

TRANSITION TO CIRCULAR ECONOMY: MEDIATION OF PUBLIC PROCUREMENT IN GEORGIA

Pavliashvili S.

*Member of the Georgian National Academy of Sciences
Doctor of Economic Sciences, Professor
Tbilisi, Georgia
Georgian National Academy of Sciences
Rustaveli Avenue 52, 0108, Tbilisi, Georgia
<https://doi.org/10.5281/zenodo.19573237>*

Abstract

This article examines the role of public procurement as a key instrument for facilitating Georgia's transition to a circular economy. While Georgia has made progress in modernizing its procurement system, the integration of circular economy principles remains limited. Drawing on EU best practices and the experiences of Eastern Partnership countries, this paper identifies key barriers to green public procurement, including legal, institutional, and market-related challenges. It proposes a framework for leveraging public procurement as a mediating mechanism, linking policy objectives with market capabilities. The article outlines practical recommendations for legislative reform, capacity building, supplier engagement, and monitoring, emphasizing the importance of mediation between public authorities, private actors, and technical experts. This framework aligns with Georgia's broader economic modernization goals, supports sustainable development, and facilitates harmonization with European Union standards.

Keywords: Circular economy, green public procurement, Georgia, sustainable development, policy framework, EU integration

Introduction

The transition to a circular economy in Georgia is not only environmentally justified but also strategically essential for ensuring the country's long-term competitiveness and economic sustainability. In the context of increasing resource constraints and environmental pressures, shifting from a linear to a circular economic model represents a critical pathway toward resilient and inclusive growth.

Public procurement—defined as the process through which state institutions acquire goods, services, and works—constitutes one of the most powerful policy instruments for driving economic transformation. Given that public procurement expenditure accounts for a significant share of Georgia's GDP, procurement decisions can generate strong demand-side signals within the market. The integration of circular economy criteria into tender requirements (such as product durability, recyclability, the use of secondary raw materials, life-cycle costing, and extended producer responsibility), can stimulate innovation, influence supplier behavior, and gradually reorient production systems toward circular models (Rainville, 2021).

Existing research on circular public procurement highlights its potential to accelerate systemic transitions, particularly when supported by effective mediation mechanisms. Public procurement does not operate in isolation; rather, it functions as a bridge between policy objectives and market dynamics. Within this process, intermediary actors (including policy advisors, technical experts, industry associations, and innovation platforms) play a crucial role. They facilitate the translation of sustainability objectives into operational procurement practices, foster collaboration between public authorities and private sector actors, and help reduce uncertainties associated with emerging circular markets.

Accordingly, public procurement should be understood not merely as an administrative or financial procedure, but as an institutional mechanism capable of linking circular economy strategies with tangible economic outcomes. Through the strategic design and implementation of procurement policies, Georgia can promote circular innovation, support the diffusion of green technologies, and advance its broader sustainable development agenda.

1. Conceptual Framework and Global Context

Circular Economy Principles

The circular economy is grounded in three fundamental principles, originally articulated by the Ellen MacArthur Foundation and widely adopted in international policy and academic institutions. These principles include: (i) the elimination of waste and pollution, (ii) the extension of product and material lifecycles through continued use, and (iii) the regeneration of natural systems. In contrast to conventional linear models of production and consumption, the circular economy entails a systemic transformation of economic structures. It requires a comprehensive rethinking of how products are designed, produced, distributed, consumed, and managed at the end of their life cycles (Ellen MacArthur Foundation, 2015; Geissdoerfer et al., 2017). Rather than incremental improvements, it promotes a paradigm shift toward restorative and regenerative economic practices.

The practical implementation of circular economy principles is operationalized through several key strategies. These include product reuse, repair, refurbishment, and remanufacturing, as well as the adoption of Extended Producer Responsibility (EPR) schemes that incentivize eco-design and lifecycle accountability. Additionally, the emergence of service-oriented busi-

ness models (often referred to as “product-as-a-service”) aligns producer incentives with product longevity and performance rather than sales volume (Kirchherr, Reike & Hekkert, 2017; Tukker, 2015). Collectively, these approaches contribute to resource efficiency, waste reduction, and the decoupling of economic growth from resource consumption.

The European Union Circular Economy Action Plan and Its Relevance for Georgia

The European Union Circular Economy Action Plan, adopted in 2020 as a central component of the European Green Deal, establishes a comprehensive policy framework aimed at reducing resource consumption, increasing recycling rates, and ensuring that sustainable products become the norm within the European market (European Commission, 2021). The Action Plan places particular emphasis on product design, waste prevention, and the promotion of secondary raw materials.

For countries such as Georgia, which are engaged in legal and institutional approximation under the EU–Georgia Association Agreement, these policy developments carry significant regulatory implications. Alignment with EU environmental and economic standards is not only a legal obligation but also a strategic opportunity to modernize domestic economic systems.

In this context, the EU Green Public Procurement (GPP) framework is of particular importance. It provides structured environmental criteria for integrating sustainability considerations into public procurement processes across a wide range of sectors. Currently, EU GPP criteria encompass more than 20 product and service categories, including information and communication technology (ICT) equipment, cleaning products, construction works, and food and catering services (European Commission, 2021).

The gradual adoption and implementation of these criteria in Georgia would represent a critical step toward regulatory convergence with the European Union. At the same time, it would facilitate the advancement of national circular economy objectives by embedding sustainability principles into public sector demand, thereby influencing market behavior and supporting the transition toward more resource-efficient and environmentally sustainable production systems.

Public Procurement as a Policy Tool for the Circular Economy

According to international evidence, public procurement typically accounts for approximately 10–15% of a country’s GDP, underscoring its significance as a powerful instrument of economic policy (OECD, 2019). Beyond its administrative function, public procurement can shape market structures and influence production patterns by directing demand toward specific goods and services.

When circular economy principles are embedded into procurement decisions (such as prioritizing recyclable materials, product durability, extended lifecycles, and reparability) public sector demand generates strong incentives for suppliers to innovate and adapt their production processes. In this way, public procurement can serve as a key driver in the development of markets for resource-efficient and environmentally sustainable products and services (Testa et al., 2016).

Empirical studies suggest that the effectiveness of circular public procurement largely depends on the clarity and precision with which demand is articulated, as well as its direct linkage to measurable circular outcomes. This includes the formulation of tender criteria that explicitly prioritize durability, reusability, and recyclability, thereby providing clear signals to market actors (Rainville, 2021). Well-designed procurement frameworks can thus reduce uncertainty, encourage investment in sustainable innovation, and accelerate the transition toward circular production systems.

The Role of Mediation and Intermediaries

Academic literature emphasizes the critical role of intermediaries in bridging the gap between public procurement systems and emerging circular economy markets. Mediation mechanisms contribute to this process in several key ways (Rainville, 2021).

First, intermediaries facilitate coordination between government institutions and industry actors. By aligning public policy objectives (such as the integration of sustainability criteria into procurement) with the technical and operational capacities of firms, intermediaries enable suppliers to better understand and respond to circular requirements.

Second, mediation supports collaboration by fostering partnerships between public buyers and private suppliers. Such interactions often lead to the co-creation of innovative products and services that are aligned with circular economy principles.

Third, intermediaries play an important role in the development of tender specifications. Through stakeholder engagement and technical consultation, they contribute to the design of procurement criteria that incorporate lifecycle costing, the use of recycled materials, and other circular parameters. This dynamic process helps ensure that procurement frameworks are both ambitious and feasible, enabling market participants to transition beyond traditional, cost-driven models toward more sustainable and innovation-oriented practices.

Overall, effective mediation reduces informational asymmetries, enhances institutional capacity, and strengthens the link between policy objectives and market outcomes, thereby increasing the overall impact of circular public procurement.

2. Public Procurement in Georgia

Legislative and Institutional Framework

The public procurement system in Georgia is primarily regulated by the Law of Georgia on Public Procurement, initially adopted in 2005 and substantially revised in subsequent years. The system is administered by the State Procurement Agency (SPA), a Legal Entity of Public Law operating under the Ministry of Finance. The SPA oversees the unified electronic procurement platform (procurement.gov.ge), which is widely regarded as one of the most transparent and technologically advanced systems in the region.

In recent years, Georgia’s procurement framework has undergone significant modernization, largely driven by commitments undertaken within the framework of the EU–Georgia Association Agreement, as well as by recommendations from international development partners. The electronic procurement system

ensures open access to tender announcements, bid submissions, and contract award data, thereby substantially enhancing transparency, competition, and accountability in public sector operations.

Despite these notable institutional advancements, the current procurement system remains predominantly focused on cost-efficiency and procedural compliance. Strategic procurement objectives—such as environmental sustainability, resource efficiency, and the integration of circular economy principles—are not yet systematically embedded within procurement practices.

Challenges, Gaps, and Institutional Requirements in Georgia

A primary challenge relates to the legal and regulatory framework. Although environmental considerations are occasionally reflected in tender documentation, Georgia still lacks a comprehensive Green Public Procurement (GPP) policy or action plan that would ensure the systematic and mandatory application of environmental criteria across procurement categories. As a result, sustainability and circularity considerations remain largely discretionary and insufficiently institutionalized.

Closely linked to this regulatory gap is the issue of institutional capacity. Procuring entities (including ministries, municipalities, and state-owned enterprises) often lack the technical expertise required to design, implement, and evaluate circular procurement criteria. In the absence of such capabilities, even well-intentioned sustainability policies risk remaining formal commitments rather than effective instruments of transformation.

Another structural constraint concerns market readiness and supplier engagement. While certain domestic and international firms operating in Georgia already provide resource-efficient and environmentally sustainable products and services, the overall market remains unevenly developed. Certification systems and mechanisms supporting eco-innovation are still limited, which may lead suppliers to perceive circular procurement requirements as a source of additional risk and uncertainty.

An additional challenge lies in the underdevelopment of coordination and mediation mechanisms. Effective circular procurement requires institutionalized platforms that enable collaboration among public authorities, private sector actors, industry associations, non-governmental organizations, and technical experts. At present, such mechanisms remain fragmented and lack systemic integration. Consequently, the linkage between circular economy policy objectives and day-to-day procurement practices is often weak.

Furthermore, significant limitations persist in monitoring and evaluation systems. The environmental impact of public procurement is not systematically measured, and there is a lack of comprehensive data on key indicators such as lifecycle environmental impacts, the use of recycled materials, waste reduction outcomes, and energy efficiency improvements. This data gap constrains policymakers' ability to assess progress,

refine policy instruments, and demonstrate the economic and environmental benefits of circular procurement.

Addressing these interconnected challenges requires both institutional innovation and coordinated policy development. Georgia could benefit from establishing specialized circular procurement units within central government structures, developing inter-agency coordination platforms, and promoting public-private partnerships that mediate between policy objectives and market capabilities. Such institutional mechanisms would enhance coordination, facilitate knowledge transfer, strengthen technical capacities, and support the systematic integration of circular economy principles into public procurement policy and practice.

Thus, strengthening procurement mediation should not be viewed merely as an administrative adjustment; rather, it represents a strategic instrument through which the principles of the circular economy can be translated into concrete economic practices, thereby supporting Georgia's long-term sustainable development objectives.

3. Public Procurement as a Transitional Intermediary for the Circular Economy

The Role of the Intermediary: Theory and Mechanisms

Public procurement can be conceptualized as a mediating mechanism insofar as it translates policy objectives (including circular economy principles) into concrete contractual requirements that directly influence supplier behavior, product design, and waste management practices.

For instance, when a public authority specifies in tender documentation that procured furniture must contain a minimum share of recycled materials and be designed for repairability, this goes beyond a purely technical procurement decision. Such requirements generate clear and credible signals to producers, investors, and actors across the value chain. When replicated systematically across numerous procurement processes, these signals can exert a transformative effect on sectoral standards, encouraging investment in circular production technologies and business models.

The intermediary function of public procurement operates through three principal mechanisms. First, it serves as a market-signaling instrument, whereby the state creates stable and long-term demand for circular goods and services, thereby reducing uncertainty for private sector actors. Second, it functions through regulatory integration, embedding sustainability principles into legally binding contractual obligations. Third, it contributes to capacity development, strengthening knowledge, technical expertise, and learning processes within both public institutions and supply chains. Together, these mechanisms enable procurement systems to act as catalysts for systemic change rather than merely transactional processes.

Priority Sectors for Circular Procurement in Georgia

In the context of Georgia, the potential for implementing circular procurement varies across sectors. Considering the scale of public expenditure, environmental impact, and market readiness, several sectors

emerge as strategic priorities where circular principles can generate substantial effects.

The infrastructure sector represents one of the largest categories of public procurement expenditure and is characterized by intensive material use and significant waste generation. Integrating requirements such as the use of recycled aggregates, design for deconstruction, and certified sustainable timber into public infrastructure contracts could significantly reduce environmental impacts while simultaneously stimulating markets for construction and demolition waste recycling.

A second priority area is the information technology and electronics sector, encompassing computers, printers, and telecommunications equipment. This high-value category is particularly suitable for circular procurement due to the availability of well-developed international standards. The integration of criteria related to energy efficiency, durability, and upgradability can extend product lifecycles and reduce electronic waste. Given the significant purchasing power of the Georgian public sector, aligning procurement specifications with standards such as Energy Star or EPEAT would represent a feasible and high-impact policy step (Ministry of Environment Protection and Agriculture of Georgia, 2021).

The food and catering services sector (including procurement for schools, hospitals, and other public institutions) also offers considerable potential. Circular approaches in this domain may include reducing food waste, promoting sustainably produced agricultural goods, and requiring suppliers to implement effective organic waste management practices. Given Georgia's strong agricultural base, such measures can simultaneously advance circular economy objectives and broader rural development goals.

Finally, the textile and uniform sector, including procurement for institutions such as the Ministry of Internal Affairs and defense structures, presents additional opportunities. The introduction of extended producer responsibility schemes, durability standards, and systems for the collection and recycling of used textiles could significantly enhance resource efficiency. Although Georgia's textile industry remains relatively small, the creation of consistent circular demand signals (particularly through public procurement) could act as a catalyst for innovation, sectoral upgrading, and increased competitiveness.

Framework for Integrating Circularity into Georgian Public Procurement

Legislative Reforms

Establishing a comprehensive approach to green and circular public procurement in Georgia requires coordinated legislative reforms at both primary and secondary levels of the legal framework.

At the level of primary legislation, the Law of Georgia on Public Procurement should provide an explicit legal mandate obliging procuring entities to systematically incorporate environmental and circular economy criteria into procurement planning, tender design, and evaluation processes. Embedding such principles in primary law would elevate sustainability from

a discretionary consideration to a binding policy objective.

At the level of secondary legislation and administrative regulation, the State Procurement Agency should develop and publish sector-specific Green Public Procurement (GPP) criteria. These criteria should be based on relevant European Union technical standards and adapted to the specific conditions of the Georgian market. At an initial stage, their application could remain voluntary, supported by appropriate incentive mechanisms such as preferential evaluation scoring or pilot programs. Over time, and within a clearly defined implementation timeline, these criteria could become mandatory in procurement categories with significant environmental impact.

Capacity Building

Legislative reforms can only be effective if accompanied by systematic strengthening of institutional capacity. This requires sustained investment in the professional development of public procurement specialists and personnel within contracting authorities.

A key priority is the design and implementation of standardized training programs focused on circular economy principles and green public procurement methodologies. In parallel, practical tools—including operational guidelines, sector-specific manuals, and standardized contractual clauses—should be developed to facilitate the consistent application of circular criteria across procurement processes.

Furthermore, the establishment of a specialized technical advisory unit within the State Procurement Agency would provide critical support to procuring entities in designing and evaluating circular specifications. The creation of inter-institutional learning networks (linking municipalities with central government bodies) would also enhance knowledge exchange and promote the dissemination of best practices.

International development partners, including the European Union, United Nations Development Programme, German Agency for International Cooperation, and European Bank for Reconstruction and Development, possess substantial experience in supporting similar reforms across Eastern Partnership countries. Their engagement can play a pivotal role in the effective implementation of a national Green Public Procurement development program in Georgia.

Market Engagement and Supplier Development

The success of circular public procurement policies depends significantly on market readiness and active private sector participation. To this end, the Georgian government should adopt proactive market engagement strategies aimed at informing suppliers (both domestic and international) about upcoming green procurement requirements.

Early and transparent communication enables firms to adjust their products, technologies, and supply chains in anticipation of new standards. Particular emphasis should be placed on supporting small and medium-sized enterprises (SMEs), which constitute a substantial share of the Georgian economy. Targeted advisory services, technical assistance programs, and improved access to finance can help SMEs comply with

circular economy requirements and participate effectively in public tenders.

Industry associations, chambers of commerce, and sectoral business organizations also have a crucial role to play. Their involvement in the development of GPP criteria can ensure that procurement requirements remain technically feasible and economically viable within the Georgian context, thereby increasing overall policy effectiveness.

Monitoring, Evaluation, and Data Infrastructure

The effective implementation of green public procurement requires a robust system of monitoring and evaluation. Georgia's existing electronic procurement platform already provides a strong technological foundation for integrating environmental indicators into procurement data systems.

By incorporating additional data fields related to sustainability (such as lifecycle environmental impacts, recycled content, energy efficiency, and waste reduction outcomes) the system can enable systematic tracking of the environmental performance of public procurement over time.

The State Procurement Agency should develop a comprehensive set of monitoring indicators aligned with European Union reporting frameworks, publish regular (e.g., annual) performance reports, and integrate circular economy metrics into the broader public expenditure reporting system. Strengthening the data infrastructure in this way will enhance transparency, support evidence-based policymaking, and enable continuous improvement of circular procurement practices.

Lessons from the Eastern Partnership Countries

Georgia can learn valuable lessons from the achievements of other Eastern Partnership countries in developing green public procurement. For example, Ukraine, with the support of the European Union and the UNDP, has taken important steps towards establishing a regulatory framework for green public procurement, including by defining relevant criteria for the energy, IT equipment and transport sectors.

Moldova has developed a national action plan for green public procurement and introduced environmental assessment criteria in several key procurement categories. Armenia has successfully implemented pilot projects for energy-efficient procurement in public buildings, which have shown measurable results in reducing energy consumption and costs.

The main lessons learned from this experience include several important factors: the need for strong political support at the highest level of government, the importance of systematic cooperation with the private sector, the benefits of implementing pilot projects, and the critical role of international technical assistance in developing local expertise.

Georgia's developed e-procurement infrastructure and the reforms implemented in recent years put the country in a favorable position in the regional context. These circumstances indicate that, given the appropriate political priorities and resource mobilization, rapid progress towards circular public procurement is possible.

Challenges and risk mitigation

The process of transitioning to circular public procurement in Georgia is associated with a number of significant challenges, the preliminary identification and management of which are essential for the success of the reform. One of the main problems is market fragmentation and the relatively limited domestic supply of products and services based on circular economy principles. In such circumstances, the practical application of circular criteria may be difficult, especially for smaller procuring entities with fewer institutional and technical resources.

In order to reduce risks, it is advisable to implement policies gradually, implement voluntary pilot programs and implement targeted measures to facilitate the development of suppliers. Such an approach will allow the market to adapt and gradually increase the availability of circular products and services.

The issue of price competitiveness is also often perceived as a challenge. Critics argue that the inclusion of environmental requirements in public procurement increases the overall cost of procurement. However, life-cycle costing shows that when considering the full life cycle of a product (including operating costs, maintenance and waste management after the end of its life) sustainable products often have higher economic efficiency despite relatively higher initial costs.

Institutional resistance is another common challenge that often accompanies changes in traditional procurement practices. Successful reform requires not only the introduction of technical tools, but also an effective change management process. This includes a clear definition of policy objectives and benefits, professional training, and active leadership from high-ranking government officials to help build trust and support for the reform.

In addition, there is the risk of so-called "greenwashing," where suppliers make exaggerated or misleading environmental claims about their products. To mitigate this risk, it is necessary to establish clear and reliable verification mechanisms. Such mechanisms could include mandatory third-party certification for significant environmental claims, as well as systematic monitoring of compliance after the award of the contract.

Policy Implications and Recommendations

Based on the literature review and the analysis of Georgia's strategic development documents, the effective implementation of circular public procurement requires a mediation-oriented approach that aligns public sector demand with private sector capabilities. Such an approach should incorporate several key components.

First, strengthening the institutional capacity of public authorities is essential. This includes not only the provision of specialized training for procurement professionals but also the development of practical tools, standardized methodologies, and operational guidelines that enable procuring entities to design and evaluate circular procurement processes effectively.

Second, the systematic use of pre-procurement dialogues represents a critical instrument. Through these mechanisms, public buyers can engage with market actors at an early stage, allowing intermediaries to align public sector needs with supplier capabilities. This pro-

cess contributes to the formulation of realistic, innovation-friendly, and technically feasible tender specifications.

Third, tender documentation should explicitly incorporate circular economy criteria. These may include requirements related to extended producer responsibility, life-cycle assessment methodologies, minimum thresholds for recycled content, and product durability standards. The integration of such criteria enhances resource efficiency, reduces waste generation, and creates clear incentives for sustainable production.

Fourth, the establishment of robust monitoring and learning systems is necessary to evaluate the effectiveness of circular procurement practices. These systems should enable the regular assessment of environmental and economic outcomes, facilitate the identification of implementation gaps, and support continuous policy improvement through evidence-based feedback mechanisms.

Finally, a mediation-based framework for circular public procurement is fully aligned with Georgia's broader strategic objective of economic modernization. It also supports the country's commitments to sustainable development and policy approximation with the European Union, which remains a key priority in Georgia's ongoing process of economic and institutional integration.

Conclusion

Public procurement represents one of the most powerful policy instruments available to Georgia for accelerating the transition toward a circular economy. Through contractual obligations, technical specifications, and evaluation criteria, procurement decisions directly shape supplier behavior, product design, innovation dynamics, and patterns of resource use. In this sense, public procurement serves as a critical mechanism for translating circular economy principles from strategic policy frameworks into concrete economic practices.

At the same time, the effectiveness of this transformation depends on the strengthening of institutional capacity within procuring organizations. The ability to apply tools such as life-cycle costing, sustainability assessment methodologies, and environmental performance criteria is essential for embedding circularity into procurement processes.

Equally important is proactive market engagement. The early and systematic involvement of suppliers in procurement planning and innovation processes reduces uncertainty, accelerates technological adaptation, and enhances competition. In parallel, the development of robust monitoring and evaluation systems is necessary to measure environmental outcomes, ensure accountability, and demonstrate the long-term economic benefits of circular procurement.

When these processes are supported by effective mediation—facilitating collaboration among public institutions, private sector actors, technical experts, and civil society—public procurement evolves into a key driver of systemic economic transformation. Under such conditions, it not only reduces resource inefficiencies and environmental pressures but also fosters the development of new sustainable industries, promotes

technological modernization, and stimulates innovation aligned with European standards.

References:

1. Ministry of Environment Protection and Agriculture of Georgia (2021), Report on the identification of priority products (goods) selected for the initial implementation of sustainable public procurement, (In Georgian), <https://eiec.gov.ge/Ge/Projects/ViewFile/103>
2. Bratt, C., Hallstedt, S., Robèrt, K. H., Broman, G., & Oldmark, J. (2013). Assessment of criteria development for public procurement from a strategic sustainability perspective. *Journal of Cleaner Production*, 52, 309–316. <https://doi.org/10.1016/j.jclepro.2013.02.007>
3. Ellen MacArthur Foundation. (2015). It's Time for a circular economy. <https://ellenmacarthurfoundation.org>
4. European Commission. (2016). *Green Procurement. Simplifying Green Procurement with the EU Ecolabel*, <https://environment.ec.europa.eu>
5. EU-Georgia Association Agreement. (2014). *Agreement associating Georgia with the European Union and the European Atomic Energy Community*. <https://edit.wti.org/document/show/e9fddb57-9a0a-4443-ad3c-fa823445074d>
6. Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J. (2017). The circular economy: A new sustainability paradigm? *Journal of Cleaner Production*, 143, 757–768. <https://doi.org/10.1016/j.jclepro.2016.12.048>
7. Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation & Recycling*, 127, 221–232. <https://doi.org/10.1016/j.resconrec.2017.09.005>
8. OECD. (2015). *Going green: Best practices for sustainable procurement*. Paris: OECD Publishing. https://www.oecd.org/en/publications/going-green-best-practices-for-sustainable-procurement_3291acbf-en.html
9. OECD. (2019). *Public procurement for sustainable and inclusive growth*. https://www.ospi.es/images/documentos/archivos/Public_Procurement.pdf
10. Rainville, A. (2021). Stimulating a more circular economy through public procurement: Roles and dynamics of intermediation. *Research Policy*, 50(4), 104193. <https://doi.org/10.1016/j.respol.2020.104193>
11. Testa, F., Iraldo, F., Frey, M., & Daddi, T. (2012). What factors influence the uptake of GPP (green public procurement) practices? New evidence from an Italian survey. *Ecological Economics*, 82, 88–96. <https://doi.org/10.1016/j.ecolecon.2012.07.011>
12. EU4Environment (2021), “Towards a green economy in the Eastern Partner countries: Progress at mid-term”. <https://www.eu4environment.org/app/uploads/2021/11/Towards-a-green-economy-in-the-Eastern-Partner-countries-web.pdf>