

# *Critical review of Bulgarian legislation related to circular economy*

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**Abstract.** This article presents the results of a critical review of Bulgarian legislation in the field of circular economy. It also defines recommendations and guidelines on creating favourable conditions for transition from linear to circular models based on all life cycle stages of processes, products and services.

The main analysed policy document, directly addressing circular economy, is the Strategy and Action Plan for the transition to a circular economy of the Republic of Bulgaria for the period 2022-2027. It lays down the strategic framework towards achieving resource efficiency by applying waste management hierarchy, i.e. waste prevention, reuse and recovery through recycling, reducing landfilling and limiting harmful impact on the environment and human health.

The main pieces of legislation relevant to circular economy are the Waste Management Act and by-laws implementing Directive 2008/98/EC on waste (Waste Framework Directive), Directive 94/62/EC on packaging and packaging waste (Packaging Waste Directive), Directive 1999/31/EC on the landfill of waste (Landfill Directive), Directives 2000/53/EC on end-of-life vehicles, 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and 2012/19/EC on waste electrical and electronic equipment, etc.

The review of provisions in the Waste Management Act and Local Taxes and Fees Act on implementing the 'Waste Management Hierarchy' and 'Polluter Pays' principles shows the need to promote economic incentives. Bulgarian municipalities should revise their ordinances and calculate local waste fees based on the quantity of waste generated (also requested by the current EC infringement procedure for failure to implement the 'Polluter Pays' principle at municipal level).

'Eco design' provisions are in place, and provisions protecting customers' right to repair are expected. In addition to implementing EU acquis, it is possible to promote further measures to reduce environmental impact of products throughout their entire life cycle.

The critical review also covers the main documents tackling climate challenges, i.e., the Climate Change Mitigation Act and by-laws, and the National Strategy and Action Plan by 2030 for adaptation to climate change of the Republic of

Bulgaria, defining the framework for actions for adaptation to climate change and priority directions.

The review of 'horizontal' environmental legislation of the Republic of Bulgaria, i.e., provisions of the Environmental Protection Act and by-laws on strategic environmental assessment (SEA), environmental impact assessment (EIA) and integrated pollution prevention and control (IPPC), reveals the potential to address circular economy aspects in the recommendations issued as part of the relevant competent authorities' permits.

Other potential areas are the environmental protection standards and ESG (Environmental, Social, and Governance) as a framework for environmental and social impact.

Last but not least, the review considers circular economy financing opportunities.

**Keywords:** *circular economy, environment, legislation, review*

## I. INTRODUCTION

During recent years, the cross-cutting concept of 'circular economy', which brings together environmental, technological and economic issues, is gaining more attention globally. Still, it remains largely unexploited in both literature and practice, mainly because of its complexity. The applicable policy and legislative framework are still incomplete and not operational. Market and economic aspects, as well as energy and climate implications, require deeper analysis. Sectors with high environmental impact and potential for circularity are not yet addressed [1].

In Bulgaria, policy documents and legislation on circular economy do not go beyond EU policy requirements and recommendations. Public responsibility and competence remain limited. The concept is not systematically covered by academic disciplines taught at Bulgarian universities. Research and business initiatives are still low and sporadic (with more than 50% of businesses being sceptical about the benefits of sustainable actions) [2].

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Addressing the described deficits, we undertook this critical review of applicable policy and legislative documents, as a significant factor enabling further development and practical implementation of the concept.

## II. MATERIALS AND METHODS

In the first place, our team selected the set of policy and legislative documents that will be subject to the critical review, considering their relevance to the topic (policy analysis).

Next, we reviewed the shortlisted documents by applying the method of content analysis, LogFrame matrix and mapped the results, whereby each of the reviewed group of strategic/ legislative documents was linked to circularity aspects such as circular extraction, processing, product design, technological process, consumption and disposal [3]. By applying the method of gap/ needs analysis, we identified the potential to integrate the concept.

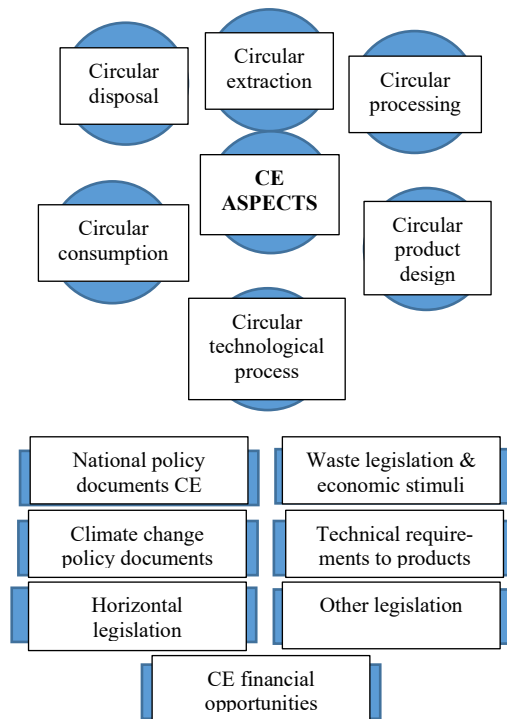


Figure 1: Main Circular economy aspects and groups of documents reviewed

## III. RESULTS AND DISCUSSION

Herein we outline and justify the main results of the performed critical review of Bulgarian policy and legislative documents with relevance to circular economy.

### A. National policy documents on circular economy

The main analysed national policy document, directly addressing circular economy, is the Strategy and Action Plan for the transition to circular economy of the Republic of Bulgaria for the period 2022-2027 (adopted by Council of Ministers Decree 832 of 26 Oct 2022). It lays down the strategic framework towards achieving resource efficiency by applying waste management hierarchy, i.e. waste prevention, reuse and recovery through recycling, reducing landfilling and limiting harmful impact on the environment and human health.

The strategy provides an overall framework for further development in the field. Based on the EU Circular Economy package [4], it defines three strategic objectives (green competitive economy, less waste and more resources, and economy to the benefit of consumers), each of them implemented through specific objectives and measures, covering major circularity aspects:

- priority areas such as plastics, construction and demolition waste, food waste, biomass and bio-based products, raw materials;
- business models that cover design, optimal use, circular support, retaining value;
- main stakeholders, including society, business, government, local authorities;
- relevance to other strategic documents for the reference period 2021-2027 such as the National Strategy for small and medium enterprises and the National Waste Management Plan).

The Action Plan implements several key approaches, i.e., incentives to overcome barriers, educating and connecting market participants and proposing legislative changes. It defines specific short-term, medium-term and ongoing measures with attributed actions, budgets, financing sources, deadlines, expected results, output/result indicators and responsible partners.

The main shortcoming is the lack of impact indicators. These should include both environmental and economic impacts such as prevented and recycled waste, growth of circular economy jobs, share of circular activities in all economic activities, added value generated by repair, reuse and recycling, as well as other indicators used to report at EU level [1]. Considering the motivating effect of such figures, it is important to include appropriate indicators within the foreseen strategy update.

Another typical risk for such documents is the insufficient effort of responsible institutions to uptake foreseen measures and reluctance to implement monitoring and reporting setup. We should note that since the adoption of the major documents in 2022, there has not been any centralised reporting on its implementation, at least publically available.

### B. Waste management legislation, including economic stimuli to attain waste targets

The main pieces of legislation relevant to circular economy remain the Bulgarian Waste Management Act (Prom. SG N 53 of 13/07/2012, last supplemented SG N108 of 30/12/2023 [5]) and its by-laws implementing the provisions of Directive 2008/98/EC on waste (Waste Framework Directive), Directive 94/62/EC on packaging and packaging waste (Packaging Waste Directive), Directive 1999/31/EC on the landfill of Waste (Landfill Directive), Directives 2000/53/EC on end-of-life vehicles, 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and 2012/19/EC on waste electrical and electronic equipment, etc. [6].

The very first article of the Waste Management Act refers to reducing the overall impact of the use of resources expected to contribute to the transition to a circular economy and ensuring long-term competitiveness. Still, this single reference to the term

remains mostly principle, as the reviewed group of acts regulate the measures and control for the protection of the environment and human health by preventing or reducing waste generation, as well as the harmful impact of waste generation and management. They launch core waste management concepts and principles (e.g., the waste hierarchy and polluter pays principle), introduce specific requirements, restrictions and targets (e.g., the waste recycling and landfilling targets etc.), and define the main instruments to attain these targets (such as economic stimuli).

‘Circular economy’ (pretty much like ‘sustainable development’) is an interdisciplinary concept and as such, it cannot be regulated in one sector, neither managed by one competent institution. Implementation of such cross-cutting policies is a major challenge, as it is difficult to achieve the required sense of ownership of each player and spirit of partnership among them.

The review of provisions in the Waste Management Act and Local Taxes and Fees Act (Prom. SG N 117 of 10/12/1997, last amended and supplemented SG N 106 of 22/12/2023 [7]) on implementing the ‘Waste Management Hierarchy’ and ‘Polluter Pays’ principles shows the need to make use of the so called ‘economic stimuli’. The first and most viable circular economy model is the ‘circular household’. Bulgarian municipalities are called to introduce a fair method to calculate local waste fees, based largely on the quantity of waste generated by households, and thus educate citizens and encourage the long expected behavioural change.

The reluctance on the side of local authorities to start the expected change was overcome by a number of pioneering municipalities, implementing demonstration projects with promising results. The main challenge remains that most revenues from waste fees comes from economic entities. It is time to put an end to this cross-subsidy practice and finally start to apply economic instruments to meet the waste targets. This requires difficult and unpopular decisions at municipal level [8].

#### *C. Climate change policy and legislation*

The critical review also covered the main documents tackling climate challenges, i.e., the Climate Change Mitigation Act (Prom. SG N 22 of 11/03/2014, last amended SG N 16 of 23/02/2024 [9]) and the National Strategy and Action Plan by 2030 for adaptation to climate change of the Republic of Bulgaria, defining the framework for actions for adaptation to climate change and priority directions (adopted by Council of Ministers Decree N 621 of 25/10/2019 [10]). Same as with other reviewed groups of acts, the main Bulgarian climate change documents do not refer explicitly to circularity. However, the contribution of circular economy to climate challenges is acknowledged by outstanding organisations such as the well-known Ellen MacArthur Foundation aimed at accelerating the transition to a circular economy [11].

#### *D. Technical requirements to products*

Another group of relevant acts is the Act on Technical Requirements to Products (Prom. SG N 86 of 01/10/1999, last supplemented SG N 105 of 11/12/ 2020 [12]) and its by-laws, implementing the so-called Eco Design Directive

2009/125/EC reducing the products’ environmental impact [13].

EU is preparing a new Regulation establishing a framework for setting eco-design requirements for sustainable products and repealing Directive 2009/125/EC. It is expected to expand eco-design requirements to more products (steel, textiles, furniture, tyres, and chemicals) and protect EU customers’ right to repair (by ensuring that products last longer and are easier to repair, upgrade, recycle [14]).

In addition to implementing the relevant EU acquis, Bulgaria may consider other means to regulate and encourage reducing environmental impact of products throughout their entire life cycle. These may be national and local provisions for establishing repair centres and promoting them among citizens etc.

#### *E. Horizontal environmental legislation*

The review of ‘horizontal’ environmental legislation of the Republic of Bulgaria, namely the Environmental Protection Act (Prom. SG N 91 of 25/09/2002, last amended SG N 102 of 08/12/2023 [15]) and by-laws implementing the provisions of Directive 2001/42/EC on strategic environmental assessment (SEA Directive), Directive (2011/92/EU as amended by 2014/52/EU on environmental impact assessment (EIA Directive) and Directive 96/61/EC on integrated pollution prevention and control (IPPC Directive) [16], reveals the potential to integrate all circular economy aspects across all stages of all procedures. However, currently circular economy aspects are not legally binding. Therefore, it is most appropriate to encourage their integration within the recommendations issued as part of the relevant competent authorities’ permits. The capacity of the above procedures to integrate various cross-cutting aspects is excellent.

Other potential areas that may apply circularity targets are environmental protection standards and ESG (Environmental, Social, and Governance) as a framework for environmental and social impact.

#### *F. Other relevant legislation*

Other relevant legislation includes the Ordinance on criteria for sustainability of biofuels and liquid fuels obtained from biomass (Prom. SG N95 of 4 Dec 2012, amended and suppl. SG N10 of 1 Feb 2019) implementing the provisions of Directive 2009/28/EC on the promotion of the use of energy from renewable sources RES Directive); Ordinance on the use of sludge from wastewater treatment through in agriculture (Prom. SG N63 of 12 Aug 2016), implementing Directive 86/278/EEC on the use of sewage sludge in agriculture (Sewage Sludge Directive), etc. However, implementation of such acts is still lagging behind.

#### *G. Circular economy financing opportunities*

A major source of financing for circular economy projects are the grant award procedures under the Programme ‘Competitiveness and Innovation in Enterprises’ 2021-2027 to the European Shared Management Funds 2021-2027. Another important source is the National Recovery and Resilience Plan.

The institutions responsible for management of such financing instruments should ensure that their internal

monitoring and external evaluation reports address both the environmental impact and economic efficiency of implemented circularity projects.

An excellent example is the special report of the European Court of Auditors, assessing efficiency and influence of EC action on member states' circular-economy activities. The messages of the report entitled 'Slow transition by member states despite EU action' are a good example of constructive criticism. The report concludes that there is limited evidence that EC Circular Economy Action Plans and in particular the actions regarding the circular design of products and of production processes, had been effective in influencing circular-economy activities in the member states [17].

TABLE 1 NUMBER OF ACTS REVIEWED

GROUPS OF DOCUMENTS	National policy does CE	Waste legisl & econ. stimuli	Climate change policy	Techn. Requirements products	Horizontal legislation	Other relevant legislation	CE financing opportunities
NUMBER OF ACTS REVIEWED	2	7+	3	3	4	2	2

#### IV. CONCLUSIONS

The results of the critical review are presented in table 2 below.

The only document explicitly addressing all circular economy aspects (extraction, processing, product design, technological process, consumption, and disposal) is the Strategy and Action Plan for the transition to circular economy of the Republic of Bulgaria for the period 2022-2027. The main recommendations to these documents are to define environmental and economic impact indicators and implement the foreseen monitoring scheme.

The Waste Management Act is the only other document explicitly referring to 'circular economy', albeit declaratively. Actually, circular economy is expected to offer economic stimuli and contribute to implementation of waste targets, so CE regulation in waste legislation does not seem necessary/ appropriate.

All other documents reviewed do not contain explicit reference to 'circular economy' but there is implicit existing or potential relevance.

The situation with Climate change policy is similar to waste management legislation (CE is expected to contribute).

Horizontal legislation offers the greatest potential to integrate all CE aspects, especially within the recommendations issued as part of the relevant competent authorities' permits.

The main recommendation to financing instruments is to assess the environmental impact and economic efficiency of implemented circularity projects.

We also acknowledge the analysis and legislative changes proposed in the Circular Economy Strategy and Action Plan.

As described in [18], the general weakness of national strategic planning documents and legislation is the absence of systematic basis for their elaboration. The methodology for strategic energy planning [19] is a good example to be considered. To this end, plenty of preliminary studies may be performed, e.g. on appropriate research avenues [20], possible optimisation criteria [21], significance and influence of public opinion [22], etc.

TABLE 2: MAP OF RESULTS FROM THE LEGISLATIVE REVIEW

DOCUMENT \ CE ASPECT	National policy does CE	Waste legisl & econ. stimuli	Climate change policy	Techn. Requirements products	Horizontal legislation	Other relevant legislation	CE financing opportunities
	Circular extraction	↔	→	→	←	←	←
Circular processing	↔	→	→	←	←	←	←
Circular product design	↔	→	→	←	←	←	←
Circular technological process	↔	→	→	←	←	←	←
Circular consumption	↔	→	→	←	←	←	←
Circular disposal	↔	→	→	←	←	←	←

- ← CE aspect supported by document (passive)
- CE aspect supporting document (active)
- ↔ Declarative relevance
- ↔ Potential relevance
- ↔ Strong (explicit) relevance

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#### REFERENCES

- [1] H. Wiesmeth, Implementing the circular economy for sustainable development. Elsevier, 2021, pp. 19-31.
- [2] В. Иванова, Кръговата икономика в България – перспективи и предизвикателства, Научни трудове на УНСС, том 5/2019. [Online] Available: [https://research.unwe.bg/uploads/ResearchPapers/RP\\_vol5\\_2019\\_No14\\_V%20Ivanova.pdf](https://research.unwe.bg/uploads/ResearchPapers/RP_vol5_2019_No14_V%20Ivanova.pdf) [Accessed Feb 24, 2024]
- [3] M. Sillanpää, C. Ncibi, The circular economy: case studies about the transition from the linear economy. Elsevier, 2019, <https://doi.org/10.1016/B978-0-12-815267-6.00001-3>.
- [4] EU Circular Economy Action Plan [Online]. Available: [https://environment.ec.europa.eu/strategy/circular-economy-action-plan\\_en](https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en) [Accessed Feb 24, 2024].
- [5] Waste Management Act (Prom. SG N 53 of 13/07/2012, last supplemented SG N108 of 30/12/2023).
- [6] Directive 2008/98/EC on waste (Waste Framework Directive), Directive 94/62/EC on packaging and packaging waste (Packaging Waste Directive), Directive 1999/31/EC on the landfill of Waste (Landfill Directive), Directives 2000/53/EC on end-of-life

- vehicles, 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and 2012/19/EC on waste electrical and electronic equipment.
- [7] Local Taxes and Fees Act (Prom. SG N 117 of 10/12/1997, last amended and supplemented SG N 106 of 22/12/2023).
- [8] S. Goranova, K. Anguelov, Circular economy and „polluter pays” principle in Bulgarian municipalities, Entrepreneurship and sustainability issues [to be published].
- [9] Climate Change Mitigation Act (Prom. SG N 22 of 11/03/2014, last amended SG N 16 of 23/02/2024).
- [10] National Strategy and Action Plan by 2030 for adaptation to climate change of the Republic of Bulgaria, defining the framework for actions for adaptation to climate change and priority directions (adopted by Council of Ministers Decree N 621 of 25/10/2019)
- [11] Fixing the economy to fix climate change, Ellen MacArthur Foundation [Online]. Available: <https://www.ellenmacarthurfoundation.org/topics/climate/overview> [Accessed Feb 24, 2024].
- [12] Act on Technical Requirements to Products (Prom. SG N 86 of 01/10/1999, last supplemented SG N 105 of 11/12/ 2020).
- [13] Eco Design Directive 2009/125/EC.
- [14] Proposal for Ecodesign for Sustainable Products Regulation, 2022. [Online]. Available: [https://environment.ec.europa.eu/publications/proposal-ecodesign-sustainable-products-regulation\\_en](https://environment.ec.europa.eu/publications/proposal-ecodesign-sustainable-products-regulation_en) [Accessed: Feb 24, 2024].
- [15] Environmental Protection Act (Prom. SG N 91 of 25/09/2002, last amended SG N 102 of 08/12/2023).
- [16] Directive 2001/42/EC on strategic environmental assessment (SEA Directive), Directive (2011/92/EU as amended by 2014/52/EU on environmental impact assessment (EIA Directive) and Directive 96/61/EC on integrated pollution prevention and control (IPPC Directive).
- [17] Eunomia and COWI contracted by the European Commission, Study on investment needs in the waste sector and on the financing of municipal waste management in Member States, 2019. ISBN 978-92-76-09502-6. doi:10.2779/769124.
- [18] D. Stoilov, D. Tonev, K. Anguelov, K. Hadzhiyska, Energy Planning in Bulgaria, 2022, V International Conference on High Technology for Sustainable Development (HiTech), Sofia, Bulgaria, 2022, pp. 1-6, doi: 10.1109/HiTech56937.2022.10145524.
- [19] D.Stoilov, Methodology for strategic planning of the national energy industry, VI International Conference on High Technology for Sustainable Development (HiTech), Sofia, Bulgaria (in press), 2023.
- [20] D. N. Wise, D. Stoilov, Energy Integration in the European Union – Traditional Approaches and Future Research Avenues, 2023, 13th Electrical Engineering Faculty Conference (BulEF), Varna, Bulgaria, 2021, pp. 1-7, doi: 10.1109/BulEF53491.2021.9690794.
- [21] K. Hadzhiyska, D. Stoilov, Multi-Criteria Analysis Approaches for Energy System Development Scenario — Review, 2023, 18th Conference on Electrical Machines, Drives and Power Systems (ELMA), Varna, Bulgaria, pp. 1-9, doi: 10.1109/ELMA58392.2023.10202557.
- [22] D. Nikolova, D. Stoilov, Factors Influencing the Public Sentiment on Nuclear Energy Investment in European Union Member States, 2023, 18th Conference on Electrical Machines, Drives and Power Systems (ELMA), Varna, Bulgaria, pp. 1-9. doi: 10.1109/ELMA58392.2023.10202457.