Regional guidebook on circular procurement

GREECE

2020

Region of East Macedonia and Thrace

CircPro
Interreg Europe

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Introduction

CircPro Project

The project CircPro (Smart Circular Procurement)[1] aims at promoting the transition to a more circular economy related to the national and regional decision-making by increasing the implementation of the circular procurement. The project is funded by Interreg Europe Program (European Regional Development Fund) and includes 11 partners from 9 EU regions and Norway.

Main barriers that hinder the systematic implementation of the circular procurement are in general the lack of knowledge and expertise, any potential procedural and legal barriers, and procurers´ preconceptions about using, as well as lack of, recycled materials. CircPro tackles the challenge to analyze whether Circular Economy (CE) principles and Circular Procurement (CP) criteria could be included into the regional Policy Instruments as a general principle or as an award criterion to encourage applicants to systematically implement CPs.

The project also focuses on the exchange of experience within and between regions, at regional level by interacting with key stakeholders (procurers, suppliers, Academia, decision-makers and other valid parties) in regional stakeholders groups, and at interregional level by organizing interregional stakeholders meetings for fostering the interregional learning.

Regional Guidebooks

The scope of the Regional Guidebooks is to raise awareness of CP among regional procurers, suppliers and policymakers about the:

- definition of CP
- types of CP
- benefits of CP

This is achieved through the presentation of brief information on legislative and other initiatives related to CP on the EU, national and regional levels. Moreover, the Guidebook gives procurers and suppliers concrete ideas and examples (local and learned from project partners) on how to implement the CP in East Macedonia and Thrace Region.

Finally, the Regional Guidebook aspires to share information on East Macedonia and Thrace regional developments with other CircPro partners to facilitate interregional learning.

[1] For further information https://www.interregeurope.eu/circpro/

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1. Introduction to circular economy and the role of public procurements

1.1 Circular economy

On the assumption that the current economy is based on the take-make-waste extractive industrial model, circular economy represents a transformative trajectory that follows three principles: design out waste and pollution; keep products and materials in use; regenerate natural systems (also according the European Green Deal). Transition from linear to circular economy is not immediate though, it rather requires full systematic change throughout value chains and innovation not only in technologies, but also in organization, society, finance trends and policies. Circular economy focus is on resource flows more than on products, as it comes out from the policy pathway that has eventually brought to the definition of a circular economy strategy and to its transposition into a circular economy package at European level.

Circular economy approaches design out waste and typically involve innovation throughout the entire value chain, rather than relying solely on solutions at the end of life of a good. Possible approaches include: reducing the quantity of materials required to deliver a particular service; lengthening products' useful life; reducing the use of energy and materials in production and use phases; reducing the use of materials that are hazardous or difficult to recycle in products and production processes; creating markets for secondary raw materials; designing products that are easier to maintain, repair, upgrade, remanufacture or recycle; developing the necessary services for consumers in this regard; incentivizing and supporting waste reduction and high-quality separation by consumers; incentivizing separation, collection systems that minimize the costs of recycling, and reuse; facilitating the clustering of activities to prevent by-products from becoming wastes; encouraging wider and better consumer choice through renting, lending or sharing services as an alternative to owning products, while safeguarding consumer interests.

1.2 Green public procurements

At the very end, the idea behind green economy and circular economy is quite the same, on the assumption that the environment has natural limits in terms of how much it can provide and absorb, with a basic difference though. Instead of accepting the linear model as it is and trying to replace polluting elements with greener ones, circular economy looks at innovating production and consumption models in their deployment.

In the EU Action Plan for the Circular Economy 2015 public procurement is recognized as a key driver in the transition towards the circular economy, and

it sets out several actions which the European Commission will take to facilitate the integration of circular economy principles in Green public procurement (GPP). These include: emphasizing circular economy aspects in new or updated sets of EU GPP Criteria, supporting a higher uptake of GPP among European public bodies, and leading by example in its own procurement and in EU funding.

In the new Circular Economy Action Plan 2020 public procurement maintains its importance in shaping sustainable and circular consumption in the public sector that represents around 14% of EU GDP. In addition to guidance and dissemination activities of good practices, European Commission is planning to propose mandatory GPP criteria and targets in sectoral legislation together with phasing-in mandatory reporting on GPP that will come into effect as of 2021. Current EU approach clearly indicates GPP as the principle instrument implementing circular procurement. However, the complex format of the circular procurement requires the inclusion of innovation policy dimensions that would stipulate the creation of new circular solutions.

1.3 Circular public procurements

- The objective of Circular Public Procurements (CPP) refers to greening the public procurement in accordance with the principles of circular economy through the role of public authorities by promoting the purchase of goods, works and services that:
- have a reduced environmental impact;
- contribute to create closed material and energy loops within supply chains;
- minimise or avoid negative environmental impacts and waste creation throughout the whole life-cycle;
- promote the replacement of products by services2.

As such CPP can significantly stimulate demand for products and services that are made according to circular economy principles and support the new and innovative circular business models and related networks. Therefore, it can be seen as a strategic instrument that plays important role in the transition towards circular economy.

CPP has been realized in different forms and different sectors (e.g. construction, waste management, food and catering as well as certain product groups such as furniture textiles). It is possible to define different procurement categories or approaches to circular procurement. One is clear, a circular procurement process has a broader scope than just placing the order for a product. The focus of the circular procurement approach can shift from better quality in circular terms to new and innovative products and services, new business models and finally to the creation of circular ecosystems. The choice of the

[2] https://www.circular-europe-network.eu/library/thematic-guidance-material/roadmap-circular-public-procurement/#1524821004181-d984db0a-b554

focus in the circular procurement depends on the procurement strategy, ambitions and priorities of the authority. Therefore, it is important that any public organization has defined its strategic view and ambition concerning the circularity and how this can be integrated into existing procurement practices before it starts with circular procurements. The procurers should also understand the critical points within the procurement process and what influence the public authority would like to have on bidders. This helps to define the scope of the procurement and choice of the procurement approach they would like to follow.

The approaches to circular public procurement can be outlined as follows (based on CIPRON, 2017) (Table 1):

1. Procurement of improved products and services by adding GPP-based "circular criteria"

Circular procurement can be promoted by adding "circular criteria" (e.g. criteria for recyclability, use of recycled materials, reuse, etc.). This means buying circular products and services, such as paper made from 100% recycled material. Some of these criteria that support circular elements can be found in the GPP criteria palettes or eco-labels. This may be considered the simplest way or the first phase of circular purchase.

2. Procurement of new and innovative products, services and materials promoting circular economy-based business

Public procurement could provide conditions that stimulate innovative solutions/products and create new business models and markets for new products. Such products are remarkably better in terms of recyclability, recycled materials, disassembly, long lifespan, etc. These are products/services that are commercialized but have not been on the market for a long time, or products that would be developed as a result of the procurement process. This approach highlights the procurer's ability to conduct an innovative procurement process. Examples of such products are textiles with 100% recycled content or building components made of recycled plastic.

3. Procurement of services and new business concepts

This approach involves more performance-based procurement and procurement of services instead of products. Such procurements give the producers/service providers the possibility to retain greater control over the items they produce/offer and the embodied energy and materials, thus enabling maintenance, reconditioning and recovery. The procurers usually benefit from this type of procurements, as they only pay for the service they require and use, and often receive a better service as the producer/service provider has a greater interest in providing a product that lasts. Examples of such new business models are product-service systems, leasing concept, shared use, buy-per-use and buying and selling back. More traditional examples include furniture leasing and car hiring. New thinking is needed for buying services instead of products, e.g. lighting for the next 30 years instead of lamps.

4. Procurement promoting industrial symbiosis and circular ecosystems

This approach addresses the investments and creation of specific circular co-operation networks, industrial symbiosis schemes and other circular ecosystems that call for commitment from different stakeholders. Circular ecosystems could be efficient platforms in supporting closed loops and creating networks in which the waste or excess energy from one actor would be used as a raw material/input for another. Examples include buses using locally produced bioenergy, or construction sites that utilise waste material from other processes.

Table 1. Four approaches towards circular public procurements

Procurement including GPP based "circular" criteria	Procurement of new "circular" products and materials	Procurement of services and new business concepts	Procurement promoting circular ecosystems
Better quality products	New products	Product service systems	Circular ecosystems
Improved products and services are procured by adding GPP and circular criteria to the tender competition: Prevention of waste Recyclability Share of recycled materials Reusability Avoidance of certain hazardous chemicals	New innovative circular products are procured and / or developed by innovative public procurement: Products that are significantly better in terms of recyclability, share of recycled materials, long lifespan, disassembly, etc.	Product-service systems are procured, and new approaches are applied that promote circular aspects: Combined product service business models Leasing concepts Renting Shared use Buy-per-use	Procurement stimulates the development of industrial symbiosis and other circular ecosystems: Develop or support closed loops Support industrial symbiosis based collaborative network Create new networks and alliances
Examples: Paper products (e.g. copying paper made from 100% recycled paper fibres) Office IT equipment and other ICT devices (e.g. avoidance of hazardous substances, product life-time extensions) Furniture (e.g. providing easy-to-disassemble,	Examples: Building components of recycled materials Textile products made of recycled materials Furniture (e.g. redesigned, reused, refurbished furniture and related services to prolong the life-time)	Examples: Leasing furniture instead of buying it Leasing football stadiums (artificial turf) instead of building and owning them Additional services that enable the prolonged life-time of used products and services	Examples: Buses running by locally produced biogas Locally managed and produced biomass based renewable energy production systems Construction projects with closed material loops

repairable and recyclable furniture) Cleaning products and services (e.g. avoidance of hazardous substances) Packaging (e.g. degrease the quantity of packaging)	Building and construction (e.g. use of recycled asphalt, circular reconstruction of buildings)	

Source: CIPRON, 2017

2. The framework for green and circular public procurements

2.1 EU legislation

The existing framework for green procurement is primarily based on the EU Directives on Public Procurement, in particular Directive 2014/24/EU[3] and Directive 2014/25/EU[4], as well as on the green public procurement criteria periodically adopted through specific acts designed to make it easier for public procurers to purchase goods, services and works that have a reduced environmental impact. The criteria are formulated in such a way that they can, if deemed appropriate by the individual authority, be (partially or fully) integrated into the authority's tender documents with minimal editing. Before publishing a contract notice, contracting authorities are advised to check the available offer of the goods, services and works they plan to purchase on the market where they are operating. The criteria are split into exclusion grounds,[5] selection criteria,[6] technical specifications and labels,[7] award criteria[8] and contract performance terms and conditions[9].

The criteria can be distinguished in two types:

(i) core criteria — which are designed to allow the easier application of GPP, focusing on the key area(s) of environmental performance of a product and aimed at keeping administrative costs for companies to a minimum;

(ii) comprehensive criteria — which take into account more aspects or higher levels of environmental performance, for use by authorities that want to go further in supporting environmental and innovation goals.[10] In addition to any legal and regulatory acts, there is a number of supporting instruments, such as the new edition of the "Buying Green!" Handbook that has been specifically designed to explain how to better integrate environmental considerations into public procurement procedures.[11]

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[3] Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC.

[4] Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal service sectors and repealing Directive 2004/17/EC.

5 EU Directive 2014/24, Art. 57.

[6] EU Directive 2014/24, Art. 58, selection criteria are divided into: a) suitability to pursue the professional activity; (b) economic and financial standing; (c) technical and professional ability.

[7] EU Directive 2014/24, Artt. 42-43.

[8] EU Directive 2014/24, Artt. 67-68.

[9] EU Directive 2014/24, Artt. 70-73.

[10] At the following link you could find the complete list of GPP criteria in place at European level: http://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm.

[11] The third edition of Buying Green! – A Handbook on green public procurement is available at the following link: http://ec.europa.eu/environment/gpp/buying_handbook_en.htm. The

2.2 National legislation

The main tool for integrating the principles of the circular economy into public procurement is Law 4412/2016 “Public works, supply and service contracts”. In particular, Article 86, describes the criteria for awarding contracts in the EU, and states that the award of public contracts can be based on the most economically advantageous offer on the basis of price or cost, using a cost-effectiveness approach, such as life-cycle costing, in accordance with Article 87.

Life-cycle costing takes into account:

- the costs associated with the acquisition;
- the cost of use, such as for the consumption of energy and other resources/sources;
- maintenance costs;
- end-of-life costs, such as collection and recycling costs;
- the costs due to external environmental factors linked to the product, service or project over their life cycle, where their economic value can be determined and verified; such costs may include the costs of greenhouse gas emissions and other emissions, as well as the costs of mitigating climate change.

In Greece, the vast majority of public works contracts are awarded on the basis of the most economically advantageous price-based offer. According to the Union of Engineers of Public Works Contractors, in the few cases where the award criterion was the most economically advantageous offer based on price or cost, using a cost-effectiveness approach, such as life-cycle costing, there were problems with objections to the declaration, evaluation practices and selection of contractors, thus delaying the whole process or even cancelling them several times.

The misapplication of this criterion of award of the contract begins with the lack of information and substantive dialogue between the Contracting Authorities the market regarding the new concepts such as life- cycle, incorporating the cost of acquisition, reuse-recycling of resources, the cost of gas emissions, the use of alternative energy sources, methods for mitigating climate change, etc. Also, the inadequacy of the technical specifications to monitor current developments contribute to the situation.

handbook includes: guidance on how environmental considerations can be included at each stage of the procurement process in the current EU legal framework; practical examples drawn from contracting authorities across EU Member States; sector specific GPP approaches for buildings, food and catering services, road transport vehicles and energy-using products.

2.3 National Strategy for Circular Economy

The Economic Policy Government Council is responsible for the formulation of interministerial policies and decision-making, in matters relating to the economic and development policy of the country. Within the framework of its responsibilities, it adopted the public policy framework for the Circular Economy as a key element of the country's Development Strategy, putting the National Operational Plan 2018-2019 into public debate. The actions, provided for in the National Operational Plan 2018-2019, include interventions in the fields of:

- Regulation and legislation to strengthen the circular economy and remove bureaucratic obstacles.
- Financing and incentives to strengthen the Circular Economy.
- Improving knowledge and linking entrepreneurship and the social economy with technological innovation.
- Strengthening the governance of the Circular Economy Plan and accelerating processes.

In the light of the above basic principles, the Ministry of Environment and Energy proceeded to a public consultation of the plan for the National Strategy for the Circular Economy, inviting citizens, productive and social actors to participate in the public electronic consultation on the Project, in order to submit their proposals. The public consultation process ended on 26 June 2018.

The Interministerial Committee on Circular Economy operates in parallel with the National Council for Circular Economy, which brings together productive actors, with the common objective of a realistic plan of private and public sectopolicies to transform the Greek economy towards cyclical standards, with a specific timetable of individual targets by June 2020.

The above process contributed in the formulation of the National Strategy for Circular Economy in 2018. Its key point is the recognition that the circular economy in Greece can fuel a qualitative leap in the economy, which will constitute a growth transformation. The Circular Economy can contribute to the creation of new jobs, to fuel small and medium-sized entrepreneurship, the creation of new professions and the social economy, which is still at a very low level in Greece.

The pillars of the National Circular Economy Strategy are:

1. **Sustainable Resource Management**, with the main aims of increasing their efficiency, re-establishing value chains, rational waste management, reuse of buildings and reuse of water or the collection of rain and spring waters.
2. **Strengthening Circular Entrepreneurship**, by encouraging the idea of ecodesign, production of long-lasting products, repair, renovation, reuse, restoration, promotion of industrial cohabitation (clusters,

innovation parks, business incubators, knowledge-information platforms), promotion of innovative entrepreneurship models (e.g. sharing economy), support for the organic economy, **promotion of green and circular public procurement,** support for the use of secondary materials.

3. **Circular Consumption,** with full information of citizens regarding exploitation of eco-label and other incentives, sustainable food consumption (deterrence of disposal, urban cultivation), prevention of excessive use of resources (food-drinks, clothing, packaging, EEE), prevention of waste production through preparation for reuse, repair and repair, control of retail e-commerce and ultimately the promotion of services of use instead of the supply of products.

2.4 National Operational Action Plan for Circular Economy

The European Commission has already established green criteria which can be used, inter alia, in the process of drawing up notices and competitions. The European Commission has set examples of criteria for product and service groups which - due to their impact on the environment or environmental improvement margins, or their economic impact or political or exemplary functioning - have been judged as the most suitable for "greening-integrating of the environmental dimension" within the framework of the GPP.

Greece's performance in the supply of a circular economy is very low in terms of both design and implementation. In view of all the above, the Ministry of Environment and Energy recognizes the need that in order to achieve effective implementation of the GPP, a National Action Plan is required, taking into account:

- the procurement needs of the public sector;
- the readiness of the Greek market and
- potential environmental impacts.

Indicative areas, where public policy actions are required, emerged as follows:

- A series of institutional interventions to strengthen the circular economy, modular design and open innovation;
- Prioritising economic, social and environmental criteria. Definition of indicators for the assessment of the circular economy model,
- Facilitation business initiatives of circular economy and industrial symbiosis (reduction of administrative costs, public procurement promotion, eco-industrial parks, creation of an appropriate regulatory framework and adaptation of the existing one)
- Smart financial instruments with aid and tax relief,
- Making use of public investment, NSRF, Investment Bank, Juncker package and other Funds and resources;

- Institutionalization of open licenses, promotion of open technologies, exploitation of open innovation products- especially in academic institutions and public administration;
- Creation of databases and use of information to establish indicators for the assessment of the circular economy in the different sectors;
- Incentives for the development of social entrepreneurship, co-operation and social economy in areas of reuse of resources and materials (eco-industrial clusters, patent pools),
- Policies towards the 'smart factory', which will be innovative, high-tech, green, modular, and possibly digitized,
- Communication campaign to raise public awareness alongside incentives.

Under the national Operational Action Plan for Circular Economy the following Action is under development in the field of public procurement legislation:

Action 1.2: Preparation of a National Action Plan for the promotion of Green Public Procurement and national policy making.

The National Action Plan is processed by an existing interministerial working group and will be adopted by a joint decision of the Ministers for Economic Affairs and Development and Environment and Energy. The plan calls for the greening of 18 product groups and the link to with the circular economy by adding circular criteria.

Furthermore, work on Circular Public Procurement is underway in parallel with the framework of the partnership for the Circular Economy (EU Urban Agenda), involving 6 major urban centres (Oslo, The Hague, Prato, Porto, Kaunas and Flemish), 4 States (Finland, Poland, Slovenia, Greece), the European Commission (DG REGIO, ENV, CLIMA, RTD, GROW etc.) and some organizations (CEMR, EUROCITIES, URBACT and EIB). The aim is the policies of the Circular Economy in the Urban Centers. In the Greek working group, the Ministries of Development and Environment and Energy participate.

2.5 National Action Plan for the Promotion of Green Public Procurement (GPP)

The Greek government recently completed the public consultation of the "National Action Plan for the Promotion of Green Public Procurement (GPP)" which was prepared by a special inter-ministerial committee. According to the approach adopted, Green Public Procurement is at the crossroads of the National Strategy for Public Procurement, the National Strategy for the Circular Economy and the National Action Plan for energy saving-energy upgrading of public buildings.

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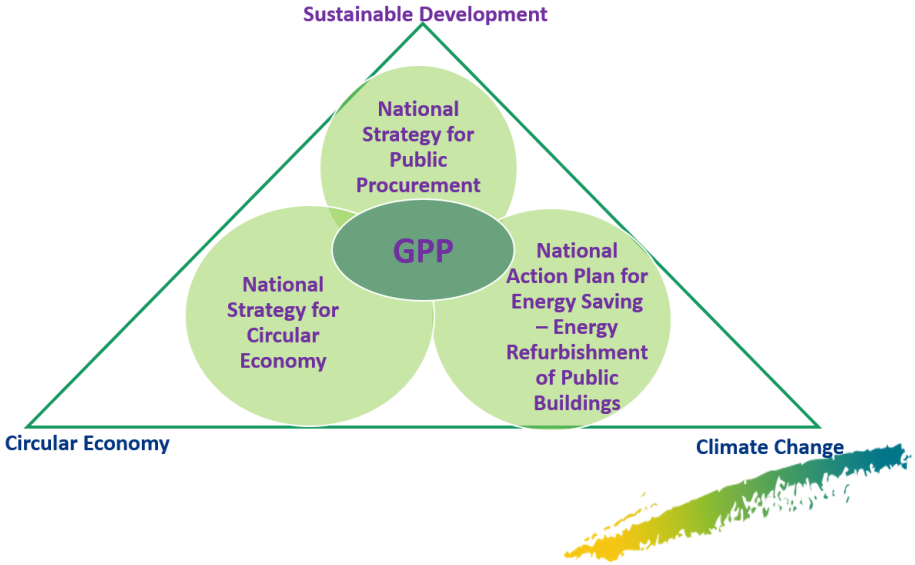


A. General Objectives of the National Action Plan

As far as the promotion of the Green Public Procurement (GPP) is concerned, the General Objectives of the National Action Plan that have been set for are the following:

1) Establishment and implementation of an elementary level of adoption of green criteria in public procurement of products, services and projects.
2) Gradual increase of the supply of green products and the provision of green services during the next three years in certain sectors of goods, services and projects.
3) Wider integration of product life cycle cost estimation in Green Public Procurement.
4) Dissemination of the environmental and economic benefits brought by the GPP that aims at informing the citizens.
5) Active participation of stakeholders, such as contracting authorities and economic operators, in the GPP process.
6) Monitoring the achievement of the objectives and updating them for the optimal implementation of the Action Plan and its adaptation to the national, European and international data in this field.

B. Market Research

Concerning that the uptake of GPP requires a step-by-step approach as well as the selection of a small number of product and service groups on which the GPA will initially focus, one of the methods proposed by the European Union for the National Action Plan is the following: fifteen product or service categories have been selected, seven of which are binding and the rest are non-binding. Particularly, the product and service categories that are selected are the following:

1. Photocoping and writing paper.
2. Computers and monitors.

3. Imaging equipment.
4. Interior lighting - LED lamps.
5. Air conditioning machines.
6. Engine oils.
7. Means of transport, ie vehicles and transport services.

and in addition, at an optional level (non-binding application):

8. Furniture.
9. Textiles.
10. Outdoor public space maintenance products and services.
11. Wastewater management infrastructure.
12. Electrical and electronic equipment in Healthcare Sector.
13. Regenerated lubricants.
14. Road construction design, construction and Maintenance.
15. Office Buildings Design, Construction and Management.

C. General instructions to the contracting authorities for the implementation of the GPP.

Firstly, as far as the designing and preparing the documents for a Green Public Procurement for the supply of products, services and public works are concerned, the contracting authorities must incorporate criteria that characterize the product, service or project as "green" and are assessed with appropriate weightings as well in order to encourage people to choose them and set the “green” solutions as a priority.

Secondly, during the designing and preparing the documents for a GPP process, the contracting authorities are encouraged to adopt, as a primary award criterion, the most economically advantageous offer based on cost-effectiveness analysis, such as life-cycle costing. The award criterion may also include the best value for money, which is assessed on the basis of more specific criteria, including other environmental aspects related to the subject of the public procurement.

In addition, it is really important for the "green" characteristics, the way they are graded as well as the reference to ecological and environmental management standards, to be expressed in clarity. The contracting authorities are generally encouraged to adopt conditions that promote the reuse and recycling of products during the designing and preparing the documents of a Green Public Contract process. Furthermore, they must also ensure the alternative management of waste, such as packaging, electrical and electronic waste, portable batteries and tires, especially where this is required by law.

Moreover, contracting authorities are also encouraged to apply the principles of the circular economy both as purchasers in the preparation and design of a public procurement as well as consumers during the use of the products or the provision of the service. In this context, administrative documents and any other type of documents can be circulated as much as possible by electronic means, in order to avoid their printing or photocopying. If the printing of the

documents is necessary, then this can be done on both sides of the sheet of paper and the used ones can be collected for recycling.

Under the current institutional framework, the public sector can apply similar "cyclical" principles to public procurement, such as leasing. The public sector can cover its needs in computer equipment, medical and hospital equipment and motor vehicles with leasing contracts and mainly with operating leasing contracts. In the case of operating leases, at the end of the contractual period, the above persons are given the right to purchase or renew the lease, without excluding the donation of products or the purchase of used products.

When designing and preparing the documents of a Green Public Procurement for the provision of electricity services, the contracting authorities are obliged to request from the respective electricity provider guarantees of origin of electricity from renewable sources (green certificate). This ensures that the energy consumed by the public sector comes only from renewable energy sources.

In addition to the above, contracting authorities are encouraged to adopt the proposed EU Green Criteria for all product and service categories and to register in KIMDIS of GPP, for each case of product, service and public works, during which they have applied these criteria.

D. National Objectives for the promotion of Green Public Procurement

The quantitative targets for the three years 2021 to 2023 for the categories of public contracts of binding and non-binding implementation as well as the bodies responsible for their implementation, are presented below. The quantitative targets refer to the total number of public contracts to be announced annually by all the responsible implementing bodies per category.

It should be mentioned here that a competition's procedure is considered "green", if it results in the conclusion of a contract that meets the "basic" criteria of GPP.

- **Categories of products/services of binding application.**

Categories of goods and services of binding application	National Targets per year		
	Starting from 1.1.2021	Starting from 1.1.2022	Starting from 1.1.2023
	Responsible implementing bodies: Central government authorities	Responsible implementer bodies: Non-central contracting authorities	Responsible implementing bodies: Contracting bodies
Photocoping and writing paper	1a) 20%	1a) 30% 1b) 70%	1a) 40% 1b) 60%

1a) Paper from recovered fibers 1b) Sustainable harvest virgin fiber paper	1b) 80%		
Computers and monitors 2a) Computers 2b) Monitors	2a) 50% 2b) 50%	2a) 50% 2b) 50%	2a) 50% 2b) 50%
Imaging equipment (printers, scanners, copiers etc.)	50%	50%	50%
Interior lighting - LED lamps	50%	50%	50%
Air conditioning machines	50%	50%	50%
Engine oils (Biodegradable lubricants)	50%	50%	50%
Means of transport (vehicles and transport services)	In accordance with the provisions of Directive (EU) 2019/1161, as it will be incorporated into national law (and the National Energy and Climate Plan (NECPs)	In accordance with the provisions of Directive (EU) 2019/1161 as it will be incorporated into national law	In accordance with the provisions of Directive (EU) 2019/1161 as it will be incorporated into national law

- **Categories of products/services of non-binding application.**

Categories of goods and services of binding application	National Targets per year		
	Starting from 1.1.2021 Responsible implementing bodies: Central government authorities	Starting from 1.1.2022 Responsible implementer bodies: Non-central contracting authorities	Starting from 1.1.2023 Responsible implementing bodies: Contracting bodies
Furniture	50%	50%	50%
Textiles	50%	50%	50%

Outdoor public space maintenance products and services.	50%	50%	50%
Wastewater management infrastructure	-----	20%	20%
Electrical and electronic equipment used in Healthcare Sector	50%	50%	50%
Regenerated lubricants	20%	20%	20%
Road construction design, Construction and Maintenance	15%	25%	40%
Office building design, Construction and Management.	15%	25%	40%

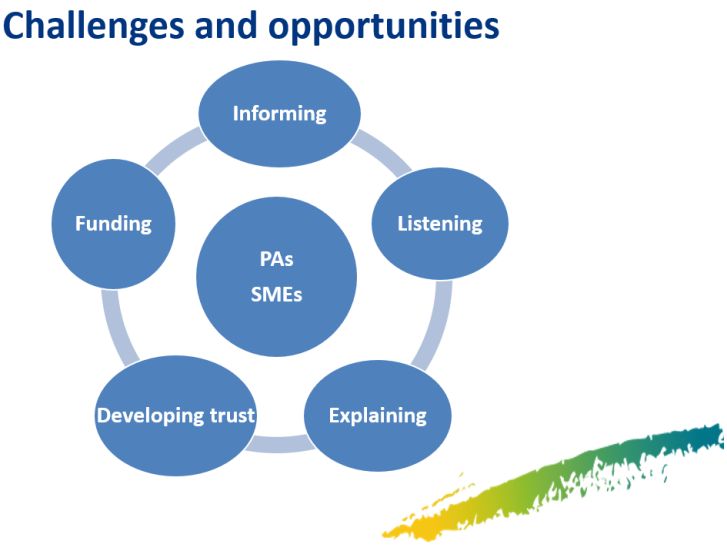
E. Actions of involvement, information, awareness and training of stakeholders.

Over a period of three years and for the purposes of informing public bodies and the private sector, at least six thematic informative and educational seminars (two per year) will be organized. Interested parties will be invited to participate, to be informed, to be trained and become aware of the procedures that should now be followed. For this purpose, information material will be developed and produced, in order to properly inform and educate stakeholders. The information material will include, among other things, information leaflets that will communicate the above actions and will inform about the procedures of green public procurement. In order to be distributed to public bodies and private bodies, the information material will also be produced in electronic form.

The objectives that are set are the following:

- The development of skills in contracting authorities on the benefits and possibilities of implementing the GPP,
- Informing the market representatives and entrepreneurs about the intention of the public sector to proceed with the "greening" of public procurement, but also about the benefits for the various sectors from the certification of products and the promotion of the production of environmentally friendly products as well as the adaptation of the Greek market to the new data and

- Informing the public about the environmental and potentially social benefits of the market of environmentally friendly products that will also contribute to the awareness and development of environmental culture of society and especially the youth.



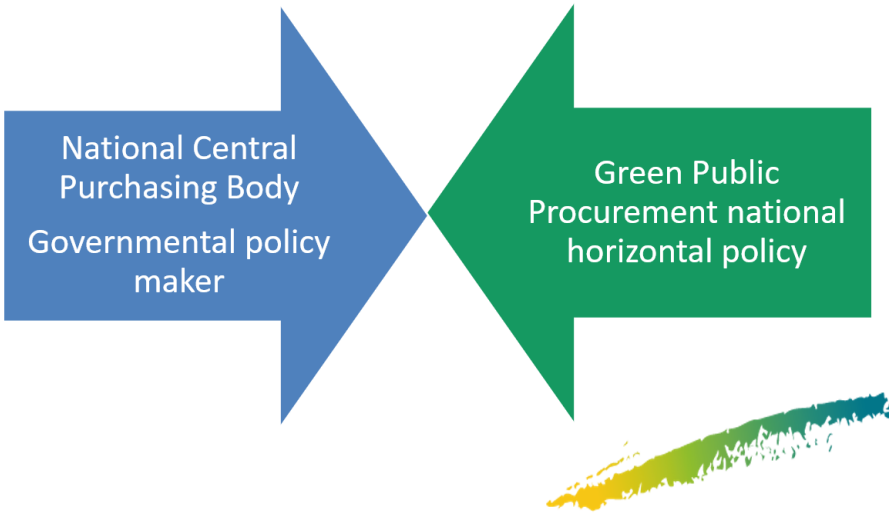
As green criteria have been set in the National Action Plan and for the purposes of organizing the seminars, mainly electronic means will be used and the necessary contracts will be implemented with these green criteria.

At the National Center for Public Administration and Local Government (EKDDA), a training program has already been created on "Green Public Procurement".

In cooperation with existing public structures, informative and educational events will be organized throughout Greece, as well as training seminars and useful material will be distributed, such as good practice guides, project life cycle analysis applications, examples of Green and Circular Public Internet Concepts, as well as interactive electronic tools.

Such structures are:

- The Hellenic Agency for Local Development and Local Government,
- the National Center for Public Administration and Local Government,
- the National Center for Environment and Sustainable Development (NCESD).



Recipients of these actions will be public and local authorities, Public entity/Legal person governed by public law, Private Legal Entity, as well as stakeholders in the implementation of a program to be developed by the Commission.

In addition, efforts will be made to include seminars in current events such as the Circular Economy Forum, National-International Conferences, EU Green Public Procurement Events, OECD events to promote the Green Procurement Handbook, the annual event of the Central Government of Greece, in order to minimize their environmental and economic footprint.

Furthermore, in order to promote it in a better way, at the Thessaloniki International Fair (TIF), there will be a booth presence that will communicate the National Action Plan and the focus on Green Public Procurement.

Seminar cycles will be co-organized with the Hellenic Agency for Local Development and Local Government (EETAA), in order to train municipal employees in Green Public Procurement.

Last but not least, articles will be published in the national and international press on the progress of the National Action Plan. The thematic units of the action plan and the EU green criteria can be communicated. In addition, after the annual evaluation report, the results can be announced to the competent Ministries, as well as to the press. It is legal to use the electronic press as well.

F. Indicators for Monitoring and Evaluation of the National Action Plan.

As it ought to be, the monitoring and evaluation of the implementation process is the most important parameter for the success of the National Action Plan. The "Committee for Administration, Monitoring and Evaluation of the Implementation of the National Action Plan" as the most competent body, is re-

sponsible for achieving the objectives of the strategy and monitoring the progress of its implementation. For this purpose, quantitative monitoring and evaluation indicators (KPIs-Key Performance indicators) have been set, which will be checked on a continuous basis, while they will be reported on an annual basis (ie every 12 months).

As far as the chosen indicators are concerned, it should be mentioned here that their selection was based on the existence of the National System of Electronic Public Procurement (ESIDIS-KIMDIS), which allows the immediate, reliable and fully automated recording of all procurement of public bodies. Furthermore, the monitoring and evaluation indicators are in full agreement with the indicators set by the European Commission in its announcement "Public Procurement in the Service of the Environment" but also with the capabilities of the modern COM 2008 platform (400).

The KPIs are:

1. The total number of GPP in relation to the total number of public contracts (Key indicator).
2. The total value of the GPP (Key indicator).
3. The total value of the GPP in relation to the total value of the public contracts (Key indicator).
4. The value of the individual product/service categories of public procurement (Key indicator).
5. The total number of individual product/service categories in relation to the total number of public contracts (Key indicator).
6. The total of the mandatory GPP in relation to the total of the public contracts (Key indicator).
7. The total of the optional GPP in relation to the total of the public contracts (Key indicator).
8. The number of bodies that made green supplies per year (Secondary indicator).
9. The number of institutions/individuals who were informed/trained in relevant seminars per year (Secondary indicator).

2.6 Regional context of East Macedonia and Thrace Region

Overall, there is little experience and knowledge regarding circular economy and more specifically circular public procurements in the region. The main reason is the fact that the responsibility of the legal arrangements for public procurements lies in the central government and not in local and/or regional authorities. Furthermore, national legislation regarding competition and economic freedom limits any regional efforts to promote local-based circular criteria and certifications in public procurements.

However, through the inspiration of the participation in the CircPro project, the Regional Authority intents to work together with all stakeholders towards a framework for facilitating the circular economy, combining regulations, mar-

ket-based instruments, research, innovation, incentives, information exchange, and support for voluntary approaches in key areas. The Region intents to lead in the national level and make a difference achieving the incorporation in its daily practice the principles of the circular economy in its competences (management of solid and wastewater, energy saving, supplies and projects with green and circular criteria, creation of demand for secondary materials, leasing services).

The regional stakeholders, who are relevant to circular public procurements, are mainly local Contracting Authorities comprising foremost of local government authorities and other public bodies such as:

- Municipalities, Regional Authority, Municipal Enterprises (water-wastewater)
- Hospitals, Universities, East Macedonia and Thrace Solid Wastes Management Body

The above Authorities have procured tenders containing some aspects of green and/or circular procurements.

- One aspect is the requirement of compliance to certain technical specifications of products as selection criteria. The documentation of compliance was based on quality and green certifications. Such examples comprise procurements of office paper, equipment and cleaning products.
- Another aspect, more in-line with circular procurements principles, is the award criteria based not only in price (and quality) but on investment costs. Such award criteria were implemented in procurements of municipal street lightings and specific formulas were used that calculated the lower weighted investment cost in €/MWh, thus promoting energy and maintenance savings.

Other experiences in circular procurement projects in the region comprise the participation of the Municipality of Kavala in the “Circular Buildings Project” in the framework of URBACT II. The pilot action planned within the framework of the project concerns the preparation of a study on the exploitation/ reuse of secondary processed materials from construction/demolition and the inclusion of this specification in public procurement.

Regarding the private sector there are efforts from bigger industries to embrace circular economy principles in their practice. Such examples are the commitments of substitution of raw input materials with recycled ones in plastics industry and with recovered materials in battery industry (Thrace Plastics Pack S.A., Sunlight S.A.).

3 Best practices for the promotion of circular procurements

3.1 Policies, strategies and plans

A. Alentejo Circular Economy Forum (FECA)

FECA has the objective of reflect, share, discuss and outline the main CE intervention pillars, to contribute to the promotion and to encourage the transition to CE.

The transition to CE imposes a profound change in the way we value materials, products and services. Aiming to support the transition of the region to the CE objectives, CCDRA implemented FECA, constituting itself as a model of governance in the region. Through regular and systematic interactions among different entities, FECA is a space of coordination, but above all, is a space where the different stakeholders and CCDRA exchange Knowledge, contacts, experiences, projects and identify opportunities or constraints for the application of CE concepts. In order to manage all entities, a functional structure has been defined within an interregional and cross-border territorial scope. A Strategic Council was formed, coordinated by CCDRA, that integrates one university, one polytechnic institute, one inter-municipal community, a public company, a business association and the ISQ institution. The Strategic Council meets, on average, three times a year and its main action is to discuss and approve the region's CE Regional Agenda.

In support to the Strategic Council, 5 WG were created in order to develop different actions. Taking into consideration the diversity of themes related to CE, the groups are coordinated by different entities. Each entity participates in FECA voluntarily and the stakeholders are everyone who wants to contribute to the CE region's transition.

The resources needed are mainly human resources including a person responsible for the dynamization of the FECA activities, the contacts between entities and the monitoring of the implementation of CE in the region.

The results of the operation of the Forum so far are:

- More than 130 representatives from 80 different entities;
- plenary sessions with more than 45 people each and with the aim of sharing experiences;
- new projects within the subject of CE proposed;
- Development and implementation of the Circular Laboratory of Alentejo;
- national project marathons where it was presented more than 55 different projects;

- workshops about Public Procurement and Demolition and Construction Waste;
- 1 sub-regional contest where 3 Good Practices on CE were identified.

The main challenge was to identify the main priorities to the region entities. FECA started with different activities and meetings which made possible the identification of the main needs and made possible to define strategies in order to keep the regional stakeholders interested as well as to bring more entities to be part of FECA.

The main potential for learning or transfer this good practice is the FECA management model. Within this model and with the commitment of different entities, the region is able to share ideas and projects about circular economy. Each year all entities that integrate FECA define the next year's strategic agenda. It also promotes an opportunity to identify new fields of intervention, projects and partnerships (regional, national or international).

B. Boosting the C&D recycling market in Bulgaria

Measures to boost the recycling market are set in Bulgarian legislation through obligation for the contracting authorities for integrating C&D recycled materials in construction. The Ordinance on construction waste management and use of construction recycled materials was published in 2017 in Bulgaria. This subsidiary act provided support measures for recycled materials and their incorporation into new construction.

According to act. 13 of the Ordinance in force from 12.12.2017: "The contracting authorities of public works projects financed by public funds shall be responsible for the investment in the construction of recycled construction materials or treated C&D Waste for recovery in backfill in quantities according to Annex 8, depending on the type of construction and the scope of the construction works in the construction permit."

Annex 8 of the Ordinance sets up the targets for integrating recycled construction materials that shall be reached by 2020 depending on the type of construction activity as follows:

- at least 2 % for new construction of buildings & facilities;
- at least 10 % for new construction of roads;
- at least 3 % for rehabilitation, overhaul & reconstruction of roads;
- at least 8 % for new construction, reconstruction & major overhaul of other construction of technical infrastructure;
- at least 10 % for new construction of landscaped areas for public or special purpose, including networks and technical infrastructure facilities for their maintenance, amusement sites with permanently attached amusement facilities, outdoor sites for sports and cultural activities;
- at least 12 % for recycling of construction waste in backfills.

As a result, from the public procurements conducted in fulfilling the legislative measures for support of the C&D recycled materials, the data for 2018 from the Bulgarian Executive Environment Agency are as follows:

- 15.733 tons of recycled construction materials are incorporated in constructions and
- 641.700,80 tons of recovered C&D waste is used for backfilling.

Since this is a legislative measure to boost the C&D recycling market, it could be very easily transferred in other countries depending on their national legislation and local needs to support this specific market.

3.2 Examples of procurements

G. Implementation of a circular model of public procurement for improved energy-efficiency and life-cycle management of municipal road lighting in Municipality of Alexandroupoli

The sector of street lighting in Municipalities is the second largest electricity consumer after the pumping stations. Most of the electric lighting network of Municipalities includes luminaires and lamps, of which most are of old technology with significantly greater energy consumption compared to modern. This fact, combined with the existence and consolidation in the market of new lighting technologies, allows the replacement of old luminaires and lamps with new ones, leading to significant energy saving potential in the field of road lighting.

Municipality of Alexandroupoli targets saving energy and improving the environment by reducing pollutant emissions in the municipal lighting of public spaces and roads. It is worth noting that currently, at least 80% of the illumination of the municipality, in particular the communal areas and roads in the entire territory of the municipality, will be covered. Thus, it had issued the tender for “SAVING ENERGY IN THE MUNICIPAL LIGHTING WITH THE SUPPLY AND INSTALLATION OF LED LIGHTS AND THE LED LAMP SUPPLY” for 21.918 LED lamps and 3.286 mounting brackets.

The total cost of the contract amounts to 3.330.410,60€ of which 80% was paid with the supply of the materials and the other 20% is paid through an escrow account in 10 annual instalments after:

- Inspection for annual energy savings by the CRES
- Certification by the competent department of the Municipality

As for the evidence of its success the following are identified:

- Environmental impact: Energy savings of 4.376.824 KW per year and reduction of 4.328,68 t CO2 per year.
- Savings: Annual maintenance savings of 190.000€.
- Reduction of the time of detection and repair of network failures leading to time and resource savings. Medium to long-term reduction

of the relative costs for the municipality (increased life of materials, existence and uniformity of spare parts – scale economies).
- Improve quality of life: Better lighting services of the communal areas

The main challenges encountered/lessons learned during the implementation of the practice was the requirement for mapping of existing street lamps, lights and pillars from the competent department of the Municipality including geo-coordinates, type, height, lamp tech and power.

The key success factors for transfer to other regions are that the tender utilizes the following:

- Guide for Studies for Improving Energy Efficiency in Road Light for local government bodies, compiled by the CRES
- Ministerial Degree "Framework of a methodology for measuring and verifying the energy saved to achieve the indicative national energy savings target for end use"
- The award criteria were based on the most economically advantageous tender as determined on the basis of costs, using a cost-effectiveness approach with life-cycle costing: Lower weighted investment cost (€/MWh).

Contractor obligations: Supply, transport, installation and delivery in full operation of the materials ready for use, in the positions to be indicated by the municipality, while for the LED lamps, the supply, transport and delivery in a place that will indicate the municipality as well as the 10 years maintenance in a state of proper operation of the products offered. Also, an electronic record of digitally displayed installation locations.

H. Catalog of recycled aggregates of the Junta de Andalucía

In compliance with European and national guidelines on environmental efficiency in infrastructure construction, the Public Works Agency of Andalucía has carried out several research projects to promote the use of recycled materials in construction.

One of these is the Catalogue of recycled aggregates made with construction and demolition waste (RCD), which aims to be a technical guide for designers and construction management, contributing to eliminate the technical barriers that exist for the use of these materials.

The catalogue presents constructive solutions supported by experiences and calculations based uppon the particular characteristics of recycled materials. These materials have undergone a physical and chemical characterization in the laboratory, and their behavior has been analyzed on a real scale through the execution of experimental sections, which have been evaluated over time through monitoring processes.

The Catalogue offers standardized recycled material choices for the infrastructure developers and municipality's infrastructure department. After this,

the use of virgin raw materials extracted for the infrastructure projects is diminished and the recycled aggregates can replace the virgin ones.

Now there are standardized materials.

The purchasers now have a choice to add a requirement to the tender for using these recycled aggregates in the work. The success of this initiative is to reduce the extraction of materials from the Earth with a guarantee of quality.

It was part of a bigger Research Project, that included other deliverables like a guide of Good practices in Building waste Plants and a test track with estimated costs. 6.000€. It was developed in 13 months by a mixed team with members from University, Demolition managers and the Public Agency of Works

Various infrastructure/road works, where arid recycled RCDs have been used, were executed and the condition of these works has remained satisfactory. Málaga metro, workshops and underground garages, several streets, roads and avenues, and the two test sections built in 2008, i.e. the connections of the A-357 and A-367 roads, in Ardales, Málaga, with heavy traffic load.

In numerous cities, the RCD materials catalogue is used, meeting all legal and quality requirements.

There is distrust of recycled aggregates due to the inexperience in its use, as well as the variability of the waste at the entrance. A big challenge was to develop accurate standards to make these materials reliable, so the definition of these products could be included in tenders.

4 Design and award of public circular procurements under the existing national legislation

4.1 Pre-award stage – needs analysis, zero waste design, risk assessment

This pre-award stage is the starting stage and its appropriate implantation is vital for finding the right approach for the CP implementation.

One of the first practical steps in this stage is to consider how CP can be integrated into the existing procurement practices and systems of the organization. Creating a circular procurement policy or incorporating circular economy principles into existing GPP or SPP policy can be an effective first step to ensuring it is visible as a priority but it is not mandatory.

There are three types or "levels" of models for implementing circular procurement:

1. "system level";
2. "supplier level";
3. "zero waste design".

Procurers get to know the market (products, suppliers, manufacturers, service providers, etc.) to help them develop a greater understanding of what is already available and what is possible. Engaging the market can help to:

- Change and improve the procurement plan and management;
- Gathering information on how the market is structured and how it operates;
- Increase your trust and credibility with suppliers and improving relationships with them;
- Create the market conditions needed to deliver the best solution;
- Help agencies to identify opportunities for sustainability and innovation.

All this information is needed to identify risks related to the specific subject matter.

By summarizing, three major elements of procurement need to change or be in focus in order to promote more circular solutions:

1) Focus on service instead of products
2) Focus on the product's design, use phase and end of life
3) Focus on market dialogue

Relevant legislation	Article
EU Directive 2014/24	Annex V
EU Directive 2014/25	Annex VI
L.4412/2016	Annex V

4.2 Functional/Technical specifications and labels

The organizations should identify whether a technical or a “functional” approach would be more appropriate for innovation procurement and for achieving a circular result.

Functional (or ‘output/ performance-based’) criteria will describe the desired result and which outputs (for example, in terms of quality, quantity, and reliability) are expected. Functional specification are required Pre-Commercial procurement PCP and for PPI (see below)

In ordinary procurement the contracting authority defines technical specifications

Technical specifications have two functions (EU Directive 2014/24, Art. 42; EU Directive 2014/25, Art. 60).

They describe the contract to the market so that companies can decide whether it is of interest to them. In this way they help determine the level of competition.

They provide measurable requirements against which tenders can be evaluated. They constitute minimum compliance criteria. Standards have a major role in influencing the design of products and processes, and many standards include environmental characteristics such as material use, durability or consumption of energy or water.

Labels and Eco-labels can be used by contracting authorities that wish to purchase works, supplies or services with specific environmental, social or other characteristics, provided that the requirements for the label are linked to the subject-matter of the contract, such as the description of the product and its presentation, including packaging requirements.

Relevant legislation	Article
EU Directive 2014/24	42-44

EU Directive 2014/25	60-62
L.4412/2016	54-55, 282-283

4.3 Market analysis: Methodology for involving economic operators in the circular procurement process

Circular procurement is most effective if there is a clear understanding of what it regards for and the reasons for its application.

Market analysis can be useful to determine whether appropriate alternatives are available which can reduce environmental impact. To keep the stakeholders involved in circular procurement transparency has a crucial role.

The success of any procurement exercise will ultimately be determined by how the market responds to the request. Effective engagement with potential suppliers prior to tendering has several purposes:

1. Identify potential bidders and/or solutions
2. Build capacity in the market to meet the requirement(s)
3. Inform the design of the procurement and contract

The key steps for engagement of economic operators, resilience and interest raising towards participation in circular procurement tenders are the followings:

1. Awareness raising – resilience, life cycle costing, impact and benefits of CP
2. Networking- experience sharing, best practices
3. Market engagement – consulting on available capacity
4. Consulting – assist on tendering documents preparation

Relevant legislation	Article
EU Directive 2014/24	40 – 41
EU Directive 2014/25	58-59
L.4412/2016	46-47, 278-279

4.4 Preparatory stage – defining the requirements and procurers needs, subject matter

In defining the best procurement strategy, the organization should consider at what stages will be able to apply CP criteria or considerations. This activity

starts from exploration of the market and choosing the procedures. Before releasing the tender, it conducted market engagement, and completed a Life-Cycle Impact Mapping exercise to identify areas to focus on with regards to environmental and socio-economic risks and opportunities. A useful way to prioritize potential actions is by means of the 'Procurement Hierarchy', which is based on the European Waste Hierarchy: reduce, reuse, recycle and re-cover.

Challenges include extending circular thinking beyond a "financing option", the commitment risk on part of the buyer, a lack of competition (especially within public tenders) and also improving inter-organizational collaboration. In most cases the shift in business model was simply the formalization of the collaboration.

Relevant legislation	Article
EU Directive 2014/24	18(2) – 70
EU Directive 2014/25	36(2) - 87
L.4412/2016	18, 35, 130, 335

4.5 Exclusion grounds and Selection criteria

The selection of tenderers (EU Directive 2014/24, Art. 56; EU Directive 2014/25, Art. 76) consists of the tenderers' assessment on the basis of the exclusion grounds (EU Directive 2014/24, Art. 57; EU Directive 2014/25, Art. 7) and the selection criteria (EU Directive 2014/24, Art. 58) set out in the procurement documents. These Rules aim to ensure a minimum level of compliance with environmental law by contractors and sub-contractors (see also EU Directive 2014/24, Art. 59, 60, 61 - 62 - 63 - 64 on European Single Procurement Document, Means of proof, Online repository of certificates (e-Certis), Reliance on the capacities of other entities, Quality assurance standards and environmental management standards, Official lists of approved economic operators and certification by bodies established under public or private law). Techniques such as life-cycle costing, specification of sustainable production processes, and use of environmental award criteria are available to help contracting authorities identify environmentally preferable bids.

It is possible to exclude companies that have breached environmental law or have other serious defects in their environmental performance, although they must also be given the opportunity to "self-clean" and cannot be excluded for more than three years on this basis.

The 2014 directives also allow exclusion for violation of a limited list of international environmental conventions.

Exclusion grounds are provided by EU Directives. Some of them are mandatory for all EU Member States other are voluntary implemented at national level by choice of EU Member States. National contracting authorities are obliged to use them as provided at national level.

Selection criteria may be used by a contracting authority to establish whether an economic operator is qualified to perform a specific contract:

- Personal situation of the economic operator:
  - mandatory grounds for exclusion
  - optional grounds for exclusion
- Suitability to pursue the professional activity
- Economic and financial standing
- Technical and/or professional ability.

Violations of environmental law can also be used on the grounds of an award refusal of a contract to an operator, to reject an abnormally low tender, or to require replacement of a subcontractor.

Specifications can be categorised as Functional, Performance, or Technical. It is common though to use the term “Technical Specifications” to refer to specifications in general. Functional specifications can refer to performance requirements.

Relevant legislation	Article
EU Directive 2014/24	18(2) – 70
EU Directive 2014/25	36(2) - 87
L.4412/2016	18, 35, 130, 335

4.6 Award procedures

R&D can cover activities such as solution exploration and design, prototyping, up to the original development of a limited volume of first products or services in the form of a test series. "Original development of a first product or service may include limited production or supply in order to incorporate the results of field testing and prove that the product or service is suitable for production or supply in sufficient quantity as well as acceptable quality standards". R&D does not include commercial development activities such as quantity production, supply to establish commercial viability or to recover R&D costs, integration, customisation, incremental adaptations and improvements to existing products or processes.

Research and development (EU Directive 2014/24, Art. 14; EU Directive 2014/25, Art. 32), including eco-innovation and social innovation, are among

the main drivers of future growth and have been put at the center of the Europe 2020 strategy for smart, sustainable and inclusive growth. Public authorities should make the best strategic use of public procurement to spur innovation and circular procurement (EU Directive 2014/24, Recital No. 47; EU Directive 2014/25, Recital No. 57).

EU Directives on public contracts shall only apply to specific public service contracts for research and development services provided two conditions are fulfilled:

a. the benefits accrue exclusively to the contracting authority for its use in the conduct of its own affairs, and
b. the service provided is wholly remunerated by the contracting authority.

"Pre-commercial procurement" is intended to describe an approach to procuring R&D services other than those where "the benefits accrue exclusively to the contracting authority for its use in the conduct of its own affairs, on condition that the service provided is wholly remunerated by the contracting authority. PCP can be used when there are no near-to-the-market solutions yet that meet all the procurers' requirements and new R&D is needed to get new solutions developed and tested to address the procurement need. PCP can then compare the pros and cons of alternative solutions approaches and de-risk the promising innovations step-by-step via solution design, prototyping, development and first product testing. PCP is a public procurement of R&D services that does not include the deployment of commercial volumes of end-products.

Pre-commercial Procurement "deals with the procurement of those R&D services not falling within the scope of this Directive. Those models would continue to be available, but this Directive should also contribute to facilitating public procurement of innovation and help Member States in achieving the Innovation Union targets" (EU Directive 2014/24, Recital No. 47(2)). "Pre-commercial procurement" regards a R & D activity which has the aim of reaching the development of a prototype and a different set of agreement can be provided for the Intellectual property of the prototype that could be developed (not only for CA but also permitting the private company to use it, that's way pre commercial procurement can be awarded without the payment of all the research activity and cost less to Ca because of the common effort to develop a solution that satisfy the need of CA and potentially can become the new solution also for others.

PPI - THE BUYING OF PROTOTYPES (WITH ALL THE TRADITIONAL AWARD PROCEDURES)

PUBLIC PROCUREMENT OF INNOVATIVE SOLUTIONS (PPI) can be used when challenges of public interest can be addressed by innovative solutions that are nearly or already in small quantity on the market. PPI can thus be used when there is no need for procurement of new R&D to bring solutions

to the market, but a clear signal from a sizeable amount of early adopters/launch customers that they are willing to purchase/deploy the innovative solutions if those can be delivered with the desired quality and price by a specific moment in time. A PPI may still involve conformance testing before deployment.

Innovation procurement refers to any procurement that has one or both of the following aspects:

- buying the process of innovation – research and development services – with (partial) outcomes;
- buying the outcomes of innovation created of others.

In the first instance, the public buyer buys the research and development services of products, services or processes, which do not exist yet. The public buyer describes its need, prompting businesses and researchers to develop innovative products, services or processes to meet the need. In the second instance, the public buyer, instead of buying off-the-shelf, acts as an early adopter and buys a product, service or process that is new to the market and contains substantially novel characteristics.

If a certain product or service is not currently available on the market the contracting authority could establish an 'innovation partnership'. Innovation partnership is a new type of public procurement procedure provided for in Directive 2014/24/EU. The innovation partnership process takes place in three phases: - The selection phase occurs at the very beginning of the procedure, when one or more of the most suitable partners are selected on the basis of their skills and abilities. The contracts establishing the innovation partnership are subsequently awarded based on the best price-quality ratio proposed. This phase is similar to a restricted procedure. - In the next phase, the partner(s) develop(s) the new solution in collaboration with the public buyer. This research and development phase can be further divided into several stages designated for evaluating concepts, developing prototypes and/or testing performance. During each stage the number of partners may be reduced on the basis of predetermined criteria. - In the commercial phase, the partner(s) provide the final results.

The main feature of the innovative partnership is that the innovation occurs during the performance of the contract. In most other procedures, the public buyer already knows what type of solution it is buying: innovation occurs in the pre-contracting phase and usually ends with the conclusion of the contract when the exact features of the solution are agreed. In an innovation partnership, the public buyer enters into a contract with the best potential supplier(s) of innovation. The supplier(s) is (are) expected to create the innovative solution and ensure its real-scale implementation for the public buyer. The public buyer's needs should be described with sufficient precision to allow potential tenderers to understand the nature and scope of the challenge and have sufficient information to decide whether or not to participate.

The other procedures applied by procurers are as follows:

- In an open procedure, any operator may submit a tender (EU Directive 2014/24, Art. 27; EU Directive 2014/25, Art. 45).
- In a restricted procedure, the environmental technical capacity in a prior stage can be assessed and also limit the number of operators invited to tender (EU Directive 2014/24, Artt. 28, 65 and 66; EU Directive 2014/25, Art. 46).
- The competitive procedure with negotiation and competitive dialogue procedures can be used by public authorities for purchases which require an element of adaptation of existing solutions; design or innovation; or in certain other circumstances (EU Directive 2014/24/EU, Art. 29).

The competitive dialogue, in which any economic operator may submit a request to participate in response to a contract notice by providing the information for qualitative selection that is requested by the contracting authority. In this case contracting authorities have to provide information on needs requested. Competitive dialogues may take place in successive stages in order to reduce the number of solutions to be discussed during the dialogue stage by applying the award criteria laid down in the contract notice (EU Directive 2014/24, Art. 30; See also EU Directive 2014/25, Art. 48).

Only in exceptional situations (e.g. where extreme urgency brought about by events unforeseeable by the contracting authority concerned that are not attributable to that contracting authority makes it impossible to conduct a regular procedure even with shortened time limits), contracting authorities should have the possibility to award contracts by negotiated procedure without prior publication (EU Directive 2014/24, Art. 32; See also EU Directive 2014/25, Art. 47 and 50).

Moreover, framework agreements, can be awarded with an open procedure-- has been widely used and is considered as an efficient procurement technique (not an award procedure) throughout Europe. Its use can favour innovation and access to the relevant markets (EU Directive 2014/24/EU, Art. 33; See also EU Directive 2014/25, Art. 51). Framework agreements may be concluded according to five different models. With one or more economic operators by establishing all the terms of the agreement to be signed, or vice versa, without establishing all the terms providing a reopening of competition (so-called “mini-competition”) so that contracting authorities may tailor the requests to their needs in the purchasing phase. The 2014/24 Directive provide for a mixed or hybrid model “closed but with the possibility to reopen the competition” (EU Directive 2014/24/EU, Art. 33(4b)). The hybrid model allows public entities to purchase directly through the framework agreement (as in the “closed” model) or re-open the competition among the economic operators party to the FA (this is possible only if allowed by the terms and conditions indicated in the procurement documents). It is the contracting authority that needs to use FA which decides whether it might be convenient to reopen the competition among the economic operators inside the master contract.

The main difference between technical specifications and award criteria is that whereas the former are assessed on a pass/fail basis, award criteria are weighted and scored so that tenders offering better environmental performance can be given more marks.

Relevant legislation	Article
EU Directive 2014/24	26-33
EU Directive 2014/25	43-51
L.4412/2016	25-32, 39, 55-67

4.7 Award criteria

The evaluation of tenders should be carried out by an evaluation committee according to the:

- lowest price, in which only price is evaluated;
- most economically and advantageous (MEAT) in which is evaluated the price (using a cost-effectiveness approach, such as life-cycle costing) and technical performance indicated in the contract notice with their relative weighting.

a) Life Cycle Costing

When focusing on resource efficiency, products tools like Total Cost of Ownership (TCO) or Life Cycle Costing become useful.

Many different backgrounds and disciplines have been involved in calculating the optimal allocation of budget by estimating the costs that incur during the whole life cycle of a product, service, project, investment, etc. The main cost categories that can be included in an LCC analysis are those related to the following distinctive life cycle stages: Research, development and design; Primary production; Manufacturing; Use; Disposal.

The awardphase is not the only relevant moment for using LCC in the procurement. Analyzing the whole life-cycle costs of a product or service can be useful at different stages (Adell et al., 2011):

- At the preparatory stage: to assess the LCC of the current situation.
- Before tendering: to roughly assess different proposals to help guide market engagement activities before tendering, or to narrow down the different technological solutions to be considered.
- During tendering: to compare the LCC and the anticipated CO2 emissions of different offers, during the evaluation phase.

- After tendering: to evaluate and communicate the improvements of the purchased product in comparison to the current situation and/or other products and to communicate results.

One of the recommendations of the European Commission working group on Life Cycle Costs in Construction is to carry out LCC at early design stage, where the opportunities for modifying the costs of a project are greatest.

There are many external factors that can enormously affect the outcomes of an LCC analysis:

Market price variability of products and services

- Electricity, water and gas prices
- Taxes, subsidies and incentives
- Inflation, discount rate and other economic elements
- Waste disposal regulations

Thus, the final result of an LCC can be highly dependent on these external factors, which usually are not related at all with the environmental quality of the product or service analyzed. The conclusions highlighted that the final costs (and thus the LCC results) depends highly on the tax policy of the different Member States.

LCC analysis would be then just one piece of a wider number of elements to take into account when preparing and evaluating a public procurement process. Environmental impacts, as well as social conditions or innovation could be other additional issues to take into account in the procurement process.

b) Variants

Public buyers may allow tenders with “variants”: one or more alternative solutions usually based on alternative technologies or processes, can accompany the offer that closely matches the technical specifications. Suppliers can propose, alongside a traditional “safe” solution, a more innovative solution. This may attract the attention of public buyers because of the potential for better-than-expected results in terms of cost, quality or flexibility. Public buyers may even require the submission of variants only (complying with the minimum requirements).

The use of variants is most efficient when combined with functional requirements and award criteria that enable to compare various solutions in terms of their performance, efficiency, cost effectiveness, versatility or durability. Without these parameters, it is difficult to compare the variants.

Relevant legislation	Article
EU Directive 2014/24	45, 67-69

EU Directive 2014/25	64, 82-84
L.4412/2016	57, 86-88, 286, 311-313

4.8 Contract performance terms and conditions

Contract performance clauses are used to specify how a contract must be carried out. Environmental considerations can be included in contract performance clauses.

Compliance with contract clauses should be carefully monitored during the execution phase, with responsibility for compliance and reporting clearly indicated in the contract. In case of modification of the contract during its execution EU limits should be respected. In order to discourage breaches of environmental commitments, adequate sanctions should be provided under the contract.

Relevant legislation	Article
EU Directive 2014/24	70-73
EU Directive 2014/25	87-90
L.4412/2016	130-133, 335-338

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