offered several recommendations for EU policies but also highlighted the crucial role of Member States. The authors’ recommendations include expanding circular procurement; further adopting circular design standards and norms at the EU level; altering taxes on circular economy-based products; creating eco-industrial parks; liberalising waste trading; initiating a circular economy marketing and promotion campaign; and establishing a global material flow accounting database. Some of these recommendations are specifically targeted at Member States, such as the implementation of taxes or the creation of specialised eco-parks.

3. Circularity in the Czech Republic

The Czech legal framework encompasses extensive regulations pertaining to waste management. Nonetheless, in terms of the circular economy, the legal landscape remains somewhat fragmented. The general foundation of circular economy principles is articulated across a range of policy documents, stakeholder announcements, and commentary. Conversely, specific obligations aimed at facilitating a transition towards sustainable waste management, and thereby a more circular economy, are embedded within the existing waste legislation.

3.1. Czech Policies on the Circular Economy

Czech policies form the bedrock for new waste legislation, specific initiatives, and measures. However, as the Czech Republic is an EU Member State, it is important to acknowledge that newly proposed national legislation is significantly influenced by EU directives and regulations.

The policies can be categorised into a few groups. The primary group includes policies with a direct focus on the circular economy and its enactment. The secondary group comprises policies that tangentially relate to the circular economy but with a distinct principal focus.

The first category encompasses a handful of policies and one action plan – the Strategic Framework of the Circular Economy of the Czech Republic 2040 – and the subsequent action plan – Action Plan Circular Czech Republic 2040 for the period 2022 – 2027, and includes the SEP 2030, with an outlook to 2050, the
Secondary Raw Materials Policy of the Czech Republic for the period 2019–2022, and the Waste Management Plan of the Czech Republic for the period 2015–2024 (the transition to a circular economy is one of the strategic objectives).

The second category consists of broader policies and strategies. These documents often reference the circular economy and its necessity and potential advantages. Examples include the Strategic Framework Czech Republic 2030 (objective 9.3—Increasing energy and material efficiency of the economy), raw materials policies of the Czech Republic in terms of mineral raw materials and their resources, and many more policies and strategies.

**The State Environmental Policy 2030, with an outlook to 2050**

Per the SEP formulated by the Ministry of the Environment, the Czech Republic faces notable challenges that may impede the transition to a circular economy. A primary challenge is the material intensity prevalent in the economy, which saw a 42.7% decline between 2000 and 2018 but remains above the EU average by 27.5%. Waste generation has been on the rise since 2009 (currently at 3555.7 Kg per capita), with nearly half of the municipal waste being directed to landfills. Conversely, material recovery stands at 83.4%, with 69.6% of packaging waste being effectively recovered.

Embracing the circular economy is a central focus of the SEP. To achieve this, the policy outlines strategic and specific objectives that further elaborate and support this principal aim.

The SEP posits that a circular economy guarantees efficient management of raw materials, products, and waste. This is arguably more a statement than a tangible objective, but it can be seen more as an overarching aim than a precise target. The SEP suggests that eco-design is crucial in the transition to a circular economy owing to its role in the product lifecycle. Additionally, setting appropriate legislative frameworks for the recycling and reuse of materials is another key transition aspect. Intriguingly, the SEP also notes the bioeconomy’s relation to waste management and its potential to reduce greenhouse gases, though it does not clarify the connection between the circular economy and the bioeconomy.

The policy acknowledges EU and UN policies and legislation and asserts that the state administration supports a waste management hierarchy, where waste...
prevention is preferred over material recovery and recycling, recycling over energy recovery of waste, and energy recovery of waste before disposal by landfilling.62

Within its strategic objectives, the SEP includes a specific goal: The material intensity of the economy is decreasing. It recognises the Czech Republic’s heavy reliance on industrial and manufacturing processes that consume raw materials, some of which are domestically sourced. Thus, utilising secondary raw materials is considered an opportunity to reduce both domestic extraction and importation from third countries.63

The SEP recognises the current challenges in adopting secondary materials in Czechia due to technological limitations. Nevertheless, it advocates for enhanced support for the secondary raw materials market, exploring tax reductions for recycling activities, and reassessing taxes and fees on primary or low-quality materials.64 Essentially, Czechia is to be encouraged to favour the use of secondary raw materials where feasible.

The second specific objective – Waste prevention efforts are maximised – is closely linked with extended producer responsibility and eco-labelling. However, this section of the SEP suggests a shift in the environmental burden from the state to consumers and their choices. It notes that eco-labelled products are not widely sought by Czech consumers, who, owing to targeted marketing strategies promoting fast fashion and oversized packaging, often struggle to make environmentally conscious decisions.65

Another concern is consumer packaging and packaging used in transport given the significant amount of waste generated. Additionally, the reduction of food waste is highlighted as a priority.66

The specific objective outlines several measures for adoption. These include the following: limiting food waste through increased use of gastro-waste; prioritising reusable packaging and packaging-free retail options; bolstering the infrastructure for processing and using secondary raw materials; encouraging consumer and industry interest in recycled products by expanding the range of certified products and services (eco-labelling); advocating for responsible public procurement across all areas of public administration; promoting low-waste and innovative production technologies; and focusing on processes that replace primary raw materials with secondary ones.67

The final specific objective for transitioning to a circular economy is The waste management hierarchy is fully observed. The objective is primarily focusing on reducing or ceasing waste generation. Despite high recycling rates, recovered

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62 | Ibid. 68.
63 | Ibid. 69.
64 | Ibid.
65 | Ibid. 70.
66 | Ibid. 71.
67 | Ibid. 71.
material remains insufficient. The policy highlights construction waste as a notable source of waste, much of which does not re-enter the production cycle, presenting a significant challenge as it constitutes the largest share of waste streams.  

Landfilling also represents a major issue, with nearly half of the waste ending up in landfills. This situation presents a substantial opportunity to enhance recycling processes and material recovery within the Czech Republic, which would aid in meeting EU legislative targets (limiting municipal waste landfilling to no more than 10% by 2035).  

To meet these specific objectives, various measures are proposed, such as increasing municipal waste material recovery; reducing municipal waste production; encouraging farmers to utilise compost from biodegradable waste; advocating for energy recovery from non-recyclable waste in line with the waste management hierarchy and comprehensive environmental protection; establishing environmentally effective infrastructure and networks for waste conversion and processing; and increasing landfilling fees in accordance with the principles and goals of the waste management hierarchy.

**Waste Management Plan of the Czech Republic for the period 2015–2024**

The plan contains several strategic aims pertaining to the circular economy. These include the prevention of waste and decreases in waste production, the sustainable development of society, and a transition to a circular economy. One of the supportive measures of the shift to a circular economy is to reduce landfilling and increase the reuse and recycling of waste. Therefore, there is a pressure on Member States to limit and ultimately ban landfilling (see below).

The plan sets a goal of a gradual decrease over the years in the landfilling of communal waste from the current level of 46% of all communal waste being landfilled to zero or close to zero. However, there appears to be a discrepancy in the official numbers. For example, the Waste Management Plan states that 45% of all communal waste was landfilled in 2016, but Eurostat claims that it was 50%. This difference can be found in the figures for every year beginning from 2009. Of course, this might stem from the use of different calculation methods by each institution, yielding different numbers. The issue is that the generation of communal waste has been gradually increasing over the years and will continue increasing in the future, which will place recycling efforts (and Czechia) in a difficult position.
because it will be necessary to maximise recycling efforts to ensure compliance with EU legislation on landfiling.

On a positive note, Czechia is on the right track in its goals for package recycling and reuse of 65% and 70%, respectively, in 2019. The final percentages were 71.5% and 75.5%. This positive trend is acknowledged by historic numbers.

**Secondary Raw Materials Policy of the Czech Republic for the period 2019–2022 (updated July 2019)**

The Secondary Raw Materials Policy (SRMP), devised by the Ministry of Industry and Trade and revised in 2019, aligns with EU circular economy policies and targets 10 sources of secondary materials: metals, paper, plastics, glass, construction and demolition materials, by-products of energy production, end-of-life vehicles, waste electrical and electronic equipment, used tires and waste rubber, and discarded batteries and accumulators. For each category, the SRMP identifies potential measures to enhance circularity rates.

Additionally, the policy highlights promising materials for future circular economy applications. Textiles, for example, represent a significant opportunity; almost 90% of textile waste is currently unutilised and holds potential for use in the textile, construction, or manufacturing industries. Other promising sectors include mining waste and critical raw materials from used electronic devices and other electronic waste; recovering the latter in particular could reduce reliance on imports and associated costs, and achieving self-sufficiency in this area could also lessen financial support to regimes in extracting countries. Lastly, the policy considers the bioeconomy, primarily focusing on reducing the consumption of primary resources, an area where the bioeconomy can significantly contribute.

The SRMP outlines five strategic objectives aimed at facilitating the transition to a circular economy: (1) Increase Self-Sufficiency: Boost the Czech Republic’s ability to rely on its own raw material sources by substituting primary resources with secondary alternatives. (2) Support Innovation and Development: Foster innovation and nurture the growth of the circular economy within the business sector. (3) Promote the Use of Secondary Raw Materials: Champion the adoption of secondary raw materials to decrease the material and energy intensity of industrial production. (4) Intensively Support Education and Awareness: Vigorously enhance education and raise awareness regarding the circular economy. (5) Update
Statistical Findings: Consistently refresh statistical data related to secondary raw materials to effectively track and evaluate the advances in the circular economy. Each strategic objective is underpinned by specific aims. Additionally, the policy delineates particular legal instruments designated to actualise these specific objectives.\(^{81}\)

**Strategic Framework of the Circular Economy of the Czech Republic 2040 and Action Plan Circular Czech Republic 2040 for the period 2022–2027**

In December 2021, the Czech Government ratified the Circular Czech Republic 2040 SFCE, devised by the Ministry of the Environment. Noteworthily, the framework was formulated based on an OECD analysis (Towards a national strategic framework for the circular economy in the Czech Republic\(^{82}\)) with assistance from The Directorate-General for Structural Reform Support (DG Reform).

This framework represents the Czech Republic’s inaugural comprehensive strategy for the circular economy. Its objective is to sustain the value of products, materials, and resources within the economic cycle for an extended period and reintegrate them into the production cycle at the end of their lifecycle while working to minimise waste generation.

The vision of Circular Czech Republic is to cultivate a society where the circular economy yields significant environmental, economic, and social advantages. Circular Czech Republic 2040 aims to bolster the economy’s competitiveness and technological sophistication, enhance raw material supply security and resilience to external shocks, foster a sustainable societal framework, and generate new employment opportunities.

The SFCE delineates three primary categories, which are subdivided into 10 focal areas: Life cycle/value chains (Products and design, Consumption and consumers; Waste management), Sectors/systems (Industry, raw materials, construction, energy; Bioeconomy and food; Circular cities and infrastructure; Water), and Horizontal initiatives (Research, development, and innovation; Education and knowledge; Economic instruments).\(^{83}\)

Essential points in the SFCE introduce measures and initiatives aimed at transitioning the Czech Republic to a more circular economy:

Enhancing incentives for designing and manufacturing circular products; increasing emphasis on consumers, who play a pivotal role in preventing waste and can be motivated to choose more circular products; sharpening the focus of waste management on waste prevention and bolstering recycling rates; realising the potential of the bioeconomy to advance a circular economy; leveraging the

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\(^{81}\) Ibid. Chapter 9.

\(^{82}\) OECD 2021.

\(^{83}\) Ministry of the Environment 2021a, 45.
circular economy’s ability to diminish landfill use and promote secondary raw materials; strengthening the synergy between research, innovation, digitisation, and the shift to a circular economy; prioritising effective education and knowledge dissemination to quicken the transition to a circular economy; implementing circular water management practices; and encouraging cities and municipalities to become hubs for circular solutions and incorporate secondary raw materials in infrastructure projects.  

The Action Plan Circular Czech Republic 2040 for 2022–2027 (APC), as per the Environmental Implementation Review 2022 Country Report—Czechia—is a much-anticipated document actualising the SFCE. The APC outlines strategies for attaining the strategic and specific objectives and the types of measures stipulated in the SFCE. It details selected measures across 10 focal areas from the SFCE in the form of activity cards to be executed over the next six years, focusing on the development of the Czech Republic’s circular economy.

The APC’s activities and tasks concentrate on product design, production, consumption phases, and horizontal measures related to the product life cycle, research, innovation, digitisation, education, knowledge and awareness in the circular economy, economic instruments, the bioeconomy and food, industry, raw materials, and construction. It also addresses challenges in plastics, textiles, and municipal waste management. Each activity outlines specific tasks, the responsible ministry, funding sources, and deadlines.

3.2. Specific Legal Instruments for the Promotion of Circularity in Czechia

As highlighted in earlier sections, the entire waste management legal framework is extensively harmonised and, in certain aspects, even unified. Additionally, Czechia has not been particularly proactive in terms of environmental ambitions and has tended to adopt EU legislation with minimal zeal. Consequently, the objectives, goals, and targets introducing minimum standards in EU legislation are typically mirrored in the Czech legislative approach.

The principal legislative document in Czechia regarding waste management is Act No. 541/2020 Coll., on waste (Waste Act). In its introductory section, the Act declares its aim to accomplish certain objectives pertinent to the circular economy.
The objectives are the direct implementation of Article 11(2)(c-e) of the WFD: "by 2025/2030/2035, the preparing for reuse and the recycling of municipal waste shall be increased to a minimum of 55/60/65% by weight", and of Article 5(5) of the landfill directive: "Member States shall take the necessary measures to ensure that by 2035 the amount of municipal waste landfilled is reduced to 10% or less of the total amount of municipal waste generated (by weight)".

Moreover, the Act incorporates a waste management hierarchy, a matter fundamental to the circular economy, as outlined in Article 4(1) of the WFD.

The waste management hierarchy is one of the core principles stated in waste legislation. The first step of the hierarchy is the prevention of waste. This principle is further reinforced in S. 12(1) of the Waste Act, which states, "Everyone is required to prevent, and to reduce the quantity and hazardous properties of waste in their activities".

Although this obligation is adhered to within various industry sectors, the situation differs within the consumer sector. Consumers typically rely on producers and distributors to introduce eco-friendly or sustainable products, and even then, their motivation is primarily driven by prices. The issue at hand is how the EU and Member States can motivate consumers to behave more in line with the waste management hierarchy. This could be achieved through various motivational instruments, especially economic ones, such as a levy on fast fashion products, or by imposing additional regulatory requirements on producers and distributors.

Another direct implementation (Article 11(5) of the WFD) pertains to the reuse and recycling of municipal waste. However, the Waste Act sets a higher final target: "The municipality is obliged to ensure that separately collected recyclable components of municipal waste account for at least 60% in the calendar year 2025 and subsequent years, at least 65% in the calendar year 2030 and subsequent years, and at least 70% in the calendar year 2035 and subsequent years of the total amount of municipal waste generated in that calendar year".

Furthermore, "municipalities are obliged to designate sites for the separate collection of at least hazardous waste, paper, plastics, glass, metals, bio-waste, edible oils, fats, and, from 1 January 2025, textiles".

Another example of adhering to the waste hierarchy, specifically the preventive step, is the requirement for municipalities to provide sites for bio-waste (composting sites). This requirement will help reduce the amount of waste sent to landfills. Bio-waste can be treated as biodegradable municipal waste and used as

89 | S. 1(1) of the Waste Act.
90 | Ibid. S. 3(2).
91 | Snopková 2022, 561.
92 | Louis 2024.
93 | S. 59(3) of the Waste Act.
94 | Ibid. S. 59(2).
95 | Snopková 2022, 561.
a resource in biogas stations, thereby aiding Czechia in achieving more renewable energy sources.\textsuperscript{96}

The waste legal framework is supplemented by specific acts that govern individual waste streams, including Act No. 542/2020 Coll., on end-of-life products; Act No. 243/2022 Coll., on reducing the environmental impact of selected plastic products (the Single-use Plastics Act); and Act No. 477/2001 Coll., on packaging waste.

The End-of-life Products Act oversees particular streams of used electrical equipment, batteries or accumulators, tyres, and end-of-life vehicles. This Act enacts relevant EU legislation and introduces extended producer responsibility, encompassing obligations like take-back systems and awareness-raising activities.\textsuperscript{97} The core concept is that consumers should have the opportunity to return used products at no cost and have access to numerous take-back locations.

Furthermore, this Act prescribes specific collection targets for used products.\textsuperscript{98} Set for the years 2022 and beyond, these include a 65% target for all waste electronic equipment, 45% for portable waste batteries and accumulators, and 80% for all tyres.

Different categories of waste electronic equipment\textsuperscript{99} and tyres\textsuperscript{100} have varied reuse rates. Additionally, the Act specifies minimum recycling rates for batteries and accumulators.\textsuperscript{101}

The Packaging Waste Act, implementing the Packaging Directive, also establishes precise targets for recycling and reuse. It categorises several types of packaging waste: paper and cardboard, glass, plastic, iron, aluminium, wood, and consumer packaging. Each category has individual recycling and reuse targets that incrementally rise each year.\textsuperscript{102} Like the End-of-life Products Act, the Packaging Waste Act delineates extended producer responsibility.

The final Act encompassed within the waste legislative framework is the Single-use Plastics Act, which represents the transposition of the Single-use Plastics Directive and refrains from setting forth any additional or more stringent targets or objectives.

\textbf{Economic instruments}

In addition to administrative legal instruments that establish specific targets and objectives, Czech legislation employs economic tools as incentives. The landfill fee is a crucial disincentive in waste management.\textsuperscript{103} The Waste Act categorises waste
into several types: recoverable, residual, hazardous, selected technological, and redevelopment. The fee is set to progressively increase until 2030 for recoverable waste (approximately € 75 per metric ton) and residual waste (about € 32.4 per metric ton). For other waste types, the fee remains constant. However, the fee’s effectiveness is somewhat limited owing to statutory exemptions for municipalities until 2029, where if the municipal waste volume remains constant, the municipality pays € 20.3 per metric ton. Another fiscal tool aimed at reducing landfill use and encouraging recycling, thereby facilitating the shift to a circular economy, is the municipal waste management system, which allows municipalities to motivate residents to recycle more.

Additionally, a financial incentive is linked to the ecological disposal of end-of-life vehicles. Vehicle scrapyard operators may apply for a grant administered by the National Programme Environment for the ecological disposal of car wrecks. However, there is no legal entitlement to the grant; it is awarded at the Programme’s discretion. Nonetheless, operators are required to accept end-of-life vehicles at no charge, with some even offering a reward for leaving the scrap vehicle with them.

However, there is no significant VAT reduction for circular material or conversely a higher VAT for linear products.

The Supreme Audit Office has noted that despite EU funds contributing to a reduction in landfilled waste, waste production has not decreased, and landfilling still accounts for nearly 48% of waste management, with no marked improvement in waste recycling and recovery.

This challenge indicates that landfill fees are not set at a level sufficient to motivate waste producers, either municipalities or private entities. The fees should be set at a level that strongly incentivises producers to avoid landfilling. Nonetheless, this negative economic instrument should be accompanied by a positive one, particularly for municipalities, rewarding a high percentage of recycled or reused materials in their respective areas.

**Associated acts**

Elements of circularity are present in various specific or sectoral legislative acts, such as Act No. 134/2016 Coll., on public procurement. Public entities have the option to engage in environmentally responsible procurement. The Act stipulates

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104 | Ibid. Annex No. 9.
106 | Ibid. S. 59.
107 | The National Programme Environment 2024
110 | The Supreme Audit Office 2022.
that if the contracting authority opts for this approach, it must consider aspects like the environmental impact; sustainable development; and the life cycle of the supply, service, or work, among other environmentally pertinent factors associated with the public contract. 111 While the Act does not directly reference the circular economy or waste generation, it targets sustainable development and life cycle considerations fundamental to the circular economy concept and is in line with general recommendations for the circular economy shift. 112

A primary challenge in Czechia today involves the reuse of construction waste materials. Given the significantly greater volume of waste from construction than from other streams, new projects should be designed with circularity principles in mind. This encompasses using secondary materials during construction and planning for the dismantling, deconstruction, and subsequent reuse or recycling of materials (as also indicated in Regulation (EU) No. 305/2011 113). 114 However, the practice of selective demolition is not entrenched in current legislation, leaving it to the building authority to set specific conditions in the construction/demolition permit.

In 2018, the Ministry of the Environment issued methodological instructions for the management and disposal of construction and demolition waste. 115 The guidance notes that inert construction waste must be sorted and then processed. It recommends categorising materials like concrete and reinforced concrete, brickwork (containing bricks, mortar, or concrete residues), ceramics, excavated soil and aggregate, asphalt bushes, and milled asphalt layers. 116

While not all construction waste is reusable, recovered material can be used in accordance with Czech Technical Norms (ČSN EN), ensuring the legal use of secondary raw materials in construction projects. 117

Nevertheless, the decision to use reclaimed construction material remains at the discretion of the builder. Moreover, any reused material must meet the product requirements (under Regulation (EU) No. 305/2011 or government regulation No. 163/2002 Coll.) to be commercially viable. 118 This requirement could create administrative hurdles for potential traders and market entry.

Construction or demolition of buildings is a practical process in which reused or recovered materials can be utilised (as stated above). However, Act No. 283/2021 Coll., the Building Act, offers an additional process that can help bolster the shift

111 | Public Procurement Act, S. 28(1)(q).
112 | Hartley, van Santen & Kircherr 2020, 4.
114 | Skopan 2018, 44.
115 | Ministry for the Environment 2018
116 | Skopan 2018, 45.
117 | Ibid. 46.
118 | Simkova 2018, 50.
to a circular economy – spatial planning. This is also a weak point in the legal framework because, to develop a circular economy, robust infrastructure must be in place. The infrastructure can only be built if spatial plans allow it. The problem is that spatial planning is largely dependent on political consensus within municipalities. If there is no infrastructure, or if its development is subject to the whims and fancies of local politicians, it does not provide certainty for investors,\(^\text{119}\) thus making it more challenging for the economy to shift to a more circular approach.

4. Conclusion

The EU aspires to achieve complete circularity by 2050, supported by a range of policies and legislation. Nonetheless, the primary responsibility rests with Member States, as they are tasked with introducing specific measures to facilitate the transition to a circular economy.\(^\text{120}\)

According to Politico’s 2018 ranking, Czechia appears to be progressing towards a circular economy. However, fully realising this transition may be difficult given Czechia’s predominantly industrialised economy and the increasing volume of waste generation.

This article has provided a comprehensive overview of the transition to a circular economy through two analyses. The first, conducted at the EU level, focused on various policies and strategies implemented around the time of the Green Deal’s adoption. The current and leading strategy is the New Circular Economy Action Plan, adopted in 2022, forming the foundation for future legislation. The EU’s commitment to shifting from a linear to a circular economy is profound, evident in the legal transition from directives to regulations, aiming for uniformity across the EU. EU waste legislation also endeavours to encompass a wide array of waste streams, promoting circularity in these sectors.

In Czechia, multiple strategic documents and policies address the circular economy. The SEP 2030, looking ahead to 2050, provides a fundamental framework incorporating circularity elements. A pivotal document is the Secondary Raw Materials Policy of the Czech Republic for 2019–2022. Given the substantial challenges Czechia faces in construction waste generation, recycling, and potential reuse, this policy introduces specific measures to encourage the use of secondary raw materials.\(^\text{121}\) The primary policy document is the SFCE of the Czech Republic 2040, complemented by the APC. This framework’s key objectives include enhancing waste management, positively impacting national climate and other environmental targets, enhancing material supply security, reducing reliance on non-EU

\(^{119}\) Snopková 2022, 566
\(^{120}\) For the comparative regulation of new and old member states, see Hornyáčk-Lindt 2023, 31–48.
\(^{121}\) For the distinction between reuse and recycling, see Olajos 2016, 91–102.
material sources, boosting business competitiveness, and decreasing fossil fuel consumption.

Various Czech policies and EU legislations have been transposed and are currently enacted through several acts: Act No. 541/2020 Coll., on waste; Act No. 542/2020 Coll., on end-of-life products; Act No. 243/2022 Coll., on reducing the environmental impact of selected plastic products (Single-use Plastics Act); and Act No. 477/2001 Coll., on packaging waste. Additionally, circularity aspects are integrated into construction and public procurement legislation.

While it appears that the Czech Republic is steadily advancing towards a circular economy (notably, in the last decade, the volume of landfilled waste has decreased and the recycling and reuse of products have increased), the progression is constrained by several factors. Legislatively, this includes an insufficient application of economic tools (particularly landfill fees) and a general hesitancy among consumers to pay more for sustainable products. 122

The article aimed to determine whether the Czech Republic is on track to fulfill all of the EU’s secondary legislative obligations related to transitioning to a circular economy and posed the research question: Is Czechia on track to transform its linear economy into a circular economy in accordance with EU legislation? The answer to the question is yes. However, a complete shift to a circular economy is still not in sight, and our analysis and comparison of EU and Czech legislation shows that Czechia has a long way to go.

In particular, Czechia has adopted all necessary EU legislation and established national policies to aid this transition. Nevertheless, despite policies and legislation that predate the Green Deal and New Circular Economy Action Plan, overall advances have been modest. Expectations are optimistic regarding recent implementations of policies and legislation, yet specific outcomes and data have yet to be reported. Several issues are delaying a rapid shift to a circular economy, including the gradual increase in waste generation, insufficient infrastructure for recycling and reuse of materials, inadequately set landfill fees, and most importantly, consumers’ reluctance to pay higher prices for more sustainable products. These setbacks collectively make the complete transition to a circular economy a challenging endeavour.

In summary, the shift towards a circular economy promises long-term advantages (such as increased self-sufficiency, reduced greenhouse gases, and job creation). Nonetheless, the EU’s role in this transition remains fundamental, with its new legislative measures compelling manufacturers to consider circularity in their products (e.g. design, common chargers, right to repair) and urging Member States to reassess their national waste policies to align more closely with circularity principles.

122 | On Polish legislation on environmental protection, including the circular economy, see Ledwon 2023, 100–114.
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