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CIRCULAR APPROACHES: THE FUTURE OF PUBLIC PROCUREMENT

ABSTRACT

The future of public procurement is increasingly interconnected with the principles of circular economy as governments face pressing ecological, economic, and social challenges that deplete their financial resources. The adoption of circular public procurement practices represents a significant shift towards sustainability and offers significant benefits to government contractors, businesses, and citizens alike. This approach drives innovation and creates added value as it focuses on extending product lifecycles, reducing waste, and promoting resource efficiency throughout supply chains. If public entities prioritize circularity in their purchasing, they could enhance trust and reputation through the creation of a sustainable and resilient procurement ecosystem. This paper explores the concept of circular public procurement and how it could be implemented by public entities to advance sustainable development goals and ensure long-term socio-environmental benefits.

KEYWORDS: public procurement, circularity, sustainability, models, approaches

JEL: F18, H57, Q01

INTRODUCTION

The traditional linear economy model of ‘take, make, dispose’ leads the world to various escalating environmental challenges as natural resources deplete and pollution levels constantly increase. It has multiple disadvantages for modern economies and proved to be unsustainable in the long run. This realization has inspired a global shift towards more eco-orientated practices, with sustainable, circular, and green public procurements emerging as key strategies. Public procurement, which accounts for a significant portion of the expenses in modern states, is viewed as a powerful tool for the promotion of sustainable development and a driver for a market transformation towards more environmentally friendly practices.

Historically, public procurement policies have been cantered around cost-effectiveness and efficiency. The introduction of circular criteria into the processes has the potential to significantly alter market dynamics. If public contractors prioritize products and services that meet higher environmental standards, they could drive demand for sustainable innovations and incentivize companies to develop greener solutions.

Despite their numerous potential benefits, the implementation of circular public procurement also faces challenges related to lack of expertise, price concerns, and available market options. The current legal and regulatory frameworks do not always support the inclusion of circular criteria in the procurement process that necessitates policy reforms and capacity-building initiatives. International organizations and local governments play a key role as they have the

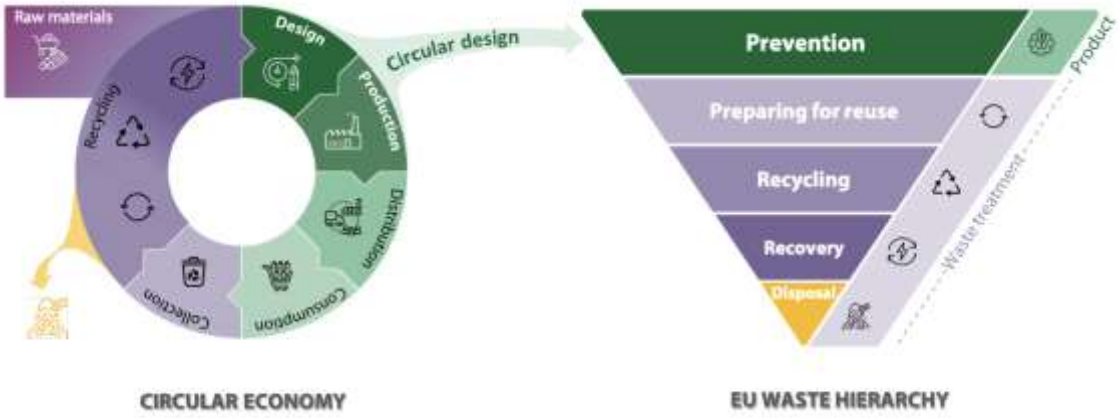
authority to enact legislation that encourages and even mandates the adoption of circular procurement practices.

1. PUBLIC PROCUREMENT IN A CIRCULAR ECONOMY

In contrast to the linear economy, the circular economy is an economic system designed to eliminate waste and encourage the continual use of resources. With the significant purchasing power at their disposal, public authorities could lead the transformation, set an example, and create demand for more sustainable products and services. Public procurement is a key tool that could be utilized to encourage the business to seek innovative solutions that could turn out to be more economically advantageous in the long term not only for the public contractors but also for the citizens and the environment.

The European Parliament (2023) defines the circular economy as a system that minimizes waste by reusing, repairing, refurbishing, and recycling existing materials and products. It aims to keep products and materials in use for as long as possible extracting maximum value from them while in use and then recovering and regenerating products and materials at the end of their life cycle. The benefits of a circular economy are diverse: 1) environmentally, it reduces waste, conserves resources, and decreases greenhouse gas emissions, 2) economically, it stimulates innovation, creates jobs, and enhances competitiveness by creating new business opportunities and reducing production costs, and last but not least 3) socially, it stimulates sustainable consumption patterns and could improve the citizens' quality of life by promoting products that are more durable and easier to maintain. The transition to a circular economy requires changes across the entire value chain - product design, business models, and consumer behaviour. Key strategies include eco-design, which focuses on the creation of products that are easier to repair, upgrade, and recycle, and new business models such as product-as-a-service, where companies retain ownership of products and provide services to customers. To facilitate this transition, comprehensive and continuous policies are of key importance. On a regional level, the European Parliament actively supports the circular economy as it adopts and implements regulations that set targets for waste reduction and recycling, incentives for businesses to endorse circular practices, and measures to raise consumer awareness about the benefits of sustainable consumption such as the adopted in 2019 Directive (EU) 2019/904 regarding Single Use Plastics.

Figure 1. Phases of the circular economy vs EU waste prevention



Source: ECA, 2023

Different definitions exist concerning Circular Public Procurement (CPP). A more general one is adopted by Oppen et al.: 'Circular procurement is the process in which a product, a service or a project is purchased according to the principles of a circular economy. In this process the technical aspects of the product are as circular as possible, taking maintenance and return policies at the end of the use period into account, as well as including financial incentives to guarantee circular use' (Van Oppen et al., 2018; p.20). The European Commission (EC) provides a more detailed definition: the CPP represents 'the process by which public authorities purchase works, goods or services that seek to contribute to closed energy and material loops within supply chains, whilst minimizing, and in the best case avoiding, negative environmental impacts and waste creation across their whole life cycle' (EC, 2017; p.5). Both support the principles of circular economy through prioritization of goods that are designed to be durable, reparable, and recyclable, as well as services that promote product life extension and resource efficiency.

It is essential to make a distinction between Circular Public Procurement (CPP), the focus of the present article, and another prominent type of procurement, Sustainable Public Procurement (SPP). While both have gained significant importance in recent years, a major line of differentiation lies in their respective scopes. Both types have a goal to promote sustainable priorities, but the SPP extends further than the CPP and includes not only environmental but also social considerations. SPP represents an effective way to reduce the environmental impact, but CPP has the potential to take sustainability further shifting the structure of the economy from a linear model to a closed loop, a more holistic approach that requires collaboration throughout the value chain to align common goals and empower stakeholders to actively engage (Gualandris et al., 2019; Thompson et al., n.d.). McLennan (2018) raises an interesting question - is CPP the new sustainable? The author's assertion that 'circularity itself is not an objective - it is a means for achieving sustainability' reveals the interconnected yet distinct nature of the two concepts.

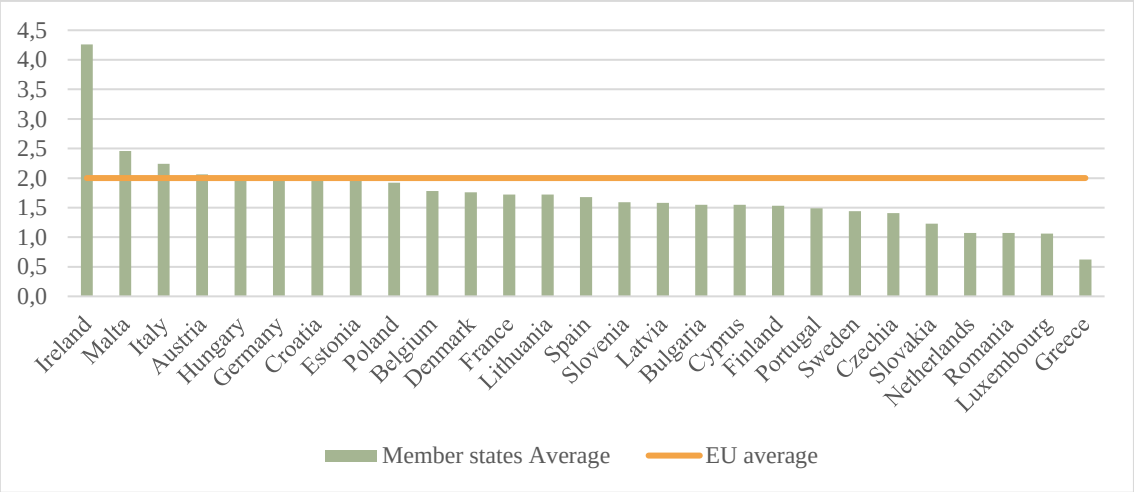
Various organizations have included CPP in their agenda – Circular Innovation Council, CircPro, Interreg Europe, The Chartered Institute of Procurement & Supply (CHIPS), CityLoops, etc. The European Union (EU) makes no exception and is a frontrunner in the promotion of CPPs. The new Circular Economy Action Plan (EC, 2020), part of the European

Green Deal, includes specific measures to ensure that public procurement practices support the transition to a circular economy. The focus is on those sectors that consume the most resources and where the potential for circularity is high such as electronics and ICT, batteries and vehicles, packaging, plastics, etc. The member states are encouraged to adopt circular procurement criteria and to provide guidance on how to implement such practices. The Circular Economy Action Plan also provides examples of sustainable practices (EC, 2020). For example, in the electronics and ICT sector 'two in three Europeans would use their digital devices for longer provided performance is not significantly affected'. The solution would be to promote business models that encourage product-as-a-service and eco-designs. Regarding plastics, by 2050 they could account for 20% of oil consumption and 15% of greenhouse gas emissions, with plastic consumption expected to double in the next 20 years. The Action plan advocates for substitution of the single-use products wherever possible with durable, reusable alternatives.

2. ADVANTAGES AND DISADVANTAGES OF CPP

CPPs are in line with the United Nations Sustainable Development Goals as they offer a wide range of benefits that enhance both operational efficiency and sustainability for organizations. A primary advantage of CPPs is the reduction of costs in both the short and long term through the reuse, refurbishment, and recycling of materials, which streamlines processes and minimizes waste management needs. They address environmental challenges such as the depletion of scarce raw materials and broader environmental degradation and thus contribute to the preservation of natural resources and environmental protection. This approach brings greater transparency to the supply chain and allows organizations to more effectively track the origin and lifecycle of materials. CPPs also help organizations generate more added value and become future-proof through cost reductions, securing material supply, enhancing resilience to market fluctuations, and fostering a more dependable supply chain. A quick look at one of the indicators from the four groups that are set to monitor the circular economy transition advancement reveals a significant potential that could be further utilized specifically for the added value of the circular economy (EC, 2018).

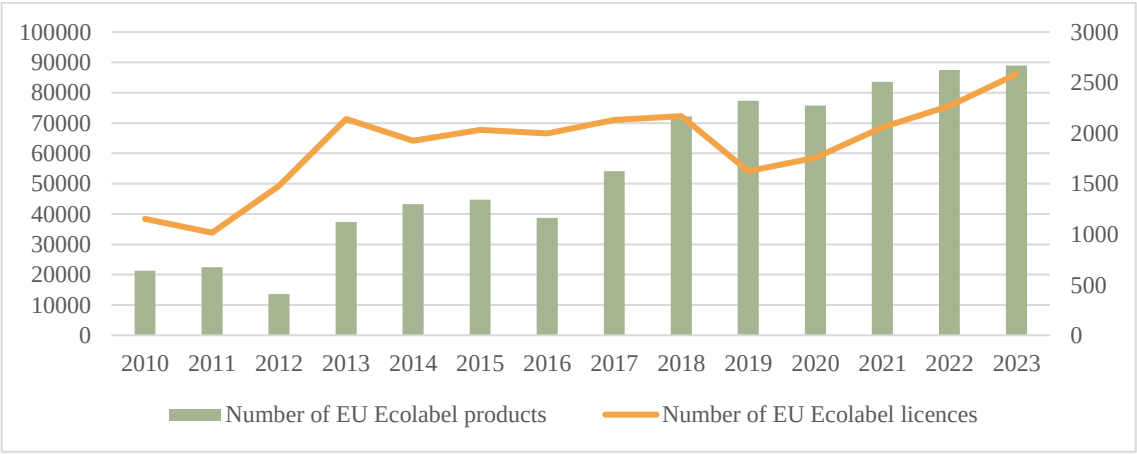
Figure 2. Private investment and gross added value related to circular economy sectors as % of GDP (2012-2021)



Source: author's calculations based on Eurostat, 2022

The adoption of circular practices enhances the organizational reputation and market distinction by demonstrating a commitment to sustainability, attracting customers, investors, and partners who value environmental responsibility. A notable example of a such commitment and positive trend is the EU Ecolabel. A world-renowned scheme, it facilitates Europe's shift towards a circular economy as it promotes sustainable production and consumption. It sets transparent ecological criteria that allow consumers to make informed choices without sacrificing product quality. The EU Ecolabel also incentivizes manufacturers to design durable and repairable products, and this fosters innovation and resource conservation. This label is a key element of the EC's Sustainable Consumption and Production and Sustainable Industrial Policy action plan and is referenced in the 2020 Circular Economy Action Plan (EC, n.d.).

Figure 3. Evolution in EU Ecolabel products and licenses



Source: author's calculation based on EC, 2024

CPPs support the modernization of business models as they promote innovation and adaptation to changing market demands by extending product lifespans and reducing procurement frequency. By expanding sustainable procurement activities and prioritizing social and

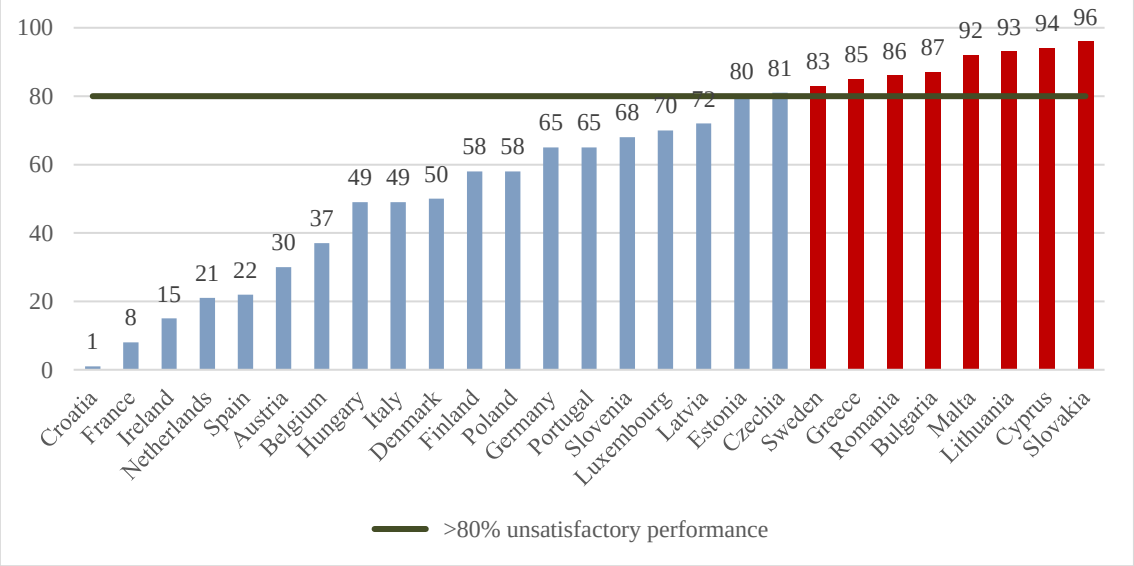
economic benefits, CPP drives innovation, builds capacity in both public and private sectors, shifts markets independently of legislation, and aligns with policy objectives such as fiscal cautiousness, greenhouse gas emissions reduction, and biodiversity protection, all while generating economic opportunities (CHIPS, 2024; FCM, 2023).

Despite their multiple potential benefits, the implementation of CPPs also faces several challenges. The lack of awareness and understanding of circular economy principles among procurement officials is a major one. Many public procurement processes are still heavily influenced by traditional linear economic models, and transitioning to a circular approach requires significant changes in procurement criteria and practices (Rainville, 2021). There are also practical challenges related to the availability and cost of circular products and services – sometimes circular options may have higher upfront costs, which could be a barrier for public authorities that operate under tight budget constraints. To be able to consider the long-term cost savings and environmental benefits that CPP could offer a specific expertise is required.

A step towards the successful transition is the implementation of the concept of 'Most Economically Advantageous Tender (MEAT)' in the EU procurement practice with Directive 2014/24/EU. It is a procurement evaluation method used by contracting authorities to determine the best value for money from tenders. Rather than selecting solely based on the lowest price, MEAT allows for the consideration of various qualitative and technical criteria that reflect the overall benefits of a tender. The two additional options to be included in the evaluation are directly connected with the circular economy model: cost, using a cost-effectiveness approach such as life cycle costing or the best price-quality ratio (FELP, 2023).

Many member states successfully apply the MEAT criteria, but as of the latest available data from the Single Market Scoreboard, there is still much room for improvement.

Figure 4. Award criteria % based on price alone, 2022



Source: EC - Single Market Scoreboard, 2023

Despite the drawbacks, there are examples across Europe, where the CPP approach is successfully adopted. The Norwegian pilot (Boessenkool, 2022), led by the Norwegian Agency for Public and Financial Management (DFØ), showcases a proactive approach to furniture procurement, emphasizing reuse and redesign to mitigate waste. The initiative was undertaken in line with the European Environmental Bureau that underscores the alarming scale of waste generation in the EU, with approximately 10 million tonnes of furniture discarded annually by businesses and consumers, a significant portion of which ends up in landfills or incinerators. DFØ's adoption of circular criteria in its procurement process, including prioritizing longevity, closed material loops, and compliance with environmental regulations, confirms its commitment to sustainability. The key lesson from DFØ's experience is the importance of early and thorough planning that includes setting quantified reuse goals, securing leadership support, and engaging suppliers well in advance.

Another notable example is the 'The City of Helsinki's Roadmap for Circular and Sharing Economy' (Urban Environment Division, 2020). The city conducts procurements that exceed 2 billion euros annually and equal to around 40% of its total expenses. Given the substantial volume, the integrations of circular economy criteria could significantly mitigate material consumption, waste generation, transportation, and associated emissions. The city governance plans foresee from 2025 on all procurements to include circular economy criteria. In Seville, Spain, the city focused on improving the recycling quality of construction and demolition waste (CDW) and enhancing efficiency in bio-waste collection. Through a comprehensive procurement strategy, Seville promoted circular economy principles, collaborated with various stakeholders to develop circular instruments, and signed the European Circular Cities Declaration. Workshops and seminars facilitated knowledge-sharing and stakeholder engagement in the construction and demolition sector to foster a circular economy approach in CDW management and contribute to sustainable resource utilization and waste reduction in the city (CityLoops, 2023).

Despite the advantages that a circular economy could provide the transition process is slow in the EU. As per the European Court of Auditors (2023), despite the allocation of the purpose over 10 billion euros for the period of 2014-2020, neither the EC nor member states didn't effectively target investments towards circular product and production process design. Instead, a significant portion of EU funds went to waste management, which has limited potential for reducing environmental impact. Although there's increased emphasis on the circular economy in the 2021-2027 programming period, member states still have the option to allocate funds predominantly to waste management rather than focus on its prevention through circular design.

3. MODELS AND APPROACHES TO CPP

Models and approaches to CPP involve diverse strategies aimed at the integration of the principles of a circular economy into the procurement processes. These models emphasize the importance of waste reduction, promotion of reuse and recycling of materials, and shift focus from product ownership to service-oriented solutions. CPP could be implemented through various frameworks, such as the Green Public Procurement (GPP) and the Innovative Public Procurement (IPP), which guide municipal authorities in their efforts to reshape procurement

practices to support sustainability goals. A review of three different approaches and models is to illustrate the various methods by which public contractors could effectively integrate circular economy principles in the procurement process.

Van Oppen et al. (2018) in their book 'Circular Procurement in 8 Steps' offered a comprehensive guide that involves integrating circular economy principles into the procurement process to promote sustainability and resource efficiency. The authors believe that there is no single solution to achieve CPP but rather a set of principles and practices that could be tailored to individual organizational needs. The eight steps that are proposed are as follows:

1. **Circular procurement: why and what?** This step involves defining the purpose and significance of circular procurement within an organization. It includes establishing the motivation behind the adoption of circular practices and determining what circular economy means for a specific procurement project.
2. **Internal organization and alignment**: engagement of internal stakeholders across different departments to ensure alignment with the circular procurement process. This step focuses on getting buy-in from key decision-makers and employees to support the transition to circular practices.
3. **Formulating your question**: definition of the scope of the procurement assignment and specification of the requirements. This step involves determining the objectives, specifications, and criteria for the procurement project to ensure circularity is integrated into the process.
4. **Collaboration**: fostering collaboration with external partners, suppliers, and other stakeholders to promote circularity in the process. It emphasizes the importance of working with a diverse range of partners to achieve circular goals and close the loop in the value chain.
5. **Tendering procedure**: development of a procurement procedure that encourages suppliers to provide circular offers while maintaining a balance between competition and collaboration. The focus is on creating a procurement process that incentivizes circular solutions and promotes innovation among suppliers.
6. **Measuring and assessing circularity**: implementation of methods to objectively measure and evaluate the circularity of products and services being procured. There should be established metrics, indicators, and assessment tools to evaluate the level of circularity in procurement activities.
7. **Securing circularity**: ensure the long-term sustainability of circular ambitions by exploring revenue models and proposing circular contracts. Strategies need to be developed to guarantee that circular commitments from suppliers are met and maintained throughout the contract period.
8. **Managing circular contracts**: monitor and manage the implementation of contracts to ensure continued use and success. This step focuses on overseeing

the execution of circular contracts, tracking progress, and addressing any challenges or opportunities that arise during the contract period.

According to the authors, the eight steps are not linear but rather iterative and cyclical. Each project and procurement process build on previous experiences, leading to continuous improvement in the organization's circularity efforts.

Another view on CPP implementation is offered by The Circular Procurement Guide (FCM, 2023) issued as part of the program of the Federation of Canadian Municipalities. It outlines five core circular business models that serve as strategies for the achievement of CPP goals. The first model includes a 'Sharing platform' and focuses on enabling the shared use of products or assets among multiple users thus reducing the need for individual purchases. It emphasizes increasing the utilization of products by distributing them among many users. The second one is the 'Product as Service' model where public contractors instead of owning a product, purchase its function or value. Examples may include office copiers, lighting, computers, and mobile phones, where ownership, repair, and maintenance remain the supplier's responsibility. The third model is called 'Product Life Extension' and involves purchasing from suppliers that support repair, refurbishment, or remanufacturing to extend a product's lifetime. It also includes buying products designed for easy disassembly or with solid warranties to facilitate product life extension. The 'Circular Supplies' model relies on inputs made from sources that are renewable, easily recyclable, or recoverable. Purchasing from suppliers that use recovered or renewable materials in their products and assets promotes resource and product recovery. Finally, the fifth model 'Resource Recovery' concentrates efforts on finding ways to recover materials from products at the end of their useful life and converting them into a resource that could be reintegrated into another production cycle. Examples include recycling and composting, with an emphasis on managing recovery locally.

The Guide further addresses how circularity could be implemented in the procurement process that involves three distinct phases: pre-purchase, purchase, and post-purchase. Each phase presents an opportunity to include circular considerations and prioritize long-term thinking across the entire product life cycle as market engagement is essential in advancing the circular economy within procurement. It involves open communication and discussions with suppliers to understand the organization's needs, uncover opportunities and barriers, and gain insight into the market's capabilities to respond to circular procurement requirements. Market engagement should occur in the pre- and post-purchase phases, to allow for pre-competitive conversations and knowledge sharing to develop circular criteria based on outcomes.

Table 1. Implementation of circular considerations in procurement phases

Procurement Phase	Description	Circular Considerations
Pre-Purchase Phase	This phase offers the most significant opportunity to optimize circularity within procurement.	Buyers examine all stages of the product life cycle and develop procurement criteria; Assess whether a purchase is necessary and explore a circular business model;

Procurement Phase	Description	Circular Considerations
		Engage the market to communicate circular ambitions, learn about business developments, and understand procurement priorities.
Purchase Phase	In this phase, findings from the pre-purchase phase are incorporated into the procurement approach.	Incorporate product specifications and outcome-based criteria; Focus on reducing material usage, increasing manufacturing efficiency, extending product life, and optimizing reusability and recyclability; Consider specifications and criteria across supplier selection, products and accessories, servicing, delivery, maintenance, and end-of-life impacts.
Post-Purchase Phase	This phase relates to how products can be better used, maintained, and managed after their initial life and at end-of-life.	Monitor product use and perform regular maintenance; Refurbish older products and ensure warranties and responsible manufacturing; Explore opportunities for reuse by other organizations. Extend product life span and reduce the need for new products.

Source: adapted from FCM, 2023

The EC provides guidance and best practices for implementing CPP within public organizations as a part of its commitment to emphasize the importance of transitioning from a linear economy to a circular economy. The approach is different as the models are divided into three major levels: system, supplier, and product.

Table 2. CPP models

System Level	Supplier Level	Product Level
Product service system	Supplier take-back system	Materials in the product can be identified
Public Private Partnership	Design for disassembly	Products can be disassembled after use
Cooperation on sharing/reuse	Reparability of standard products	Recyclable materials
Rent/lease	External reuse/sale of products	Resource efficiency and Total Cost of Ownership
Supplier take-back systems.	Internal reuse of products	Recycled materials

Source: EC, 2017, p.6

The organizational policy of implementation includes the necessity of creating a dedicated CPP policy or integrating circular economy principles into existing SPP policies to ensure sustainability is a priority within the organization. The strategic approach is significant since

the process is not limited to the purchase only but encompasses all the stages before and after the acquisition of products, works, or services. The EC also focuses on market engagement and highlights the benefits of collaboration with suppliers, sharing insights, and creating a pool of good practices to accelerate the transition. The evaluation is another critical phase in the CPP process. A comprehensive assessment is needed for their effectiveness and impact thus setting performance targets and monitoring are essential to ensure that organizational goals related to CPP are met.

CONCLUSION

With the growing global recognition of the importance of the circular economy, it is the future of public procurement to embrace its principles and approaches. The transition could offer significant advantages that not only address environmental challenges but also enhance economic efficiency and social benefits. The strategic mindset could considerably enhance the adoption and implementation of coherent regional and local policies and practices by public contractors. They could result in reduced waste, promote resource efficiency, and foster innovation and added value across supply chains. Market engagement is the key to knowledge sharing and acceleration of the transition to circularity, while clear procurement requirements and robust evaluation mechanisms could ensure that circular objectives are effectively met.

Circular procurement is gradually adopted across the world and the EU, reflecting a fragmented yet promising shift towards sustainable practices. Despite the varying levels of implementation, the integration of circular procurement principles into public purchasing processes marks a significant advancement in addressing various challenges and prioritizing long-term sustainability over short-term gains. However, the adoption remains inconsistent, with some regions and countries leading the way and a lot of others to follow up. As public procurement continues to evolve and embrace circular approaches toward sustainable development goals, national governments could build a strong resilience against global challenges and contribute to a more sustainable future.

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