Regional guidebook on circular procurement

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These Rules aim to ensure a minimum level of compliance with environmental law by contractors and sub-contractors. Techniques such as life-cycle costing,

Introduction

The project CircPro (Smart Circular Procurement)[1] aims at promoting the transition to a more circular economy related 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 it gathers 11 partners from 9 EU regions and Norway.

Main barriers that hinder the systematic implementation of the circular procurement are general lack of knowledge and expertise, 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 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.

One of the main project outputs of the project is the development of 10 Regional Guidebooks including region-specific overviews and supporting material for the regional decision-makers, procurers and suppliers on circular procurement procedures and practices. The aim of these guidebooks is (i) to raise the awareness of the regional stakeholders on the emerging needs of CP application, recent trends and developments; (ii) to analyze the obstacles faced by procurers while implementing the real CP in their entities; and (iii) to provide tools and suggestions to them on how to implement the CP in an effective and efficient way also by boosting the involvement and participation of the regional companies in the circular procurement process. This latter outcome will be achieved by an ad-hoc project tool, the "Joint Method for involving companies in the circular procurement process", that is outside the scope of this document.

These 10 Regional Guidebooks would support further CircPro activities implementation, incorporating the strategic level to establish practice and policies of municipalities and towns' procurement processes.

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

CHAPTER I - Circular Procurement as an Emerging Concept in EU

1.1. The role of public procurement in EU circular economy transition

The role of public procurement[2] in the transition to the circular economy in the EU must be analysed starting from the assumption that the circular economy represents a transformative trajectory compared to the current one based on the take-make-waste industrial extractive model. The circular economy follows three principles: design out waste and pollution; keep products and materials in use; regenerate natural systems (also according to the European Green Deal).[3]

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.

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[2] For more complete researches on innovative and strategic public procurement, see G. M. RACCA, C. R. YUKINS, Joint Public Procurement and Innovation: Lessons Across Borders, Bruxelles, Bruylant, 2019; J. M. GIMENO FELIU, Public Procurement as a Strategy for the Development of Innovation Policy in G. M. RACCA, C. R. YUKINS, Joint Public Procurement and Innovation: Lessons Across Borders, Bruxelles, Bruylant, 2019; R. CAVALLO PERIN, G. M. RACCA, Smart Cities for an Intelligent Way of Meeting Social Needs, in Le Future du Droit Administratif/The Future of Administrative Law, Lexis Nexis, 2019, 431- 437; G.M. RACCA, Public Procurement and Corruption: the EU challenges, in E. CARLONI, D. PAOLETTI, Preventing corruption through administrative measures, Morlacchi Editore, 2019, 95-103; G. M. RACCA, Collaborative and strategic procurement for supporting industrial innovation, in La commande publique, un levrier pour l'action publique?, É. Muller (eds.), Dalloz, 2018, 121-138; G. M. RACCA, R. CAVALLO PERIN, G. L. ALBANO, Public Contracts and International Public Policy Against Corruption, in M. AUDIT- S. W. SCHILL (eds. by) Transnational Law of Public Contracts Bruylant, 2016, 845-878; G. M. RACCA, C. R. YUKINS, Integrity and Efficiency in Sustainable Public Contracts. Balancing Corruption Concerns in Public Procurement Internationally, Bruxelles, Bruylant, 2014; G. M. RACCA, Aggregate models of public procurements and secondary considerations, in R. CARANTA e M. TRYBUS, The Law of Green and Social Procurement in Europe, Djøf Publishing, Copenhagen, 2010, 165-178.

[3] For further details see https://www.ellenmacarthurfoundation.org/circular-economy/concept. On the European Green Deal see https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en.

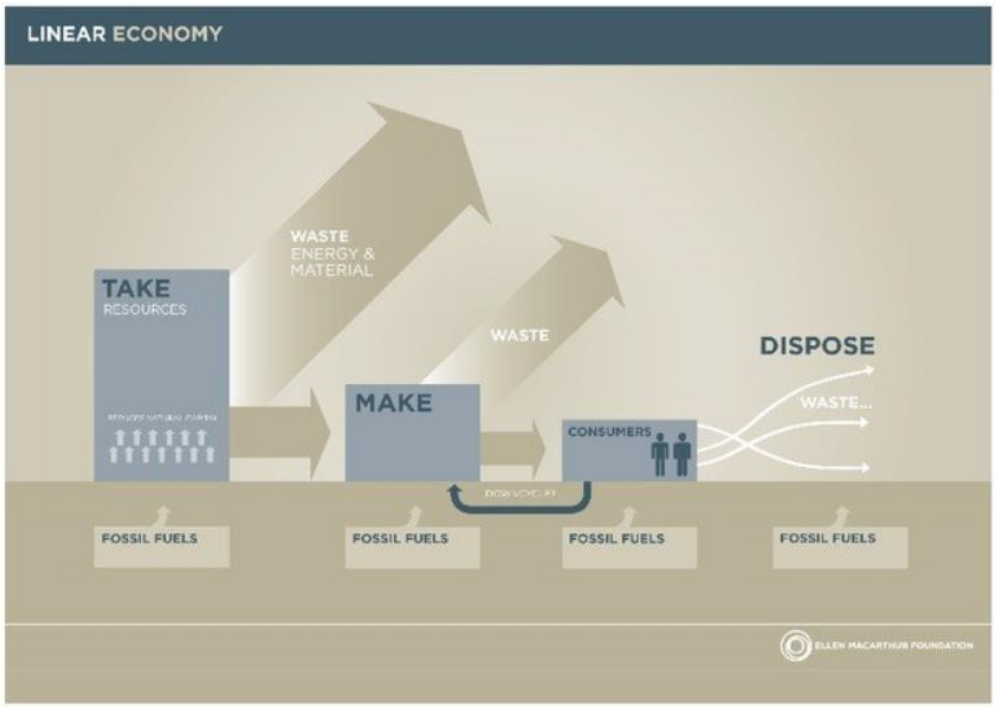

Fig. 1: The linear economy as portrayed by Ellen MacArthur Foundation (Source: https://www.ellenmacarthurfoundation.org/news/circular-economy)

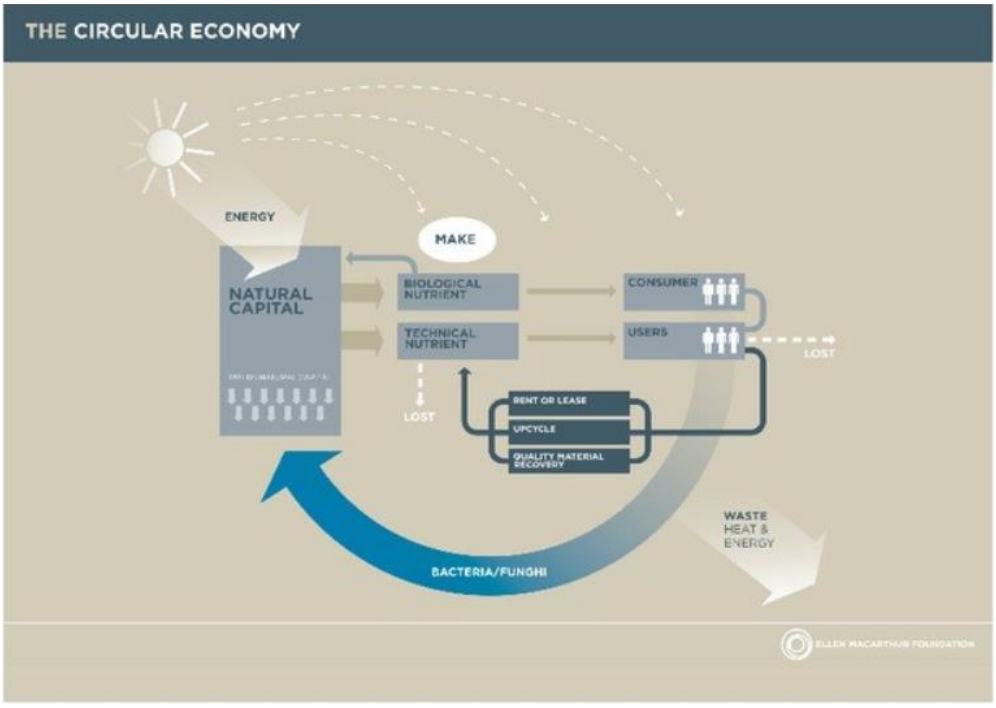

Fig. 2: The circular economy as portrayed by Ellen MacArthur Foundation (Source: https://www.ellenmacarthurfoundation.org/news/circular-economy)

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.

In 2011 the EU Commission[4], acknowledged that the pressures on resources were increasing and that continuing with the usual patterns of resource use was not an option. Hence, the EU Commission deemed it key to develop new products and services and find new ways to reduce inputs, minimize waste, improve management of resource stocks, change consumption patterns, optimize production processes, management and business methods, and improve logistics.

To this end, a policy mix capable to optimize synergies and address trade-offs between different areas was needed. Amongst others, it was suggested that increasing recycling rates would reduce the pressure on demand for primary raw materials, help to reuse valuable materials which would otherwise be wasted and reduce energy consumption and greenhouse gas emissions from extraction and processing. Before getting to recycling, attention was on the life-cycle, which means on the entire value chain.

In this view, the EU Commission set a coordinated roadmap for guaranteeing a long-term framework for action in many policy areas, supporting agendas for climate change, energy, transport, industry, raw materials, agriculture, fisheries, biodiversity and regional development. A number of medium-term measures were considered, including "*a strategy to make the EU a circular economy, based on a recycling society with the aim of reducing waste generation and using waste as a resource*".

The European overall vision at the basis of the roadmap was defined as follows: "*By 2050 the EU's economy has grown in a way that respects resource constraints and planetary boundaries, thus contributing to global economic transformation. Our economy is competitive, inclusive and provides a high standard of living with much lower environmental impacts. All resources are sustainably managed, from raw materials to energy, water, air, land and soil. Climate change milestones have been reached, while biodiversity and the ecosystem services it underpins have been protected, valued and substantially restored*". Given the vision, resource efficiency was identified as the route allowing the economy to create more with less, using resources in a way to minimize their impacts on the environment.

Changing the consumption patterns of economic operators and public purchasers was preliminarily necessary, as useful to generate direct net cost savings and increase demand for more resource-efficient services and goods. The transformative route was twofold: on one hand, purchasers were requested to adjust their decision-making process to avoid waste and purchase goods that last or that can be easily repaired or recycled; on the other hand, new entrepreneurial models, where goods/services are leased rather than bought, had to be designed to satisfy needs with less life-cycle resource

[4] COM(2011)21 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee of the Regions, *A resource-efficient Europe – Flagship initiative under the Europe 2020 Strategy*, 26 January 2011

use. In such a scenario, even waste was expected to become a resource to be fed back into the economy as a raw material to the utmost extent possible.

These policies were resumed by the EU Commission in 2014[5] , as further developed in the Seventh Environment Action Program (7th EAP)[6] . According to this act, whereas economies have developed a take-make-consume and dispose pattern of growth - that is a linear model based on the assumption that resources are abundant, available, easy to source and cheap to dispose of - moving towards a more circular economy was deemed essential to deliver the resource efficiency agenda established under the Europe 2020 Strategy for smart, sustainable and inclusive growth.

In this, circular economy definitively keeps the key principles characterizing green economy, while developing a systematic view though. Such understanding is clearly confirmed by the European Commission, which considers circular economy as a way to address green growth.[7]

[5] COM(2014)398 final/2, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *Towards a circular economy: A zero waste programme for Europe, 25 September 2014*.

[6] Decision No. 1386/2013/EU of the European Parliament and of the Council of November 2013 on a General Union Environment Action Programme to 2020 "*Living well, within the limits of our planet*". The programme identifies three priority areas where more action is needed to protect nature and strengthen ecological resilience, boost resource-efficient, low-carbon growth, and reduce threats to human health and wellbeing linked to pollution, chemical substances and the impacts of climate change. The first action area is linked to natural capital as well as the biodiversity that supports it. The second action area concerns the conditions that will help transform the EU into a resource-efficient, low-carbon economy, with a special focus on turning waste into a resource. The third action area covers challenges to human health and well-being, such as air and water pollution, excessive noise, and toxic chemicals.

[7] For further details see "Green growth and circular economy" at http://ec.europa.eu/environment/green-growth/index_en.htm

Fig. 3: Green growth, a circular economy story (Source: https://ec.europa.eu/environment/green-growth/index_en.htm)

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.

As anticipated, 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.

This vision was consolidated in 2015[8] with the aim to set the conditions for closing the loop and make residuals not discharged into the environment but reused in the economy or used to produce secondary raw materials.

On December 2019 the EU Commission presented the European Green Deal[9], a roadmap for making the EU's economy sustainable by turning climate and environmental challenges into opportunities across all policy areas and making the transition just and inclusive for all. The European Green Deal covers all sectors of the economy, notably transport, energy, agriculture, buildings, and industries such as steel, cement, ICT, textiles and chemicals. The European Green Deal provides a roadmap with actions to boost the efficient use of resources by moving to a clean, circular economy and stop climate change, revert biodiversity loss and cut pollution. It outlines investments needed and financing tools available, and explains how to ensure a just and inclusive transition.

The Green Deal is an integral part of this Commission's strategy to implement the United Nation's 2030 Agenda and the sustainable development goals. The principle of sustainable development was first defined in the World Commission on Environment and Development's 1987 Brundtland report "Our Common Future" as "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*". As part of the Green Deal, the Commission favours the United Nations' sustainable development goals to put sustainability and the well-being of citizens at the centre of economic policy and the sustainable development goals at the heart of the EU's policymaking and action.[10]

So far, the relevance of circular economy and the strategic use of public procurement was resumed in 2017 EU Public Procurement Strategy.[11] To implement the 2015 Circular Economy Action Plan, in January 2018 a set of measures was adopted at European level, including: a Europe-wide EU strat-

[8] COM(2015)614 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *Closing the loop – An EU action plan for the Circular Economy* 2 December 2015.

[9] COM(2019) 640 final, Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, *The European Green Deal*, 11 December 2019.

[10] In September 2015, the General Assembly of the United Nation adopted the 2030 Agenda for Sustainable Development that includes 17 Sustainable Development Goals (SDGs). Building on the principle of "leaving no one behind", the new Agenda emphasizes a holistic approach to achieving sustainable development for all. For further details: https://sustainabledevelopment.un.org/post2015/transformingourworld

[11] EU Commission, *Making Public Procurement work in and for Europe*, 3rd October 2017.

egy for plastics in the circular economy and annex to transform the way plastics and plastics products are designed, produced, used and recycled[12]; a Communication on options to address the interface between chemical, product and waste legislation that assesses how the rules on waste, products and chemicals relate to each other[13]; a monitoring framework on progress towards a circular economy[14]; a report on critical raw materials and the circular economy. In addition to that, the European Commission adopted: a proposal for a Directive on the reduction of the impact of certain plastic products on the environment;[15] a proposal for a regulation setting minimum requirement to boost the efficient, safe and cost-effective reuse of water for irrigation.[16]

In this context, integration of circular economy requirements into public procurement has been expressly mentioned amongst the implementation actions, all under the heading of circular procurement, which has been so introduced as neologism in the field of procurement. Indeed, public procurement is no longer recognized as a mere administrative procedure to purchase goods, services or work, but rather as a tool for achieving strategic goals. As such public procurers can truly be a role model and drive transition to circular economy. Every year public authorities spend around 14% of GDP on the purchase of services, works and goods and in many sectors public authorities are the principal purchasers. That is why, especially in times of strained national budgets, procurement could be a powerful tool for spending public money in an efficient, sustainable and strategic manner.

In particular, as recently emphasized by the EU Council, public buyers should use their purchasing power strategically to obtain better value for money and support the transition to a greener, more innovative and circular economy, in particular by investing in sustainable infrastructure, in reusable, recyclable, repairable, and resource efficient products and in the renovation of public buildings to improve their sustainability and optimise life cycle costs in particular in target sectors where public demand has a significant impact, such as medicinal products, medical devices or IT, also taking into account considerations about resilience, risk management and security of supply.[17] According

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[12] COM(2018) 28 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *A European Strategy for Plastics in a Circular Economy*

[13] COM(2018) 32, Communication on the implementation of the circular economy package: options to address the interface between chemical, product and waste legislation.

[14] COM(2018) 29 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a monitoring framework for a circular economy.

[15] COM(2018) 340 final, Proposal for a Directive of the European Parliament and of the Council on the reduction of the impact of certain plastic products on the environment.

[16] COM(2018) 337 final, Proposal for a Regulation of the European Parliament and of the Council on minimum requirements for water reuse.

[17] EU Council Conclusions, "*Public Investment through Public Procurement: Sustainable Recovery and Reboosting of a Resilient EU Economy*" Brussels, 25 November 2020. See also G. M. RACCA, C. R. YUKINS, Introduction. The Promise and Perils

to the EU Council, public authorities should invest in the expertise and in the professionalization of public buyers, for example of Central Purchasing Bodies and reinforce the capacity of public buyers in order to address green and circular solutions. To achieve innovative and sustainable procurement member states and other Institutions of the European Union should promote cooperation between public buyers within and among the Member States and set-up joint strategies while bearing in mind the specific needs and interests of SMEs including setting platforms that allow interactions between buyers and suppliers for better sourcing strategies. The Commission and the Member States should cooperate in developing guidelines and criteria through a common methodology to support the public sector in sourcing through transparent, reliable, flexible, and diversified supply chains with the aim to strengthen the European economy, and reduce strategic dependence on third countries, especially in certain sectors of the European economy which are crucial for the functioning of public services and public health care, e.g., medicinal products and medical devices.[18]

Moreover, the Public Procurement Directives provide for strategic procurement possibilities, that nonetheless, despite their potential benefits, are not sufficiently used at the moment. A change of approach is definitively needed and a broad collaborative partnership among national, regional and local authorities, the EU Commission, businesses and stakeholders is expected in this direction. [19]

In consideration of that, the EU Commission strongly encourages demand driven strategies and in fact in its website provide information about GPP and SPP as well as procurement methodologies, support, education material, best practices and learning events.[20] In addition, the EU Commission has already prepared specific guidance tools for procurers on circular procurement.[21] The vision is that, starting from systematic implementation of green procurement criteria, the application of circular approaches to public procurement could really lead to considerable results not only in terms of reduced environmental impacts, but also in terms of effectiveness and efficiency of public spending. To this end, six strategic priorities shall be followed: i) ensuring wider uptake of strategic public procurement; ii) professionalizing pub-

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of Innovation in Cross-Border Procurement, in G. M. RACCA, C. R. YUKINS, Joint Public Procurement and Innovation: Lessons Across Borders, Bruxelles, Bruylant, 2019, 1-27

[18] EU Council Conclusions, "*Public Investment through Public Procurement: Sustainable Recovery and Reboosting of a Resilient EU Economy*" Brussels, 25 November 2020.

[19] COM(2017) 572 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *Making Procurement work in and for Europe.*

[20] For further details: https://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm.

[21] European Commission, *Public Procurement for a Circular Economy – Good Practice and Guidance*, 2017.

lic buyers; iii) improving access to procurement markets; iv) increasing transparency, integrity and better data; v) boosting of the digital transformation of procurement; vi) cooperating to procure together. [22]

1.2. The European programs supporting the implementation of Circular Procurement

In order to support transition to circular economy, the EU Commission has called for a commitment at all levels, from Member States, regions and cities, to businesses and citizens from the publication of the 2015 EU Action Plan on Circular Economy[23]. To facilitate transition acceptance, the EU Commission has then promoted a number of research programs and capacity building initiatives promoting systemic change. In order to rethink our ways of producing and consuming, and to transform waste into high value-added products, new technologies, processes, services are needed and business models capable to shape the future of our economy and society are expected.

The development of a circular economy definitively requires public and private sources of financing to scale-up improved technologies and processes, develop infrastructure and increase cooperation.[24] In this sense, Europe is making a lot first of all by means of its cohesion policy. [25]

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[22] COM(2017) 572 final, cit. For the sake of circular procurement, ensuring wider uptake of strategic public procurement results even more relevant, as clearly stated at page 8: "*Strategic public procurement should play a bigger role for central and local governments to respond to societal, environmental and economic objectives, such as the circular economy. Mainstreaming innovative, green and social criteria, a more extensive use of pre-market consultation or qualitative assessment (MEAT) as well as procurement of innovative solutions at the pre-commercial stage requires not only a highly competent pool of procurers but above all policy vision and political ownership*".

[23] The 2015 EU Action Plan, as part of the ambitious Circular Economy Package, keeps strong synergies with the Commission's package on Clean Energy for all Europeans, and is instrumental in supporting the EU's commitments on sustainability, as outlined in the Communication "Next steps for a sustainable European future" and, in particular, to reach Sustainable Development Goal 12 "Responsible consumption and production".

[24] P. VALCARCEL FERNANDEZ, The relevance of Promoting Collaborative and Joint Cross Border Procurement for Buying Innovative Solutions, in G. M. RACCA - C. R. YUKINS, Joint Public Procurement and Innovation: Lessons Across Borders, Bruxelles, Bruylant, 2019, 133 - 170.

[25] Cohesion policy provided more than €350 billion over the 2014-2020 period. It supports job creation, business competitiveness, economic growth and sustainable development, and comprises the European Regional Development Fund (ERDF) and the European Social Fund (ESF). All EU Member States and regions profit from these, with the bulk concentrated on less developed ones. Cohesion policy supports Europe's objectives for smart, sustainable and inclusive growth, through investments in 11 priority areas. Several of these areas have a direct link to circular economy. For further details: https://ec.europa.eu/regional_policy/en/faq/

The European Commission has adopted on March 2020 the new Circular Economy Action Plan "For a cleaner and more competitive Europe" to increase recycling and reuse of products in the EU. [26] This new action plan is due to speed up the EU's transition towards a circular economy by strengthening EU industry, helping fight climate change and preserving the EU's natural environment. The new Action Plan announces initiatives along the entire life cycle of products, targeting for example their design, promoting circular economy processes, fostering sustainable consumption, and aiming to ensure that the resources used are kept in the EU economy for as long as possible. It introduces measures targeting areas where action at the EU level brings real added value.

In September 2020, the European Commission presented another initiative named "2030 Climate Target Plan". With this initiative, the Commission proposes to raise the EU's ambition on reducing greenhouse gas emissions to at least 55% by 2030. The Commission's proposal sets Europe on a responsible path to becoming climate neutral by 2050. The new proposal delivers on the commitment made in the Communication on the European Green Deal to put forward a comprehensive plan to increase the European Union's target for 2030 towards 55% in a responsible way. It is also in line with the Paris Agreement objective to keep the global temperature increase to well below 2°C and pursue efforts to keep it to 1.5°C. The impact assessment accompanying the proposal prepares the ground for adapting climate and energy policies to help decarbonise the European economy [27].

In the investment framework for 2014-2020, significant funding has been devoted to improved recycling, improved waste management, resource and energy efficiency, strengthening the bio-economy, novel solutions in product design, new business models. In addition, resource efficiency becomes part of other cohesion policy priorities, following a horizontal commitment to sustainable development. [28]

On this line, Interreg Europe and Interreg Central Europe programs, financed by the European Regional Development Fund (ERDF) for 2014-2020 are addressed to three types of beneficiaries: public authorities; managing authorities/intermediate bodies; agencies, research institutes, thematic and non-profit organizations. These programs supported for instance the projects

[26] COM (2020) 98 final, Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, *A new Circular Economy Action Plan – For a cleaner and more competitive Europe,* 11 March 2020.

[27] For further details see "*The Inception Impact Assest*" available at https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12265-2030-Climate-Target-Plan

[28] Cohesion policy is not only about money. It offers a policy framework for integrated regional development focusing on the particular strengths of each region to deliver the circular economy. It works in partnership with actors on the ground and follows a holistic approach. It helps regional authorities with capacity-building and increases cross-border cooperation.

PPI2INNOVATE[29], GPP4GROWTH[30] and SYMBI[31], that specifically focus on the role of public procurement as driver for innovation and sustainability.

Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. By coupling research and innovation, Horizon 2020 is helping to achieve this with its emphasis on excellent science, industrial leadership and tackling societal challenges. The goal is to ensure Europe produces world-class science, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering innovation.[32] The Horizon 2020 work program already included a major initiative, "*Industry 2020 in the circular economy*", granting over €650 million for innovative demonstration projects[33] supporting the objectives of circular economy and industrial competitiveness in the EU in a wide range of industrial and service activities,

[29] PPI2INNOVATE targets directly public procurers on all administrative levels in central Europe with the aim to build regional capacities in PPI to change attitude towards PPI, to strengthen linkages among relevant stakeholders in regional innovation systems and to finally boost usage of PPI. For further details: https://www.interreg-central.eu/Content.Node/PPI2Innovate.html

[30] GPP4GROWTH aims to support public authorities to seize new opportunities for using their purchase power to stimulate eco-innovation, resource efficiency and green growth, mostly by using new award criteria in calls and tenders that pay particular attention to environmental considerations. More specifically the project aims to: increase the capacity of regional administrations to effectively implement resource efficiency policies, applying green public procurement; improve the implementation of national/regional resource efficiency policies, providing incentives to businesses to integrate environmental factors and costs when producing goods and/or providing supplies, services and works; unlock regional/national investments on green public procurement to promote the development of new green products and services; improve regional actors' readiness and create knowledge awareness on the of green public procurement on the adoption of sustainable consumption and production patterns by business operating in the region. For further details: https://www.interregeurope.eu/gpp4growth/

[31] SYMBI project aims to contribute to improve the implementation of regional development policies and programs related to the promotion and dissemination of Industrial Symbiosis and Circular Economy. SYMBI general objective is to empower regions to build sustainable economies, resilient environmental pressures and climate change. The project supports the implementation of policy instruments and measures for the diffusion of industrial symbiosis, to add value, reduce production costs and relieve environmental pressures through increased resource efficiency and green house gas emissions. Through the development of these activities, SYMBI: encourage regional waste transformation systems; promote the use of secondary raw materials and the emergence of regional secondary raw materials market; prioritize green public procurement; unlock investments by regional and local financial actors; explore, assess, expand, and enhance current practices in ecosystems of industrial innovation; raise public awareness on industrial symbiosis and circular economy. For further details: https://www.interregeurope.eu/symbi/.

[32] For further details: https://ec.europa.eu/programmes/horizon2020/what-horizon-2020.

[33] Some examples of Successful projects: CEPPI 2 (prep PPI) Cities –energy consumption, WATER PIPP.Water procurers, EURECA (prep PPI) Green data centers, HAPPI (PPI) Heing, PRO-LITE (PPI)Cities/Metro Lighting, SPEA_- (PPI)Sustainable buildings, INNOBUILD (PPI) Sustainable buildings, GREENS (prep PPI) Energy agencies –CO2, PPI4WASTE (Authorities Waste management), etc.

including process industries, manufacturing, and new business models. It particularly explored a pilot approach to help innovators facing regulatory obstacles (e.g. ambiguous legal provisions), by setting up agreements with stakeholders and public authorities (so called 'innovation deals'). This initiative adds to a wide range of existing Horizon 2020 programs supporting innovative projects relevant to the circular economy, in fields such as waste prevention and management, food waste, remanufacturing, sustainable process industry, industrial symbiosis, and bio-economy.[34]

Amongst others projects which have received funding from Horizon 2020, the project SPP Regions is particularly noteworthy. SPP Regions aimed at promoting the creation and expansion of European regional networks of municipalities working together on sustainable public procurement (SPP)[35] and public procurement of innovation (PPI). [36] The 7 networks involved in the project regional networks collaborated directly on tendering for eco-innovative solution, whilst building capacities and transferring and knowledge through their SPP and PPI activities. 40 eco-innovative tenders were published.[37] The project also pursues to strengthen networking at European level by redeveloping the Procura+ European Sustainable Network. [38] On September 17, 2020, the European Commission launched the last and biggest call under Horizon 2020, the European Green Deal Call[39], a €1 billion call for research and innovation projects aiming for discernible results to be delivered in eight thematic and two horizontal areas.[40]

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[34] For further details on Horizon 2020 R&I projects supporting the transition to a circular economy: https://ec.europa.eu/research/environment/index.cfm?pg=output&pubs=thematic

[35] Sustainable Public Procurement (SPP) is a process by which public authorities seek to achieve the appropriate balance between the three pillars of sustainable development: economic, social and environmental – when procuring goods, services or works at all stages of the project. For further details: http://ec.europa.eu/environment/gpp/versus_en.htm

[36] Directive 2014/24/EU defines public procurement of innovation as "*the implementation of a new or significantly improved product, service or process, including but not limited to production, building or construction processes, a new marketing method, or a new organizational method in business practices, workplace organization or external relations inter alia with the purpose of helping to solve societal challenge or to support the Europe 2020 strategy for smart, sustainable and inclusive growth*". For further details: https://ec.europa.eu/environment/gpp/versus_en.htm. To help implement public procurement of innovation, it is worth mentioning the European Assistance for Innovation Procurement Initiative which provides free of charge technical and legal assistance to individual procurers to implement PCPs and PPIs. For further details: http://eafip.eu/about/

[37] For further details: http://www.sppregions.eu/about-spp-regions/

[38] Procura+ European Sustainable Network is a network of European public authorities that connect, exchange and act on sustainable and innovation procurement. For further details: http://www.procuraplus.org/manual/

[39]For further details see "*European Green Deal Call: €1 billion investment to boost the green and digital transition*" avalaible at https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1669

[40] The eight thematic areas are: (1) Increasing climate ambition; (2) Clean, affordable and secure energy; (3) Industry for a clean and circular economy; (4) Energy and

The LIFE program[41] is the EU's funding instrument for the environment and climate action. LIFE contributes to the implementation, updating and development of EU environmental and climate policy and laws by co-financing projects with European added value. The LIFE program is divided into two subprograms, one for environment (representing 75% of the overall financial envelope) and one for climate action (representing 25% of the envelope). The LIFE program is making an important contribution to Europe's transition away from a linear economic model. Since the beginning of the seven-year multiannual financial framework in 2014, LIFE has further increased its support for circular economy-related actions.

Among the projects funded under the LIFE scheme, REBus (Resource Efficient Business Models) [42] has been dedicated to illustrate how public procurement can enhance circular business models. The project supported procurement departments, users and suppliers of goods and services 'think circular' and about how to retain value of materials within the supply chain from the very first request for a product or service through to an intensive market dialogue on the solutions needed. This notably includes the possibilities for reuse and recycling of the materials on offer.

COSME is the EU program for the Competitiveness of Small and Medium Sized Enterprises (SMEs) running from 2014 to 2020. The COSME program addresses four main objectives: ease access to finance for SMEs by providing loan guarantees and risk capital (access to finance); help companies access new markets, within and outside the EU (access to markets); create a business-friendly environment by reducing the administrative burden on SMEs (improving conditions for businesses); encourage an entrepreneurial culture (encouraging entrepreneurship). The Executive Agency for Small and Medium-Sized Enterprise (EASME) manages the parts of the COSME work program addressing access to markets, improving conditions for businesses and encouraging entrepreneurship on behalf of the European Commission. Financial instruments under access to finance are managed by the European Investment Fund (EIF).

In addition to the abovementioned programs, there are a lot of initiatives at European level that support circular economy, first of all the European Circular Economy Stakeholder Platform, a joint initiative by the European Commission and the European Economic and Social Committee, which allows for sharing of news, events and good practices on circular economy and circular public procurement as well. [43] The PROCURA+ European Sustainable Procurement Network[44] of European public authorities and regions that connect,

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resource efficient buildings; (5) Sustainable and smart mobility; (6) Farm to fork; (7) Biodiversity and ecosystems; (8) Zero-pollution, toxic-free environments. The two horizonal areas refer to strengthening knowledge and empowering citizens.

[41] For further details: https://ec.europa.eu/easme/en/life

[42] For further details: http://www.rebus.eu.com

[43] For further details: https://circulareconomy.europa.eu/platform/en

[44] For further details: http://www.procuraplus.org

exchange and act on sustainable and innovation procurement and the Procurement of Innovation Platform[45], which is an online hub that targets public authorities, procurers, policy makers and researchers. The Platform consists of three elements: website, Procurement Forum, and Resource Centre. Innovation procurement empowers public authorities to obtain pioneering, innovative solutions customized to their specific needs. It helps local and central governments to provide tax payers with the best possible quality services, while at the same time saving costs.

[45] For further details: https://procurement-forum.eu

CHAPTER II - The Regulatory and Policy framework for Circular Procurement

Scope of this chapter is to set out the policy and regulatory framework for circular procurement, provided that there is no specific act regulating circular procurement as such. So far, circular procurement is conceived as "*an approach to greening procurement which recognizes the role that public authorities can play in supporting the transition towards a circular economy*" [46] , while the common rules on green public procurement constitute the basis for its definition, and the rules for social and innovation procurement represent the reference for broadening its construction and set the stage for a systemic change of approach to production and consumption. In this sense, the chapter will provide a preliminary overview on the recent policy and regulatory developments, in order to identify the existing instruments for implementing circular procurement, at first at European level, then at national and regional level.

2.1. The EU legal and regulatory framework

The notion of Green Public Procurement (GPP) stems from the 1996 Green Paper, EU presented as a consequence of the amendments made to the EC Treaty by the Single Act and the Maastricht Treaty and in consideration of Article 130 of the EC Treaty, which provided that environmental protection requirements had to be integrated into the definition and implementation of other Community policies.[47]

While the Green Paper paved the way, the subsequent Communication entitled "*Integrated Product Policy – Building Environmental Life-Cycle Thinking*" - which the European Commission adopted on 18 June 2003 - definitively pinpointed the core idea at the heart of green procurement.[48] According to the Communication at stake, green procurement implies five key principles: (i) life-cycle thinking, which considers a product's life-cycle and aims for a reduction of its cumulative environmental impacts, from the cradle to the grave; (ii) working with the market, which sets incentives so that the market moves in a more sustainable direction by encouraging the supply and demand of greener products; (iii) stakeholder involvement, which aims to encourage all

[46] European Commission, *Public Procurement for a Circular Economy – Good Practice and Guidance*, cit.

[47] COM(96)583 final, *Green Paper Public Procurement in the European Union: Exploring the Way Forward*, 27 November 1996.

[48] COM(2003)302 final, Communication from the Commission to the Council and the European Parliament, *Integrated Product Policy – Building on Environmental Life-Cycle Thinking*.

those who come into contact with the product to act on their sphere of influence and to foster cooperation between the different stakeholders; (iv) continuous improvement, as improvements can often be made to decrease a product's environmental impacts across its life-cycle, whether in design, manufacture, use or disposal, taking into account the parameters set by the market; (v) a variety of policy instruments, because there are such a variety of products available and different stakeholders involved.[49] In this respect, as common procurement practices were far from embracing such principles, the EU Commission committed to establish the framework conditions for the continuous environmental improvement of all products throughout the production, use and disposal phases of their life-cycle.

Such commitment was eventually transposed in Directive 2004/18/EC[50], though it was thanks to the 200851 that public authorities gained the guidelines to effectively include environmental protection objectives in their procurement procedures and processes. This Communication was in fact to provide guidance on how to reduce the environmental impact caused by public sector consumption and thence on how to use green public procurement to stimulate innovation in environmental technologies, products and services, on the assumption that green public procurement is "…*a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured*".[52]

Being that the background, the existing framework for green procurement is primarily based on the EU Directives on Public Procurement, meaning Directive 2014/24/EU[53] and Directive 2014/25/EU[54], as well as on the green public procurement criteria adopted from time to time 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

[49] Ibidem, page 5.

[50] Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts.

[51] COM(2008)400 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *Public procurement for a better environment*, 16 July 2008.

[52] Ibidem, page 4.

[53] 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.

[54] 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.

criteria are split into exclusion grounds,[55] selection criteria,[56] technical specifications and labels,[57] award criteria[58] and contract performance terms and conditions[59].

The criteria can be distinguished in two types: (i) core criteria — which are designed to allow for easy 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.[60] In addition to legal and regulatory acts, there are a number of supporting instruments, such as the new edition of the Buying Green! Handbook that has been specifically designed to explain how best to integrate environmental considerations into public procurement procedures.[61]

2.1.1 Innovation procurement for systematizing circular procurement

Once acknowledged that the definition of circular procurement cannot ignore that of green procurement, quite plainly it comes that circular procurement does not end with implementation of green procurement criteria.[62] Differently from green procurement, which is very related to goods, circular procurement tends to put products in relation with processes. Its aim is indeed that to close the loop and so achieve a sustainable balance between economic, social and environmental aspects.[63]

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[55] EU Directive 2014/24, Art. 57.

[56] 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.

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

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

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

[60] 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.

[61] 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 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.

[62] On the subject of innovative procurement, see S. PONZIO, An overview of innovative procurement in Eastern Europe in G. M. RACCA - C. R. YUKINS, Joint Public Procurement and Innovation: Lessons Across Borders, Bruxelles, Bruylant, 2019 and S. PONZIO, An overview of innovative procurement in Ius Publicum Network Review, Issue 2/2018.

[63] In this, circular procurement falls into the broader category of sustainable procurement. On the matter, the United Nations has developed detailed guidance for the UN system, which address all the aspects of sustainability: "*Buying for a Better World*".

In order to make this happen, public procurers shall consider that there is no one-fits all solution to implement circular procurement and that implementation of circular procurement eventually calls for an original understanding of the existing rules and an original combination of the existing instruments. On this understanding, the regulatory framework of reference broadens accordingly. Given the 2014 EU Public Procurement Directives, the following sections are particularly worth drawing attention to: Article 42 (Technical specifications) and Annex VII (Definition of certain technical specifications) of Directive 2014/24/EU, Article 60 (Technical specifications) and Annex VIII (Definition of certain technical specifications) of Directive 2014/25/EU for the definition of technical specifications; Article 43 (Labels) of Directive 2014/24/EU, Article 61 (Labels) of Directive 2014/25/EU for the conditions for using labels; Article 67 (Contract award criteria) of Directive 2014/24/EU, Article 82 (Contract award criteria) of Directive 2014/25/EU for the lowest price award and life-cycle costing (LCC); Article 31 (Innovation partnership) of Directive 2014/24/EU for the establishment of innovation partnerships; Article 14 (Research and development services) and Recital 47 (for the relationship with Pre-commercial Procurement) of Directive 2014/24/EU; Article 40 (Preliminary market consultations) of Directive 2014/24/EU for preliminary market consultation.

According to existing legislation, innovation procurement includes both Public Procurement of Innovative Solution (PPI) and Pre-Commercial Procurement (PCP). Briefly, Public Procurement of Innovative Solutions (PPI) happens when the public sector uses its purchasing power to act as early adopter of innovative solutions which are not yet available on large scale commercial basis. Differently, in Pre-Commercial Procurement (PCP), public procurers buy R&D from several competing suppliers in parallel to compare alternative solution approaches and identify the best value for money solutions that the market can deliver to address their needs; R&D is split into phases (solution design, prototyping, original development and validation/testing of a limited set of first products) with the number of competing R&D providers being reduced after each R&D phase.[64] In the end, this is a process that could be very helpful also to develop capacity-building and accompany public procurers in the process of understanding how to actually put circular procurement into practice. The diffusion of circular procurement is in fact still at a preliminary stage and guidance tools are essential in order to transpose what is written in the policy papers recently adopted at European level on circular economy and circular procurement in particular in common procurement practices. As mentioned, serial application of green public procurement criteria constitutes

[64] For further details: C(2018) 3051 final, Commission Notice, *Guidance on Innovation Procurement.* More specifically on Public Procurement of Innovative Solutions (PPI) see the project PPI2Innovate: https://www.interreg-central.eu/Content.Node/PPI2Innovate.html. On the relevance of the price-quality ratio see Opinion of the European Committee of the Regions — Implementation report on public procurement, (2020/C 39/09).

the basis, but then implementation of circular procurement needs a step further.

At least three levels of models for implementing circular procurement can be considered: (i) the system level model, which regards the contractual instruments that the purchasing authorities can use to ensure circularity, such as supplier take-back agreement, where the supplier returns the product at the end of its life in order to reuse, remanufacture or recycle it, or product-service systems, where the contract provides both services and products; (ii) the supplier level model, which describes how suppliers can build circularity into their own systems and processes in order to ensure the products and services they offer meet circular procurement criteria; (iii) product level model, which focuses solely on the products that suppliers to public authorities may themselves procure further down the supply chain.

The decision on which model fits best really depends on the needs of the public authority at stake, the sustainability improvements it wants to pursue, its organizational capacity. Strictly speaking, circular procurement is expected to reflect the European Waste Hierarchy: reduce, reuse, recycle and recover. Practically, that means to reduce the procurement of new products; increase reusability of available products; recycle products that cannot be reused anymore; recover waste to use it for a different purpose and, whenever possible, purchase recovered products. That is the very essence of circular procurement and there are various ways to implement it. Whatever the model of procurement would be, in the end though, what makes the difference is the ability to scale up circular practices and take them at a systemic level.

Table 1: Circular Procurement models (Sources: EU Commission, *Public Procurement for a Circular Economy. Good practice and guidance*, 2017; SPP Regions (2017), *Circular Procurement Best Practice Report*)

CIRCULAR PROCUREMENT MODELS		
System level	**Supplier level**	**Product**
• Product service system • Public Private Partnership • Cooperation with other organizations on sharing and reuse • Rent / lease • Supplier take-back systems including reuse, recycling, refurbishment and remanufacturing	• Supplier take-back system • Design to disassembly • Repairability of standard products • External reuse / sale of products • Internal reuse of products	• Materials in the product can be identified • Products disassembled after use • Recyclable materials • Resource efficiency and Total Cost of Ownership • Recycled materials

In order to make a change at systemic level, combination of green procurement criteria and social criteria could definitively be an option. That would help to shift focus from goods/services to processes and thence make public procurement a strategic tool to drive social policies forward. In the end, circular procurement it is not only a matter of procurement intended as mere acquisition of products, works, services, but rather of control of possible relationships between procurer and supplier in the entire contract life-cycle, if not between procurer and multiple suppliers. Circular procurement calls for forms of collaboration between procurer and supplier that could make it easier to meet the objectives of reduce, reuse, recycle, recover in procurement, in a way to fulfill the needs of the procurer by delivering social impact at the same time. In the current health emergency situation caused by Covid-19, interaction with the market may offer good opportunities to take into account strategic public procurement aspects, where environmental, innovative and social requirements, including accessibility to any services procured, can be integrated in the procurement process.[65] The cooperation between public buyers and industrial and innovation ecosystems can stimulate innovation and increase efficiency of public investment in order to facilitate the matchmaking of demand, including through setting platforms that allow interactions between buyers and suppliers for better sourcing strategies.[66]

Often, buying responsibly and ethically can create incentives for entrepreneurs to commit to a more sustainable management of the production process, which eventually can bring benefits in terms of more sustainable management of the consumption process as well. In this regard, it might be useful to consider that in 2011, the European Commission has adopted a guide on taking account of social considerations in public procurement, titled "*Buying Social*", and that such guide is now expected to be updated.[67]

In this regard, another interesting document is "*Making Socially Responsible Public Procurement Work: 71 Good Practice Cases*", edited by the European Commission in May 2020. The document is a collection of Socially responsible public procurement (SRPP)[68] good practice and it shows the diversity of

[65] For further details: http://www.oecd.org/coronavirus/policy-responses/public-procurement-and-infrastructure-governance-initial-policy-responses-to-the-coronavirus-covid-19-crisis-c0ab0a96/ ..

[66] EU Council Conclusions, "*Public Investment through Public Procurement: Sustainable Recovery and Reboosting of a Resilient EU Economy*" Brussels, 25 November 2020

[67] For further details: https://ec.europa.eu/info/policies/public-procurement/support-tools-public-buyers/social-procurement_en#buying-social.

[68] Socially responsible public procurement (SRPP) is about achieving positive social outcomes in public contracts. Procurement affects a large number of people, whether as users of public services, those involved in production and delivery, or staff of the buying organisation. Beyond those directly affected, SRPP has the potential to influence the broader market on both the demand and supply sides. SRPP aims to address the impact on society of the goods, services and works purchased by the public sector.

the current application and the range of opportunities available to public buyers to use their procurement strategically to deliver real social outcomes, improving the quality of human lives in Europe and beyond.[69]

As evident from the above, in the absence of comprehensive legislative provisions specifically focusing on circular procurement, given the provisions contained in the Public Procurement Directives, the regulatory framework of reference can very much vary depending on how much procurers intend to engage with circularity and transpose it in procurement processes. That is a decision that eventually results from the level of understanding of circular principles and the needs assessment. That acknowledged, the regulatory framework of reference can further vary depending on whether on the market are already available solutions that, in relation to the specific needs at stake, could sufficiently help to develop practices compliant with reduce, reuse, recycle, recover, principles. In case the solutions available on the market are not sufficient, innovation procurement could definitively be an option to explore innovative ways to implement life-cycle management and so spur circular transition from the demand side.[70]

2.2. The Italian legal and regulatory framework

Italy has demonstrated to be quite responsive to transformative trajectories driving sustainability into public procurement procedures, far before the official introduction of GPP criteria.[71]

While the mentioned acts represented sporadic attempts to include sustainability criteria in public procurement strategies and so reduce environmental risks, through the adoption of subsequent 2007 Budget Law[72] a more comprehensive set of actions was foreseen, including the funding of the implementation of an "*Action Plan for the Environmental Sustainability of the Public Sector Consumption*". The integration of environmental sustainability criteria

[69] For further details: https://op.europa.eu/en/publication-detail/-/publication/69fc6007-a970-11ea-bb7a-01aa75ed71a1

[70] Pursuant to Directive 2014/24/EU, Article 2 (22), innovation means "*the implementation of a new or significantly improved product, service or process, including but not limited to production, building or construction processes, a new marketing method, or a new organizational method in business practices, workplace, organization or external relations inter alia with the purpose of helping to solve societal challenges or to support the Europe 2020 strategy for smart, sustainable and inclusive growth*".

[71] There were already in place laws proving an increasing attention on environmental protection: Legislative Decree no. 22/1997 provided for the obligation to purchase goods made of recycled material for at least 30% of the annual needs; Law no. 488/1999 provided for the obligation to use organic products in catering procurement; Law no. 443/2001 called for the adoption at regional level of implementing acts providing for the replacement of at least 40% of the annual needs of plastic products with recycled plastic; Law no. 448/2001 provided for the obligation to purchase retreaded tyres for at least 20% of the annual needs.

[72] Law n. 296 of 27 December 2006 "Disposizioni per la formazione del bilancio annuale e pluriennale dello Stato" (Budget law for 2007).

was provided according to the following principles: a) reduction of the use of natural resources; b) replacement of non-renewable sources of energy with renewable sources of energy; c) minimization of waste generation; d) reduction of polluting emissions; e) mitigation of environmental risks.[73] These environmental sustainability criteria were to be initially applied to the following product categories: a) furniture; b) building material; c) road maintenance; d) public green maintenance; e) lighting and heating; f) electronics; g) textiles; h) stationery; i) catering; l) hygiene material; m) transport sector.[74]

Afterwards, the Ministry of the Environment and the Ministry of Economy and Finance approved Interministerial Decree[75] and so adopted the Action Plan on Green Public Procurement, partially amended by subsequent Decree of the Ministry of the Environment 10 April 2013. Given the Action Plan, implementation measures were approved.[76] Amongst others, was introduced the obligation for public procurers, including central purchasing bodies, to integrate into procurement documents certain technical specifications and contract terms appositely defined by the Ministry of the Environments. That was in fact the initial step on the path that resulted in GPP criteria being mandatory at national level.

That eventually happened with the adoption of Italian Public Contracts Code,[77] which currently constitutes the Public Procurement Code. In the legislative text, environmental protection is clearly mentioned amongst the principles governing contract award together with the principles of economy, effectiveness, impartiality, parity of treatment, transparency, proportionality, publicity, environmental protection and energy efficiency.[78] Moreover, contracting authorities are generally obliged to include GPP criteria in procurement procedures.[79] The monitoring is carried out by the National Anti-Corruption Authority.[80]

Based on that, from time to time the Ministry of the Environment introduces GPP criteria in new areas, ranging from paper, cartridges and toner for printers, textiles, furniture, catering equipment, urban waste etc.[81] In its acts the Ministry of the Environment usually provides also guidelines on how to include in procurement procedures and quite clear references to general procurement rules. Depending on the specific area, the inclusion of GPP criteria

[73] Law n. 296 of 27 December 2006, par. 1126.
[74] Law n. 296 of 27 December 2006, par. 1127.
[75] Interministerial Decree, 11 April 2008.
[76] Law 28 December 2015 no. 221.
[77] Legislative Decree 18 April 2016, no. 50.
[78] Legislative Decree 18 April 2016, no. 50, Art. 4 and Art. 30.
[79] Legislative Decree 18 April 2016, no. 50, Art. 34.
[80] For further details: https://www.anticorruzione.it/portal/public/classic/Servizi/ServiziOnline/AppaltiVerdiPAN_GPP
[81] At the following link you could find the complete list of GPP criteria in place at national level: http://www.minambiente.it/pagina/i-criteri-ambientali-minimi

might affect the definition of technical specifications,[82] the exclusion grounds,[83] the selection criteria,[84] the award criteria,[85] and contract execution.[86] The fact that implementing acts are still expected definitively proves that the framework is constantly evolving and that the intention of the legislator is that to broaden the scope of green procurement in a way to make an impact at systemic level.

2.2.1 Towards a model of circular economy for Italy

The increasing attention on circular economy is confirmed by the policy paper "*Towards a model of circular economy for Italy*", that the Ministry of the Environments, together with the Ministry of Economic Development, has published in 2017, after the lapse of a period in which a preliminary draft had been submitted to open consultation.[87] In this regard, it is worth mentioning that an entire paragraph of this policy paper is dedicated to green public procurement and green public procurement criteria, with particular focus on those criteria promoting new models of production and consumption; the paragraph ends highlighting the interactions between green and social criteria and the benefits that such interactions could bring to the overall system. Indeed, several acts promoting circular economy principles had been adopted even before 2017, both at national and regional level, not in response to a comprehensive strategy on the matter though. That is why the adoption of such policy paper shall be considered material in the process of transition.

Circular economy is gaining momentum at national level. The National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) has recently launched the Italian Circular Economy Stakeholder Platform (ICESP). The ICESP is a "network of network" bringing together circular economy initiatives, experiences, critical issue and perspectives from Italy which can be represented at European level. In addition to that, a lot of initiatives are flourishing at regional and local level and new supporting measures are expected, both in public and private sector.

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[82] Legislative Decree 18 April 2016, no. 50, Artt. 68-69.

[83] Legislative Decree 18 April 2016, no. 50, Art. 80.

[84] Legislative Decree 18 April 2016, no. 50, Art. 83.

[85] Legislative Decree 18 April 2016, no. 50, Artt. 93, 95, 96.

[86] Legislative Decree 18 April 2016, no. 50, Art. 100.

[87] Ministero dell'Ambiente e della Tutela del Territorio e del Mare – Ministero dello Sviluppo Economico, *Verso un modello di economia circolare per l'Italia – Documento di inquadramento e di posizionamento strategico*, 2017. See in particular paragraph 5.3. "*Public Sector*" and subparagraph 5.3.1. "*Green Public Procurement and GPP Criteria*".

2.3. The regional context, the Piedmont Region

Within the national context, Piedmont Region stands out for its pioneering role and specifically for the project Acquisti Pubblici Ecologici – A.P.E., which has been recently included amongst best practices of green public procurement by the Ministry of the Environment. The idea at the base of project A.P.E. is quite similar to that behind the definition and application of GPP criteria, provided that the Metropolitan City of Turin and ARPA (Regional Agency for the Protection of the Environment) started the project A.P.E. in 2003. Up to now, 45 institutions are involved in project A.P.E.

In 2007 the regional coordination for Local Agenda 21 was established. It was the 11th of May, 2007, when the original Memorandum of Understanding adopted through Regional Resolution no. 17-5698 of the 16th of April 2007, was signed by Piedmont Region and other 20 subjects.[88]

In addition to that, a lot of other initiatives are emerging (public and private partnerships, research projects, information desks, living labs, startup hubs, innovation centers). Indeed, there is a breeding ground for taking Piedmont a step further down the road of sustainable development, but also a need for help to understand how to apply public procurement instruments to put circular economy principles into practice.[89]

In order to make this happen, a lot of effort has been made especially in the field of education and dissemination. All this in line with the guidelines contained in the Protocol "*Piedmont Region for Green Education*".[90] Scope of this document is that to set the stage for strengthening the green community flourishing at local level and open it to public and private subjects. At the moment, it has been already signed by 37 subjects.[91]

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[88] Agenda 21 is one of the outcome documents of the UN Conference on Environment and Development (UNCED) or Earth Summit, held in Rio de Janeiro, Brazil, 1992.

[89] Further information on the project A.P.E. are available at the following link: http://www.comune.torino.it/ambiente/ape/index.shtml. This is the page of the website of the Ministry of the Environment where the project A.P.E. is explicitly cited amongst the best practices of green public procurement at national level: http://www.minambiente.it/pagina/il-gpp-negli-enti-locali.

[90] Piedmont Region, resolution no. 51-3451 of June 6, 2016.

[91] Regione Piemonte; MIBAC – Soprintendenza archeologia, belle arti paesaggio per la città metropolitana di Torino; Comune di Asti, Bra, Ivrea, Moncalieri, Pinerolo, San Mauro Torinese; Provincia di Asti; Città Metropolitana di Torino; Arpa Piemonte; Camera di Commercio di Torino; MIUR – Ufficio Scolastico Regionale del Piemonte; Rete Green Piemonte; ITS – Energia Piemonte; Ires Piemonte; Istituto Superiore Mario Boella; CNR – Ircres; Indire – Istituto Nazionale di Ricerca e Innovazione per la scuola italiana; Hydroaid - Scuola Internazionale dell'acqua per lo sviluppo; Formedil Piemonte; Environment Park S.p.A.; Istituto per l'ambiente e l'educazione Scholé Futuro onlus; Museo A come Ambiente (MacA); Collegio Geometri Torino; ordine Architetti Torino; Ordine Dottori Commercialisti Provincia di Cuneo; Federazione regionale Coldiretti Piemonte; CIA Piemonte; Confindustria Piemonte, Confcooperative Pie-

Further initiatives were implemented. On May 31, 2018, the Piedmont Region has set a workshop on "*Piedmont Region for Green Education within 2030 Agenda*". That was the occasion to discuss on the steps taken after the adoption of the aforementioned Protocol "*Piedmont Region for Green Education*" as well as new instruments to promote green and circular economy.

2.3.1 Key stakeholders at regional level and their role in Circular Procurement

Within the context of Italy, Piedmont has always been characterized by proactive institutions, willing to embrace new strategies and approaches to green and circular economy, including the encouragement of economic operators toward social and environmental goals in order to achieve sustainability.

The public procurers

The transition has been driven by Regione Piemonte, which has played a pioneering role firstly in terms of education and capacity building through specific policies aimed at enhancing political participation, to develop critical thinking skills and broadening the horizons of citizens in order to achieve a change in lifestyles creating a sustainable culture within the region.

Regione Piemonte cooperates with other public and private actors to shape environmental policies overcoming the distinction between economics, ecology and social cohesion. Success of the innovation process of Piemonte is, in fact, mainly related to the deep synergy that the stakeholders have created among themselves, indeed Regione Piemonte strictly cooperates with other fundamental institutional actors. First of all IRES Piemonte, a well-known research institute that carries out its research activity in the socio-economic field, supports Regione Piemonte and other institutions and local authorities within the region with regards to their decision making processes. Moreover, Città Metropolitana di Torino undertakes various actions to aims to strengthen the dissemination of experiences and good practices in the field of green education and involves different subjects of the region. Innovative solutions can be tested by private and public companies thanks to initiatives such as Torino City Lab: Torino becomes an open laboratory of frontier innovation able to attract companies and skills to guide the development of the "City" of the future. Also the academic institutions strongly contribute to the spread of education and information regarding circular economy. Indeed, the University host and supports various initiatives usually in cooperation with other academic actors of Piemonte. Perfect example of this synergic context is the Circular Economy Hub sponsored by Comune di Torino, Città Metropolitana and

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monte; Unione Industriale di Torino; CNA Piemonte; Confcommercio Piemonte; Fondazione per l'Ambiente Teobaldo Fenoglio ONLUS; Museo Nazionale del Cinema – Festival Cinemabiente; Legambiente Piemonte e Valle d'Aosta; Slow Food Italia.

Regione Piemonte, supported by Architectural and Design Department of Politecnico di Torino, PhD in Innovation for the circular economy of Università degli Studi di Torino, Italo Calvino Library of Università degli Studi di Scienze Gastronomiche. The same Innovation for the Circular Economy PhD programme was recently created by UniTo in collaboration with Città Metropolitana di Torino and Intesa SanPaolo; PoliTo instead supports several initiatives. UniTo and PoliTo also cooperate with ICxT (Centro Interdipartimentale di innovazione, University of Turin) hosted at the Campus Einaudi, created to develop innovative technological solutions for enterprises connected to Piedmont in the fields of circular economy, smart city, energy, food, human computer interaction, personal technology, internet of things e smart factory. The aim is to offer multidisciplinary competences based on innovative techniques that put University in the middle of a new innovative system.

Then, with regards to the implementation of these projects, Regione Piemonte stimulates the cooperation between public authorities on different regulatory levels offering the instruments to create the necessary framework. ARPA Piemonte plays a crucial role since it guarantees the implementation of the policies of Regione Piemonte in the field of prevention of environmental risks and environment safeguard, indeed ARPA Piemonte carries out supervision and assessment activities with a technical, but still multidisciplinary, approach. SCR Piemonte S.p.A. takes part in the implementation process too, but this corporation, which is totally controlled by Regione Piemonte, is more focused on public expenditure. The activities of SCR Piemonte S.p.A. are aimed at rationalizing public expenditures and optimizing the procedures used to select public contractors in matters related to regional interest, in particular with regards to infrastructures, transportations, telecommunications and health care. Institutions of Piemonte actively participate in the shift towards a circular economy reducing their own environmental impact and undertaking several actions in relation to the production and management of special waste in Piedmont, with the objectives of reducing the relevant production, identifying recycling or reusing solutions to allow for resource saving and for a sustainable management of waste, encourage research and experimentation of new methods to recycle waste, support the use of recycled waste by public entities pursuant to GPP principles.

The suppliers

On the one hand administrative bodies set environmental criteria to be fulfilled in their procurement processes, and on the other hand companies need to demonstrate the possession of environmental requirements and compliance to eco-management systems by preserving natural resources, limiting pollutant emissions and risks. Therefore, since a connection between the two sides of GPP is needed, several actors try to support and advises companies on the fulfillment of environmental regulations related to GPP. Unioncamere Piemonte, Confindustria Piemonte and Confapi Piemonte have a key role in the diffusion of environmental management tools among SMEs by organising information campaigns and ad hoc seminars, but since they all have a specific

role in this scenario it is fundamental to analyze each one of them individually. Unioncamere Piemonte promotes and implements initiatives to support the development of economy and of productive sectors on the regional territory, coordinating the activities of the associated Chambers, while Confindustria Piemonte also supports local associations not only by representing them before the institutional bodies, but also helping entrepreneurs to share and compare ideas among themselves in order to create the conditions to develop their business in compliance with the growth criteria set at a regional level and to strengthen their competitiveness. Confapi Piemonte is the center and the cornerstone of the Confederazione Italiana della Piccola e Media Industria Privata since it promotes the real and concrete interests of all small and medium enterprises within the regional territory.

Exchange and learning process taking place at network level is another important factor in the process of sharing the best experiences and practices. All these institutions offer various tools to companies to take advantage of mutual contamination of good practices through the creation of fruitful networks. In this context a crucial point of reference for foreign and external companies interested in investing and settling in Piemonte is the Centro Estero per l'Internazionalizzazione (CEI) which can supervise these processes in order to ensure a positive outcome.

The innovation agencies

Polo Innovazione Clever (Cleantech&Energy innoVation clustER) – Parco Scientifico Tecnologico per l'Ambiente Environment Park, is an innovation accelerator for private companies and public administrative bodies. It is one of the 7 Innovation Poles of Regione Piemonte and operates in the fields of energy and clean technologies, in particular, in the technological and operational areas of energy efficiency, water resources, circular economy, infrastructures and distribution networks, sustainable mobility and clean solutions; its objective is to support its associates in the development of their innovation path, through the provision of services, technical and methodological support other than dedicated infrastructures. Polo Innovazione ICT – Fondazione Torino Wireless, instead, is focused on funding R&D, business networking and knowledge improvement: it helps innovative SMEs and start-ups, large companies, research institutions operating on the regional territory to enhance their competitiveness by supporting them in the process of identifying resources for research, developing skills and providing business networking opportunities. These subjects guarantee specialist assistance in the various phases of the investment project and provide information on the numerous opportunities offered by the region, especially with regards to energy conservation, waste disposal, clean energy, new materials and assistance for fund raising. Intesa Sanpaolo coordinates and supports several kinds of initiatives, projects and institutions. Its own Innovation Center accelerates the economic development of Italian enterprises with regards to megatrend of society, such as Industry 4.0 and Circular Economy, with the aim of exploring new business models in order to create the assets and skills needed to support companies'

competitiveness and act as an engine for the new economy in Italy. Intesa Sanpaolo Innovation Center works in the ecosystem of innovative startups to support them with their scalability and internationalization processes, Intesa Sanpaolo Innovation Center creates a network of relationships with companies, incubators, research centers, universities and local and international companies: an open network that increases efficiency, competitiveness and international scalability.

This process of spread of ideas also occurs at a regional and inter-regional level, for instance ARPA Piemonte took part in IMPEL (European Union Network for the Implementation and Enforcement of European Law) “Landfill &Circular Economy” and “Make It Work” meetings about the End of Waste e Ecoinnovation organized together with ARPA Veneto and Regione Piemonte collaborated with the abovementioned actors in the SPPRegions European Project. As an eye checking and monitoring the status of the technological and organizational innovation activities developed by local companies, the Osservatorio sulle imprese innovative puts together a scientific purpose and the promotion of innovative businesses in Turin, in Italy and abroad.

CHAPTER III – Best Practices on Circular Procurement

3.1. Current practices on circular procurement at Regional level

The following cases and projects are considered to have the big impact on the Regions strategy to boost the Circular and Green Public Procurement application.

SPPRegions is a project which has received funding from the European Union's Horizon 2020 research and innovation program to promote the creation and expansion of European regional networks of municipalities working together on sustainable public procurement (SPP) and public procurement of innovation (PPI). SPPRegions offers several services:

- Support with developing SPP networks
- *Assistance with sustainable tendering*
- Access to specialist workshops and webinars
- Mentoring from existing SPP Networks

As for the Piemonte region, Italian partner participates in the project with the Metropolitan City of Torino and Arpa Piemonte. Experience of the both networks with tendering was impressive. In the frame of the SPPRegions project, within one of its services offered; Assistance with sustainable tendering in total of *40 eco-innovative tenders* were organized focusing on: energy savings in public buildings; vehicles and transport; and food and catering.

Within this framework the most notable ecological tenders completed by City of Turin and Metropolitan city were noticed in 2009-2011. On May 2009 City of Turin published a contract notice for paper products. The subject of Procurement was “three- year paper supply with low environmental impact for photo producers and laser printers for the sectors and services of the Municipal Administration (the period 2009/2010/2011).[92]

The specific criteria and technical specifications used were *“the paper used must be made from bleached virgin wood fibers without the use of chlorine gas from forests managed to apply principles and measures to ensure sustainable forest management. Recycled paper must be produced from at least 75% recycled fibers, of which at least 65% from post-consumption*

[92] More details on http://www.cittametropolitana.torino.it/cms/ambiente/agenda21/ape

and bleached without the use of chlorine gas. The minimum white degree must be equal to ISO brightness 80% or CIE whiteness 90."

The tender was awarded on the basis of lowest price.

Another initiative which absolutely needs to be stressed is the *APE network*. The network was created in 2003 with the purpose of implementing Green Public Procurement (GPP) in the county area of Turin (now Città Metropolitana di Torino, GT network coordinator). The network is made up of 48 organizations which goal is to strengthen the implementation of sustainable public procurement of innovation (SPPI) within the institutions. Lately, in April 2017 the "S.O.S. Acquisti Verdi" took place, organized with the aim of raising awareness among and training public administrations. The event was attended by more than 200 people and included an afternoon part focusing on the A.P.E. Network. Participants worked in groups on the topics of *including environmental criteria in public procurement procedures*; learn how to perform monitoring and to find a procedure to introduce GPP in the organization.

Within this context the APE Network SCR Piemonte S.p.A., the central purchasing body for the Piedmont Region in Italy awarded contracts within 6 lots[93] *to provide organic catering services to hospitals across the region.* The tender stipulated that a minimum of 40% by weight of vegetable, fruit and dairy products must be organic (with a further 20% from integrated production, PGI, PDO and STG origin). 15% of meat, and 20% of fish, must also be organic. Other environmental criteria included compliance with EU Ecolabel criteria for cleaning and tissue products, use of low emission delivery vehicles, reusable plates, cups and cutlery, energy efficient kitchen appliances, and comprehensive waste management requirements. It is estimated that a minimum of 84 tonnes CO2 will be saved annually.

Again within the APE Network in a tender for vending machines, the University of Torino is focusing strongly on eco-innovation. The tender[94] centralizes the service and optimizes the number of machines available - reducing from 279 to 226 machines.

Given the fact that the CP is a new concept which is a subject to be promoted by policy makers to first of all define it then promote it after which at last to integrate the concept into the already exciting GPP and SP policies it is remarkable to note some procurements of the regions which can be considered as a very close trials to CP implantation which contains CP award criteria and objectives. Within this context APE Network is going to mentioned many times as one of the most important regional stakeholders which can provide cases

[93] Tender model avallabile: http://sppregions.eu/fileadmin/user_upload/Tenders/APE/SPP_Regions_Tender_model_-_SCR_Hospital_Catering_Final_updated.pdf.

[94] Tender model available:
http://sppregions.eu/fileadmin/user_upload/Tenders/APE/SPP_Regions_Tender_model_template_-_Unito_vending_Final.pdf.

for the analyses. As part of its policy on environmental impact mitigation network lunched ad tender to contract for the supply of 20 vehicles with reduced environmental impact (all meeting EURO VI standard), one lot focused on the procurement of 8 electric vehicles. The purchase was carried out as a joint procurement[95] by a consortium of 17 municipalities in the province of Turin and included market engagement events, through which the consortium of cities presented its environmental policy and future intentions to purchase new electric vehicles. The fleet of 8 vehicles will lead to an estimated 17 tonnes reduction of CO2 emissions in relation to fuel use, an improvement of 66%. In energy terms, the use of these vehicles leads to a primary energy saving of 33%, equal to 27.5 MWh/year.

By continuing the topic of transpiration, it is worth to highlight the Piedmont Region's experience. A joint procurement for the purchase of 19 electric buses and 10 years of full-service maintenance was conducted. The tender[96] was part of a program to promote the introduction of electric buses into regional transport operators' fleets. The call for tender included technical specifications on the batteries, the charging stations and the service maintenance. The procurement is expected to save 769 tonnes of CO2 emissions per year, a Primary Energy saving of 1.62 GWh per year and financial savings of €50,000 over 10 years.

Instead for the topic of energy the most notable cease for the Piedmont Region were as following. The Central Purchasing Body of Piedmont Region, in collaboration with the Metropolitan City of Turin and ARPA Piedmont, in the context of APE Network, conducted a joint procurement for 500 GWh electricity. The tender specifications[97] included a quest for a minimum 50% electricity to be procured from renewable sources and certified with Guarantees of Origin. The tender is expected to lead to 150,000 tons of CO2 savings and 8.000 €/GWh financial savings.

The Polytechnic of Turin conducted the pilot installation of 16 self-regulating LED lamps at the Department of Control and Computer Science. The LED lighting adjusts according to light as well as to the presence of people. The lights' tubes communicate with each other to maintain uniform brightness and have low maintenance costs. Following the purchase[98], both a life cycle costs

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[95] The tender documents available:
http://www.sppregions.eu/fileadmin/user_upload/Tenders/SPP_Regions_Tender_model_-_CIDIU_Final.pdf.

[96] The tender documents available:
http://www.sppregions.eu/fileadmin/user_upload/Tenders/APE/spp-regions-tender-model-GTT-eng_Final.pdf

[97] the tender information available:
http://sppregions.eu/fileadmin/user_upload/Tenders/SPP_Regions_Tender_model_-_SCR_Green_Energy_final.pdf.

[98] The tender documents available:
http://sppregions.eu/fileadmin/user_upload/Tenders/tender_model_LED_lamps_final.pdf

and environmental impacts assessment will be undertaken. The tender is expected to save 0.9 tons of CO2 emissions per year.

By continuing, the discourse of the initiatives followed by the Piedmont Region aimed at supporting and boosting the application of circular and green procurements it is important to tress the crucial role of SMEs dimension and their awareness of meter. Regional authorities across Europe are aware of the challenges and issues regarding SMEs dimension. They know the importance of the contribution that can be expected from competent cluster organizations supported by a cluster policy.

With this regard *CLUSTERS3 project*[99] financed under the Interreg Europe was lunched to support the cluster policies, to enhance the capability of successful cooperation among SMEs by co-financing activities or providing technical assistance. SMEs are the true back-bone of the regional economies, but due to the lack of dimension they cannot face the global challenges alone. Cooperation is a must for SMES to succeed. Italy participates to the project with Piedmont Region.

Another similar initiative with Piedmont Region participation is the *Public Policy Living Lab (P2L2)*[100] with the aim to support its innovation ecosystem development. P2L2 is an Interreg project with the European Commission. It supports the EC's National/Regional Research and Innovation Strategies for Smart Specialisation (RIS3). These strategies, among other things, focus on enhancing each region's particular strengths, competitive advantages and potential for excellence. For example, one of the project deliverables – the limited mapping tool will soon help different regions align development strategies by reducing overlaps and gaps, and by finding complementarity and opportunities for European collaboration.

Within this context a huge contribution to Regional's business ecosystem development provides *Intesa-San Paolo Innovation Center*.[101] The Center; the business accelerator that promotes innovation, identifies new technologies that can positively impact the economic development of the Region. The center is the Global Partner in the foundation of Circular economy standard BS 8001[102]. *The center leads the mission to identify and evaluate the "circularity"*

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[99] The Project information can be found by https://www.interregeurope.eu/clusters3/

[100] The Project information can be found by https://www.interregeurope.eu/p2l2/

[101] More details by https://www.intesasanpaolo.com/it/news/innovazione-e-fintech/acceleratori-di-imprese-e-startup-intesa-san-paolo-innovation-center-a-prova-di-futuro.html

[102] Published in May 2017, BS 8001 is the first practical framework and guidance of its kind for organizations to implement the principles of the circular economy and has been written in way so that it can be used wherever they are in the world. It is intended to apply to any organization, regardless of location, size, sector and type. It will be useful to those with varying levels of knowledge and understanding of the circular economy. It provides practical ways to secure smaller 'quick-wins', right through to helping organizations re-think holistically how their resources are managed to enhance financial, environmental and social benefits. More details by:

of companies and approaches, the activities that they apply to maintain its "circularity". The two of the main pillars of the center are: *The Startup Initiative, international acceleration platform (circular economy lab in Milan) and the Tech Marketplace, the platform to put in contact those who offer new technologies and those looking for them (look for finance for projects on the theme circular economy).*

In order to bring businesses closer to the concept of circular economy and to increase their "circularity", it is important first of all to explain and spread the concept of circular economy and its benefits to innovative startups and establish a network of relationships with companies, incubators, research centers, universities and local and international organizations. An open network that facilitates the meeting of demand and supply of innovation and increases efficiency, competitiveness and international scalability of the exchange. Supporting this approach, *Città di Torino established the Torino City Lab*[103] "laboratory" open to all companies (Start-ups, SMEs, Social Enterprises, Industry) who want to test frontier innovation in every sector of the "Smart City".

The City of Turin, meeting the challenge launched in 2011 by the European Commission with the Smart Cities & Communities initiative, has applied to become a Smart City, as a city that, while respecting the reduction of energy consumption of buildings, promote transport and improve the quality of life of its inhabitants in general. Torino Smart City [104]therefore wants a new model of development, both social and economic, credible and made of interventions that are able to affect the life of the city.

The Smart Cities Observatory of ANCI has helped research, technological development and innovation projects related to the themes of the "smart city" evolution of Italian Municipalities towards a more sustainable model of cities and intelligent.

To better manage the journey towards the "intelligent city"[105], the City of Turin and the Torino Smart City Foundation made a February 2013 strategic planning process that lasted more than six months, thanks to the technical collaboration of Torino Wireless.

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https://www.bsigroup.com/en-GB/standards/benefits-of-using-standards/becoming-more-sustainable-with-standards/BS8001-Circular-Economy/

[103] More details on https://www.torinocitylab.it/en/

[104] More details on: http://www.comune.torino.it/ambiente/smart_city/index.shtml

[105] The development of the Smart City Master Plan for Turin Smart City SMILE - Smart Mobility, Inclusion, Life & Health, Energy. The Torino Smart City project is in continuity with the approval of the TAPE - Energy Action Plan in Turin (pdf), a program of 40% CO2 emissions by 2020. The plan is one of the actions required by the city's participation in the Covenant of Mayors, an initiative of the European Commission, signed by the City on 10 February 2009, which anticipated the intention of the Unit to stimulate a change of mentality in municipal administrations in line with the Kyoto Protocol instructions.

A part the strong networking activity described below the Piedmont Region participates to the European initiative supporting the concept of Sustainable Public Procurement. With this regard it is impornat to stress the significance of the project *STEPPING (Supporting The EPC Public Procurement IN Going-beyond) project*[106] coordinated by Piedmont Region. The project aims to test a new approach of application of *Energy Performance Contracts (EPC) scheme in the design and awarding of energy efficiency* intervention for public building stock in order to develop validated guidelines on MED EPC to be transferred and Disseminated to MED Public institutions. The project aim is to understand if the Energy Performance Contracts (EPC) are always the best solution for energy efficiency plans of public buildings in the MED area or not.

Keeping the discourse of the projects it is worthy to note the *CABEE*[107] *is a transnational Alpine project* aimed to create and implement an Alpine-wide guideline for procurement, production, assessment and promotion as well as learning about new and refurbished Nearly-Zero-Emission-Buildings (NZEB) and their neighborhoods. The common objective is the *validation and testing of public tendering for new and existing public buildings or the construction parts of buildings.* It is in line with Green Public Procurement and described in the Alpine-wide Guideline (CESBA). For this at least 40 tenders of a common value of at least 20.000.000 Euros were analyzed in comparison with the Guideline.

The PLASTiCE project[108] promotes replacing some of these fossil resources by sustainable, biodegradable or renewable resources. The project encourages the use of plastics with improved sustainability by promoting bioplastics across the entire value chain in Central Europe. From production to waste management, the final result is the full integration of plastics into natural material cycles.

PPI2Innovate project[109] financed by Interreg central Europe targets directly public procurers on all administrative levels in central Europe with the aim to build regional capacities in Public Procurment of Innovation (PPI), to change attitude towards PPI, to strengthen linkages among relevant stakeholders in regional innovation systems and to finally boost usage of PPI. The project will achieve this change by delivering innovative outputs such

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[106] In the project new approaches of EPC, elaborated from the sharing of own knowledge raised by partners past projects, need to be tested through pilots activities in order to improve their adequateness to MED area. To do this, 12 pilots action will be developed of which 8 EPC based investment plans will be prepared and 4 pilot actions will test the procurement procedures. More details about the project by: https://stepping.interreg-med.eu.

[107] The Piedmont Region - Strategic Planning Department, Territorial Policies and Construction, partner of the CABEE Project, has contributed by analyzing ten tenders for new residential buildings and projects and a school pole. All tenders concern and are subject to the ITACA Protocol evaluation. More details about the project by: http://cabee.eu/index.html.

[108] More details about project by: https://ec.europa.eu/regional_policy/en/projects/italy/bioplastics-a-better-plastic-for-a-better-environment.

[109] https://www.interreg-central.eu/Content.Node/PPI2Innovate.html

as 3 thematic PPI2Innovate tools for SMART Health, SMART Energy and SMART ICT fully customized to 6 national institutional frameworks. Italy participates to the project with Piemonte Region and University of Turin.

RETRACE project[110] financed by Interreg Europe aims at promoting systemic design as a method allowing local and regional policies move towards a circular economy when waste from one productive process becomes input in another, preventing waste being released into the environment. RETRACE addresses the EU challenge of transitioning towards a Circular Economy following the priorities set up by the "Flagship Initiative for a Resource-efficient Europe" for a shift towards a resource-efficient, low-carbon economy to achieve sustainable growth as enshrined in Europe 2020 strategy and the EC Communication "Towards a circular economy: A zero waste program for Europe". Italy participates to the project with Piemonte Region and Polytechnic of Turin.

3.2. Methodology and criteria for identification and selection of Best Practices at Regional level

The best practices at regional level for further detailed investigations were selected within CircPro project on 2018/2019 by a comprehensive desk review of currently available procurements containing circular components. All the available cases were analyzed one by one and in order to identify the most relevant cases of CP the European Commission's guideline/brochure "Public Procurement for a Circular Economy" [111], published in October 2017 was applied.

Circular procurement can be defined as 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 minimising, and in the best case avoiding, negative environmental impacts and waste creation across their whole life-cycle.

Following the guideline, the available cases were firstly screened by their "level" of circular procurement model application. The cases then were ranked in a matrix according to the models applied and the best once were selected based on the final accumulative score received.

The score was distributed for 3 possible level of CP application:

[110] https://www.interregeurope.eu/retrace/

[111] More information by http://ec.europa.eu/environment/gpp/pdf/Public_procurement_circular_economy_brochure.pdf

1. “system level” – checking the contractual methods, identifying whether the purchasers were applying supplier take-back agreements (the supplier returns the product at the end of its life in order to re-use, remanufacture or recycle it) to ensure circularity or whether the contract covered services and products.

2. “supplier level”- identifying the circularity elements in the systems and process of the suppliers ensuring the supplier will offer products and services meeting CP criteria.

3. “product level”- identifying the products that suppliers to public authorities may themselves procure further down the supply chain.

The matrix of the score contained also the section on the desired impact achievement. The impact was estimated based on the targets achieved; that is the preliminary indicators set up by purchasers when designing the CP implementation.

The most impressive and successful CP cases were then classified for further deep screening and the questionnaire was designed following the recommendations and the rules established by CircPro. The in-place interviews with purchasing organizations responsible for the corresponding CP were conducted applying the developed questioner. The aim was to study each best case of CP, that is how the CP was designed and initiated, what the CP meant within the context of the responsible organization; the policies established aimed to increase their circularity (how the CP was integrated into existing procurement practices and systems); what targets, priorities and timeframes were in place, and how these were monitored; how the needs were identified “what is actually needed?” and how the central decisions were made on considering a service instead of buying a product, how the technical specifications (focus on product design (life-cycle impacts, environmental impacts), its use phase and end-of- life (using buy-sell back, buy-resell and Product Service Systems)) of the objects for the procurement were identified and how the market consultation and supplier engagement was carried out; which tendering procedures and award criteria were applied; what other activities, such as training, support, and communication strategies, were put in place and finally what is more important which obstacles were faced during CP and how these obstacles were overcame.

The analyses of the interviews helped to identify the needs of stakeholders implementing CP and served as a bases for the recommendations and guidelines for CP application elaborated in detailed in the next sections of this chapter.

3.3. Analysis of the selected case studies

3.3.1. Case study 1 – City of Turin – school catering contract

In 2013, the City of Turin introduced a number of measures to their school catering contract to enhance its sustainability, which included requiring the use of energy efficient appliances and low environmental impact transport, as well as significantly reducing packaging and waste, for example by using tap water instead of bottled water, and favoring reusable and refillable products where packaging is unavoidable. In addition, contractors were required to shift from using plastic to reusable dishes. This one requirement alone resulted in a reduction of 157 tonnes/year of plastic waste. The current school catering service began in September 2013 and will continue until August 2016 with the possibility of extension for a further two years.

Information on procurement subject matter

School catering represents a significant part of the procurement budget for the City of Turin. Approximately 8 million meals are delivered annually, with a total value of approximately 40 million EUR per year. The school catering services present an opportunity to educate children on sustainability policies, as the Turin School system (kindergarten and primary schools) includes about 71,500 children between the ages 0-13 years. Taking into consideration the teachers and families of these children, between 230-250,000 citizens are affected by the school catering services.

Methodology

The contract for the overall school catering service is subdivided into eight lots, with each lot covering a different geographical area in Torino. The lots were awarded to three different suppliers.

Procurement strategy

Bidders were encouraged to favor low environmental impact packaging, including reusable, refillable or biodegradable products. One requirement for contractors to shift from using plastic to reusable as this criterion was applied to over five million meals delivered annually. Additional criteria were used to lessen other sustainability impacts associated with the catering contract, such as requiring the use of ecological cleaning products and awarding points for bidders offering a wider range of organic or fair trade products than were specifically requested.

Impact evaluation

Estimated reduction of 157 tonnes/year of plastic waste. Turin sees that potential benefits could be achieved by aggregating demand for low carbon catering solutions with metropolitan local authorities and other public institutions in the Piedmont region.

3.3.2 Case Study 2 - ATC Torino (Home Territory Agency of Central Piedmont) Procuring energy saving building technologies for residential buildings

ATC Turin (ATC) is a public agency providing social housing in the Italian province of Turin. It has been improving the environmental and energy performance of its properties since 1996. ATC Torino sought to procure technical solutions for the building energy performance of a residential building. In conjunction with partners from the PAPIRUS project, a market consultation and coordinated public procurement of innovation (PPI) process was undertaken.

Information on procurement subject matter

The ATC Torino award procedure had three objectives: 1. Reducing energy losses through walls (vertical building opaque envelope) without reducing the net floor area of apartments; 2. Insulating roofs without reducing the floor to ceiling height of rooms; and 3. Providing more effective window systems which decrease heat loss and increase solar gain in winter, while reducing solar gain in summer.

Methodology

Public Procurement of Innovation (PPI) approach was applied in finding the best solution for the specified procurement. Contracts were awarded using most economically advantageous (MEAT) criteria, with an emphasis on energy efficiency, sustainability and life cycle costs (LCC) of products.

The scope of the focus initially was established:

- reduce energy losses through the opaque envelope of both new and already erected buildings;

- decrease solar gains in summer and energy losses in winter through windows and fenestrations;

- provide good quality natural daylight;

- store thermal energy shifting heating and cooling peak loads; and reduce CO2 emissions in the production, construction and in-use phase.

Market engagement activities were carried out to give potential suppliers time to prepare their proposals before the call for tenders was published. As a result of the market engagement, thermal storage material and natural lighting providing technologies were ultimately excluded from the procurement process due to lack of feedback from the market, and lack of economic efficiency.

The remaining applied technologies were then advanced as independent lots in a tender, and an open procedure was carried out to award the contract.

The tender was divided into three lots in order to make the participation of small and medium-sized enterprises (SMEs) easier. These were as follows:

Lot one: Integral façade solution to reduce energy losses through the building's vertical opaque envelope. Lot two: Partial roof solution to reduce energy losses at roof level (inner leaf).

Lot three: Reduced solar gains in summer and increased solar gains in winter through windows.

Procurement strategy

Bidders were required to provide clear proof of their economic and financial standing, and their technical and professional ability. If they were to rely on the capacities of other entities (such as sub-contractors), proof of the technical, financial and professional reliability of other entities was also required.

The façade, roof and window solutions were required to have an innovative character. An innovative material was defined as either new, or as already existing but substantially improved. In addition, products which had not yet reached a significant market share (below 20%), where a contracting authority could act as a launch customer or early adopter, could also be considered innovative.[112]

Where wooden materials were used, all elements were required to be meeting the requirements of the Forest Stewardship Council (FSC) label or those of the Programme for the Endorsement of Forest Certification (PEFC), or equivalent.

Products containing hazardous substances for the environment and health were also not accepted, and products had to comply with the Classification and Labelling (C&L) Inventory of the European Chemicals Agency.

Energy efficiency (point A) was comprised of the following sub-award criteria: - Thermal transmittance coefficient (U-value): The aim of this criterion was to assess the capacity of the proposed innovative product or system to reduce energy losses. The minimum proposed thermal transmittance value received the maximum score, while values equal to the maximum value allowed (which differed according to the lot) were awarded zero. The rest of the values were then scored proportionally using a mathematical formula. - Thermal bridges (only applicable to 'façade' and 'roof' lots): This criterion evaluated the capacity of innovative solutions to reduce thermal bridges. Maximum points were awarded to those solutions with complete continuity of the insu-

[112] European Commission (EC) Decision C (2013) 8631.

lation layer and good treatment of special joints. Capacity of windows to reduce solar gains and to increase them in winter (only applicable to 'windows' lot): this evaluated the proposed window systems' ability to reduce solar gains in summer while increasing them in winter. Maximum points were awarded to systems where heating and cooling demands were reduced by more than 20% compared to standard windows.

Impact evaluation

The results of the test confirmed that improvements had been realized (below), with infiltration dropping by more than 35%, and building users also reported satisfaction with the solutions and greater comfort in the home. All the procuring entities achieved best value for public money as well as wider economic, environmental and societal benefits, and the project also addressed transparency and non-discrimination principles.

3.3.3 Case Study 3 - SCR – Central Purchasing Body of Piedmont Region - Provision of meals for regional hospitals

SCR Piemonte S.p.A., a fully owned capital company of the Piedmont Region, aims to rationalise public spending and optimise the procedures for selecting contractors for regional tenders. Each of the Health and Hospital Authorities will use the centralised agreement to stipulate its contract with the chosen economic operator. SCR S.p.A. collaborates with the Metropolitan City of Turin and ARPA Piemonte within the APE Network.

Information on procurement subject

The purchase procedure was carried out by SCR S.p.A. on behalf of the 12 Health Authorities belonging to the Piedmont Region. SCR S.p.A. has been identified as an aggregator with the task of stipulating agreements for the purchase of certain categories of works, goods and services for the public bodies of the Piedmont Region, in order to create economies of scale and reduce procurement costs. SCR S.p.a. collaborates with the Metropolitan City of Turin and ARPA Piemonte within the APE Network.

Information on procurement subject matter

The "Joint Procurement" approach was applied for several reasons: to reduce administrative costs for participating organisations, to obtain reductions in the price of the supply and service (i.e. achieve economies of scale), and to collectively send a strong demand signal to the catering market.

Methodology

For the drafting of the announcement a working group was set up, coordinated by SCR, with the representatives of all the hospitals the previous contract managers, in order to analyse the tenders in place and rationalise the distribution of meals according to geographical area. More focus was placed

on refrigerated meals (four out of six batches), while the traditional "fresh and hot" system was maintained in two lots.

The economic operators in the sector were involved in two preliminary consultations, both announced in the European Prior Information Notice (PIN).

Procurement strategy

The tender is divided into the following 6 geographical lots covering a large part of the regional territory. The award will be based on the most economically advantageous bid, identified on the basis of the best quality / price ratio.

Each tenderer is required to have a certified ISO 14001 Environmental Management System or be registered with the Eco-Management and Audit System (EMAS).

Impact evaluation

Based on a standard vegetarian meal (with 40% organic content) it is estimated that 2,310 tons of organic food will be purchased annually leading to calculated savings of 84.1 tCO2/year (756.9 tones over the potential 9 years period of the contracts). This is likely a highly conservative estimate. It does not take into account the use of organic meat (with much higher CO2 savings), and other products such as yoghurt and eggs, which will be 100% organic. The final impact is therefore likely to be higher.

3.3.4. Case Study 4 - University of Turin - Eco-innovative vending machines

The awarding procedure promotes energy efficiency, healthy and affordable food and drink, comprehensive waste management, sustainable delivery options, and awareness raising. Number of machines rationalized across the university buildings, includes the introduction of water dispensers and local spring water.

Information on procurement subject

The delivery of vending concessions[113] services for students, staff and visitors (around 70,000 people) for the University of Turin (UniTo), Italy. The University has taken the opportunity to fundamentally re-think its vending requirements in order to stimulate eco-innovation and to explore an alternative procurement approach by carrying out a unique contract for all the sites.

Information on procurement subject matter

[113] A concession agreement is a negotiated contract between a company and a government that gives the company the right to operate a specific business within the government's jurisdiction, subject to certain conditions.

Economic accessibility: giving access to the whole University Community to the various products at low prices, ensuring equal economic conditions within the University; Spatial distribution: optimizing proximity for staff and students to the vending machine service in the different University buildings and sites; Accessibility to healthy food: the availability in vending machines of healthy products in terms of nutrition and suitable for different needs and food choices**.**

Methodology

A comprehensive needs analysis has been complemented by a process of community engagement. The location, quantity, type, model and energy consumption of all the existing vending machines have been identified, and an overview of the status of the various vending machine contracts has been carried out.

A stakeholder engagement process was realised to define a more circular approach. Several professionals at UNITO collaborated in the design of the awarding procedure by including experts in legal, economic, environmental, energy food and health issue, by identifying selection and award criteria inspired by environmental innovation, eco-design, circularity, impact reduction, introducing also tap water dispensers along with an improvement of the energy efficiency of the vending machines. Green and circular criteria have been included in the contract model and the offers were also evaluated taking into account criteria related to improved waste management (for instance recovery/reuse of coffee dregs from the hot drink distributors), sustainable delivery and awareness raising.

Procurement strategy

A distinctive feature of this awarding procedure was the shift from a linear to a more circular approach, reflected during the stakeholder engagement process and in the technical specifications and award criteria of the tender model. With the aim of promoting circular economy practices the University has included award criteria relating to the recovery/reuse of coffee dregs from the hot drink distributors. The use of recycled PET plastic bottles or bio-based plastic was also considered in the award criteria with the aim of fostering recycling.

The contract was split into 5 lots, which considered the functional organization of the university, structured into 7 organizational poles. The technical specifications involve set number of vending machines per lot to be installed at strategic locations, all vending machines to meet energy class A, according to EVA-EM; all vending machines to use LED lighting; water dispensers to be provided to allow users to fill their own bottles; a minimum of 8 healthy food products for each vending machine, as suggested by the University's nutritionists; affordability of products (fixed price for water and coffee, determination of maximum threshold for other products); bottled water only from spring

water; installation of smart meters for energy consumption monitoring and quarterly sales volume reports for monitoring purposes.

Impact evaluation

The new service was estimated to lead to savings of 33.8 tonnes CO2/year, and 0.36 GWh/year of primary energy. Positive environmental impacts relate to the decrease in the number of vending machines (reduced from 279 to 226), the improved energy efficiency of the machines, and the substantial reduction in the use of plastic bottles thanks to the introduction of water dispensers. This is a conservative estimate to the savings as it does not consider the likely improved energy efficiency of the future models, nor embedded CO2 emissions savings related to the use of organic produce and recycled plastics. In addition, if the university did not purchase green electricity the savings relating to energy consumption would have been even higher.

CHAPTER IV - Guidance for more systematic and efficient use of Circular Procurement

This chapter aims to provide a template on how to create an operating environment that enables more systematic and efficient implementation of the CP practices[114]. **It is based on the EU directives provision** with the Italian implementation and on the experience of Piedmont Region.

4.1. PHASE 1 - Pre-award stage – needs analysis, zero waste design, risk assessment.

According to EU directives the articles concerning this phase are:
EU Directives point out the information to be included in notices: EU Directives 2014/24, Annex V; EU Directives 2014/25, Annex VI

Regulated ad National level

This pre-award stage is the starting stage and its appropriate implantation is vital for finding the right approach for the CP implementation.[115]

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[116].

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";[117]

2. "supplier level";[118]

[115] See A. MINO LOPEZ, Preliminary market consultations in Innovative Procurement: A Principled approach and incentives for anticompetitives behaviors in G. M. RACCA - C. R. YUKINS, Joint Public Procurement and Innovation: Lessons Across Borders, Bruxelles, Bruylant, 2019, 389 - 418.

[116] By applying term "organization" the guidebook intends to refer to all type of organizations and procuring entities of Piedmont Region.

[117] Which concerns the contractual methods that the purchasing organization can use to ensure circularity. This ranges from supplier take-back agreements, where the supplier returns the product at the end of its life in order to re-use, remanufacture or recycle it, to product service systems, where the contract provides both services and products.

[118] Model describes how suppliers can build circularity into their own systems and processes, in order to ensure the products and services they o er meet circular pro-

3. "zero waste design".[119]

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.

This information is needed to identify **risks** related to the specific subject matter.

By summarizing, especially three 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

4.2. PHASE 2 - Functional/Technical specifications and labels

According to EU directives the articles concerning this phase are:
EU Directive 2014/24, Artt. 42-44; EU Directives 2014/25, Artt. 60-62.

curement criteria. "Product level" is related to this, but is focused solely on the products that suppliers to public authorities may themselves procure further down the supply chain.

[119] Focus on product design, its use phase and end-of- life (using buy-sell back, buy-resell and Product Service Systems). In some cases, the best solution may be to buy nothing at all. For example, the organization may be able to share resources or equipment with other authorities. Purchasing re-used, recycled or re-manufactured products can also contribute to the idea of a Circular Economy.

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[120]:

- 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.[121]

4.3. PHASE 3 - Market analysis: Methodology for involving economic operators in the circular procurement process

According to EU directives the articles concerning this phase are:
EU Directive 2014/24, Artt. 40 – 41; EU Directive 2014/25, Artt. 58-59.[122]

Circular procurement is most effective if there is a clear understanding of what it is and the reasons for its application.[123]

[120] EU Directive 2014/24, Art. 42; EU Directive 2014/25, Art. 60

[121] EU Directive 2014/24, Artt. 43-44; EU Directive 2014/25, Art. 61-62

[122] EU Directive 2014/24, Art. 40, Preliminary market consultations; EU Directive 2014/24, Art. 41, Prior involvement of candidates or tenderers; EU Directive 2014/25, Art. 59.

[123] The awareness and resilience raising activities possibly through seminars/roundtables, in-house newsletters, the organization of intranet for general public could be in place.

Market analysis can be useful to determine whether appropriate alternatives are available which can reduced 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 box below summaries the key steps for engagement of economic operators, resilience and interest raising towards participation in circular procurement tenders:

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

4.4. PHASE 4 - Preparatory stage – defining the requirements and procurers needs, subject matter

According to EU directives the articles concerning this phase are:
EU Directive 2014/24, Artt. 18(2) – 70; EU Directive 2014/25, Artt. 36(2) - 87. [124]

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

[124] EU Directive 2014/24, Art. 18(2), Principles of procurement; EU Directive 2014/25, Art. 36(2) ; EU Directive 2014/24, Art. 70, Conditions for performance of contracts; EU Directive 2014/25, Art. 87.

is based on the European Waste Hierarchy: **reduce, reuse, recycle and recover**.[125]

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.

4.5. PHASE 5 - Exclusion grounds and Selection criteria

According to EU directives the articles concerning this phase are:
EU Directive 2014/24, Artt. 56-64; EU Directive 2014/25, Artt. 76-80.

The selection of tenderers[126] consists in assessing the tenderers on the basis of the **exclusion grounds**[127] and the **selection criteria**[128] set out in the procurement documents.

These Rules aim to ensure a minimum level of compliance with environmental law by contractors and sub-contractors.[129] 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.

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[125] Reduce - the organization is requested to think if really need to procure something at all, or if a solution can be found that does not require the acquisition of new products or materials? Reductions can also be Reuse - When designing a procurement procedure including supplier take-back systems in contracts are one way of ensuring that reuse will happen.

Recycle- If a product cannot be reused then designing for recycling is the next alternative in making it circular. This means ensuring that the product purchased recycled into a new product.

Recover- In a circular economy, waste is recovered and used for cooking oil into biodiesel, or composting food waste.

[126] See L. DIESING, P. MAGINA, Innovation in the Evaluation of Public Procurement Systems in G. M. RACCA, C. R. YUKINS, Joint Public Procurement and Innovation: Lessons Across Borders, Bruxelles, Bruylant, 2019, 349 - 372.

[127] EU Directive 2014/24, Art. 56; EU Directive 2014/25, Art. 57, Art. 76; EU Directive 2014/25, Art. 7

[128] EU Directive 2014/24, Art. 58

[129] EU Directive 2014/24, Artt. 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

The 2014 directives also allow exclusion for violation of a limited list of international environmental conventions.[130]

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: (i) mandatory grounds for exclusion, (ii) 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 as grounds to refuse to award 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.

4.6. PHASE 6 – Award procedures

According to EU directives the articles concerning this phase are:
EU Directive 2014/24, Artt. 26-33; EU Directive 2014/25, Artt. 43-51.

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 to demonstrate that the product or service is suitable for production or supply in quantity to acceptable quality standards".[131] 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,[132] including eco-innovation and social innovation, are among the main drivers of future growth and have been put at the

[130] E.g.: Vienna Convention on the ozone layer, Basel Convention on hazardous waste, Stockholm Convention on persistent organic pollutants, PIC Convention (hazardous chemicals/pesticides). E.g. EU Directive 2014/24, Annex X.

[131] WTO Government Procurement Agreement, article XV.

[132] EU Directive 2014/24, Art. 14; EU Directive 2014/25, Art. 32

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.[133]

EU Directives on public contracts shall only apply to specific public service contracts for **research and development services**[134] 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".[135] "**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).

[133] EU Directive 2014/24, Recital No. 47; EU Directive 2014/25, Recital No. 57

[134] which are covered by CPV codes 73000000-2 to 73120000-9, 73300000-5, 73420000-2 and 73430000-5.

[135] EU Commission, *Pre-commercial Procurement: Driving innovation to ensure sustainable high quality public services in Europe*, 14.12.2007, COM(2007) 799 final.

PPI THE BUYNG OF PROTOTIPES (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.[136]

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.[137]

The main feature of the innovative partnership is that the innovation occurs during the performance of the contract. In most other procedures48, the public buyer already knows what type of solution it is buying: innovation occurs in the pre-contracting phase and usually ends

[136] EU Commission, *Guidance on Innovation Procurement*, 15 May 2018, C(2018) 3051 final. "Such innovation, bringing better performance and added value for various stakeholders, sometimes fits the traditional setting (incremental innovation), but often disorders the old system by creating different actors, flows, values (disruptive innovation) or even requires a more comprehensive transformation, as it addresses unmet needs and calls for structural or organisational reforms (transformative innovation). This guidance attracts attention to the benefits of various forms of innovation and explains how to approach them in the public procurement process".

[137] EU Directive 2014/24, Art. 31. See also Artt. 65 and 66 below; See also EU Directive 2014/25, Art. 49

with the conclusion of the contract when the exact features of the solution are agreed. In an innovation partnership, the public buyer is entering 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.[138]

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 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.[139]

The other procedures applied by procurers are as follows[140]:

-In an **open procedure**, any operator may submit a tender.[141]

- 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.[142]

-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.[143]

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

[138] EU Commission, *Guidance on Innovation Procurement*, cit.
[139] EU Commission, *Guidance on Innovation Procurement*, cit.
[140] EU Directive 2014/24, Art. 26; EU Directive 2014/25, Art. 44.
[141] EU Directive 2014/24, Art. 27; EU Directive 2014/25, Art. 45.
[142] EU Directive 2014/24, Artt. 28, 65 and 66; EU Directive 2014/25, Art. 46.
[143] EU Directive 2014/24/EU, Art. 29.

to reduce the number of solutions to be discussed during the dialogue stage by applying the award criteria laid down in the contract notice.[144]

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**.[145]

Moreover, **framework agreements, can be award 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.[146] 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,[147] or *vice versa*, without establishing all the terms[148] 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 can purchase directly through the framework agreement (as in the "closed" model) or reopen 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 is assessed on a pass/fail basis, award criteria are weighted and scored so that tenders offering better environmental performance can be given more marks.

4.7. PHASE 7 – Award criteria

According to EU directives the articles concerning this phase are:
EU Directive 2014/24, Artt. 45, 67-69; EU Directive 2014/25, Art. 64, 82-84.

[144] EU Directive 2014/24, Art. 30; See also EU Directive 2014/25, Art. 48.
[145] EU Directive 2014/24, Art. 32; See also EU Directive 2014/25, Art. 47 and 50.
[146] EU Directive 2014/24/EU, Art. 33; See also EU Directive 2014/25, Art. 51
[147] So-called "closed" framework agreement.
[148] So-called "open" framework agreement.

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

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.[149]

a) Life Cycle Costing

When focusing on resource efficiency, products tools like Total Cost of Ownership (TCO) or Life Cycle Costing[150] becomes relevant.

Many different backgrounds and disciplines have been interested 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[151] are those related to the following five different life cycle stages: Research, development and design; Primary production; Manufacturing; Use; Disposal.

The awarding phase 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 affect enormously the outcomes of an LCC analysis:

[149] EU Directive 2014/24, Art. 67; EU Directive 2014/25, Art. 82.
[150] EU Directive 2014/24, Art. 68; EU Directive 2014/25, Art. 83
[151] Huppes et al., 2004.

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.[152] 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.

4.8. PHASE 8 – Contract performance terms and conditions

According to EU directives the articles concerning this phase are:
EU Directive 2014/24, Artt. 70-73; EU Directive 2014/25, Art. 87-90.

[152] EU Directive 2014/24, Art. 45; EU Directive 2014/25, Art. 64.

Contract performance clauses are used to specify how a contract must be carried out. Environmental considerations can be included in contract performance clauses.[153]

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.[154] In order to discourage breaches of environmental commitments, adequate sanctions should be provided.[155]

[153] EU Directive 2014/24, Art. 70; EU Directive 2014/25, Art. 87.
[154] EU Directive 2014/24, Art. 72; EU Directive 2014/25, Art. 89.
[155] EU Directive 2014/24, Art. 73; EU Directive 2014/25, Art. 90

CONCLUSION

Lessons learnt: Identification of obstacles while applying CP

This section provides an overview of the analyses on the identification of the common obstacles from the cases studies which faced the procurers while applying the CP approach for the procuring different format goods, works and services. The investigations show that the procurers from different case studied identified the following common obstacles:

- Identification of priorities and principles to be clarified at the beginning of Procurement;

- Market engagement to ensure transparency and the confidence of suppliers, and to understand the potential challenges of certain solutions;

- Engagement of technical and environmental experts for identifying the right approach and choosing the right solutions;

- The complexity of the sector to structure the tender on the basis of a needs

- The question of subdivision of the tender into the lots to promote accessibility to small and medium-sized enterprises sometimes can be tricky and have an opposite result.

The solutions and recommendations on how to meet, overcome and/or mitigate these obstacles provided in the next section though step by step guidance on how to implement CP, how to increase the circularity of regional companies and boost their participation in CP.

Based on the outcomes after the tenders' evaluation the recommendations for the drafting of future tenders with high energy performance of buildings were as following:

- The use of comparable systems for assessing the environmental sustainability of buildings, in order to verify the correspondence with pre-established requirements, as tangible evidence of correspondence with the technical specifications.

- The proven experience of builders in the construction of energy-efficient buildings, demonstrated through a brief curriculum vitae.

- The preparation of a Handbook of Use of the building, easy to understand that describes the technical characteristics and above all the actions necessary for the correct functioning of the same.