

Circular Procurement 2020

Summary of CIRCULÉIRE's Thematic Working
Group Circular Procurement Synthesis Report

Elaborated by IDDEA and Irish Manufacturing Research



Authorship

This *Circular Procurement 2020 Summary Report* highlights key findings from the *Circular Procurement 2020 Synthesis Report* – please refer to the *Circular Procurement 2020 Synthesis Report* for more detailed insights into the Irish Circular Procurement landscape.

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About CIRCULÉIRE

[CIRCULÉIRE](#), the National Platform for Circular Manufacturing seeks to accelerate Ireland's transition towards a net-zero carbon circular economy.

A key objective of the programme is to demystify, de-risk and deliver circular business model innovation for Irish industry.

A Circular Procurement Thematic Working Group was established with expert panel representing industry and research in Ireland. The two objectives of the working group were:

- to produce a state-of-the-art review to understand best practice (practice and policy) from further afield to inform how to address gaps / barriers in Ireland, and
- to develop recommendations for circular innovation projects (that are systems innovations) with potential to be funded by CIRCULÉIRE's Innovation Fund and rolled out across Ireland.

Want to learn more about CIRCULÉIRE?

Look at www.CIRCULÉIRE.ie or contact CIRCULÉIRE@imr.ie



About IDDEA

[IDDEA](#) is the leader in sustainable procurement in Ireland.

IDDEA facilitated the Circular Procurement Thematic Working Group comprising of fifteen industry panel members and ten non-industry panel members.

For progressive companies who seek to optimise their Triple Bottom Line (People, Profit, Planet), [IDDEA](#) is a sustainable procurement consulting and implementation partner.

- Sustainability, a green score, is a critical measure of procurement. We show how to buy responsibly, while protecting the planet alongside profit and people.
- We see procurement as a strategic competitive weapon, driving efficiencies in the supply chain and delivering dramatic cost savings to the bottom line.
- We engage early to develop better supplier relationships, collaborating to discover innovative solutions, with a focus on TCO and market leverage/advantage.

Want to learn more about IDDEA? Look at <https://www.iddea.ie/> or contact mryan@iddea.ie

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Executive Summary

This report explores and explains the role of Circular Procurement (CP) in driving and enabling the Circular Economy (CE) in Ireland.

While CP policy, regulatory frameworks and emerging best practices exist in most EU Member States, the regulatory framework for, and use of CP in Ireland is still in its infancy both in public and private sectors.

Nonetheless, the journey to CP in the public sector shows that Procurement as a strategic function has a huge opportunity to drive the CE through procuring more circular products, services, and materials. Methodologies include early and inclusive collaboration, through promoting new business models that include the end-of-life waste management, and through focusing on resource-efficient solutions.

However: "Circular procurement is not straightforward, but Aalborg learned that the best way forward is to just get started. Only by doing procurement in practice is it possible to identify challenges, find innovative solutions, build necessary experience, and use the results to change mindsets" (SPPRegions, 2017).

Circular Procurement is a complex process that needs collaboration and an open mindset from all stakeholders. This report shows that the best way to realise CP is to just start it.

Only by doing it, is it possible to understand the challenges, to collaborate to find innovative solutions, to build the necessary experience and capacity and to use and re-use the results to change mindsets.

"If we in the public and the private sector were better at buying circular, we could solve several problems at once." (DeDoncker, 2021)

CIRCULÉIRE TWG defines Circular procurement as the process by which an organisation buys goods or services that seek to contribute to closed energy and material loops within supply chains, while minimising negative environmental impacts and waste creation across their whole life cycle.

Both public and private sectors can engage in circular procurement practices. These practices can accelerate the implementation of core CE principles by including methods such as market collaboration, life-cycle assessments, total cost of ownership and total costs of usership models, sustainable and circular criteria in specifications, and end-of-life product management in procuring goods and services. The current Irish government is actively focused on implementing policies that enable Green and Social Procurement.

Quoting Peter Brennan "Let's look at the budget from a procurement point of view. Next year the **Public Capital Programme** will be at a record level at **over €10 billion**; the **commercial semi-state sector** will procure at least **€8 billion**; and Ireland's **3,000+ contracting authorities** will tender for some **€15 billion+ in supplies and services**. Ireland's procurement market has grown to **€33 billion**. Wow. Busy times ahead for buyers and suppliers" (Brennan, 2020)

The numbers highlight that GPP and CP can be used as a catalyst for change.

As the circular economy drives a circular demand, it creates a wealth of opportunities for circular supply and closed loop procurement thinking. CP emphasises the principles of existing Sustainable Public Procurement – considering re-use and Net Zero Waste disposal alongside sourcing in order to help close material and product loops.

When purchasing power is used to change the world, by influencing pricing, reducing demand for finite and non-environmentally friendly materials, or by creating opportunities to spur technical innovation and increase sustainable outcomes, procurement can be an immensely powerful tool and enabler.

CP requires not only a Technical, Financial or Process change, but also a People change. Together these changes contribute to the competitive advantage of CP – an enviable brand for the organisation and an increased value proposition for discerning consumers, while safeguarding our planet. Therefore, CP requires a paradigm shift in mindset, skillset and toolset to streamline the engagement from design to tender to supply to end-of-life management.

Learning from others, examples of European CE networks who have adopted a multisectoral approach, and other EU organisations who found CP solutions for various value chains, with multiple degrees of risk and cater for a variety of needs demonstrates that CP is a core enabler for Circular Economy solutions.

CIRCULÉIRE's TWG Circular Procurement has collaborated with industry members, policy makers and academia. to define best practice

in relation to CP and to identify CP opportunities for Ireland.

Based on this engagement, five pilot projects are recommended to demonstrate that CP practices deliver the right buying decisions for the benefit of our organisations, society, and our planet, by collaborating and designing CE solutions together:

1. **Specification criteria:** A collaborative tender to identify, assess, review, and buy circular products or packaging.
2. **New Cost Models:** A joint tender to benchmark Total Cost of Ownership and Total Cost of Usership models with circular evaluation tools.
3. **Market Engagement:** A Circular Procurement Innovation Platform, to promote and scale buyer / supplier market dialogue.
4. **Contract Life-Cycle Management:** Collaboration to develop and trial circular contract boilerplates for products and services to manage, measure and report on benefits in the in-use phase.
5. **Collaboration:** A Circular Procurement training platform and gamification campaign for buyers and suppliers to promote circular collaboration.

All five selected projects are further outlined in section 4. They aim to develop solutions for procurement professionals and their wider collaborators to accelerate the realisation of a Circular Economy.

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1.0 Green and Circular Procurement Policy in Europe and Ireland

Key Messages:

- **Since 2012, Sustainable Public Procurement (SPP) has been recognised as a policy tool to encourage sustainable production and consumption.**
- **Green Public Procurement (GPP) is a powerful Framework that promotes a more sustainable use of natural resources, establishes behavioural changes for sustainable consumption and production and drives innovation**
- **Circular Procurement is one of the keys to transforming the world to a Circular Economy by buying solutions that contribute to closed energy and material loops within supply chains, whilst minimising, or avoiding, negative environmental impacts and waste creation across their whole life cycle.**
- **Ireland came late to the table in relation to GPP however, the current Irish government is focused on implementing policies that promote Green and Social Procurement – recent evidence is the Waste Action Plan for a Circular Economy (2020).**

1.1 Sustainable Public Procurement (SPP)

Sustainability was first encountered more than 50 years ago when the Club of Rome came together, however the pivotal moment in the development of sustainability came with the Brundtland report in 1987. Since Rio 2012, Sustainable Public Procurement has been recognised as a policy tool to encourage sustainable production and consumption.

1.2 Green Public Procurement (GPP)

The 2016 publication of the “Buying Green Handbook” really put Green Public Procurement (GPP) on the map as a policy tool in Europe (EC, 2016). GPP is a well-defined framework with well documented tools to achieve environmental goals relation to

climate change, resource use and sustainable consumption and production.

GPP has been endorsed in a number of EU policies and strategies, reflecting its recognised potential to encourage a more sustainable use of natural resources, establish behavioural changes for sustainable consumption and production, and drive innovation.

1.3 Circular Public Procurement (CPP)

Nine years ago, the Danish Ministry of Environment & Food said: **“If we in the public sector were better at buying green, we could solve several problems at once. We would be improving the climate and environment at the same time as creating growth and jobs at enterprises which develop green technology. In other words,**

green procurement is one of the keys to transforming the world to a green economy”.

The same can be said for circular procurement today: if we were better at buying circular, we could solve several problems at once. **CP is one of the keys to transforming the world to a circular economy.**

With an €1.9 trillion annual budget (14% EU GDP) across more than 250,000 contracting agencies, public procurement spending has a significant role to play in accelerating our transition to a circular economy (GPP4Growth, 2021).

Circular public procurement (CPP) also has a role to play in achieving the Sustainable Development Goals (SDG). Goal 12, which references Responsible Consumption and Production, includes a specific target in promoting procurement practices that are sustainable, in compliance with national policies and their specific priorities.

CP will support the EU and National roadmaps towards climate neutrality and to support the Green transition that is outlined in the EU Green Deal and the National Energy and Climate Action Plans.

1.4 GPP policy in Ireland

Ireland as a nation came late to the green and circular procurement table. In 2014, Green Procurement, Guidance for the Public Sector (EPA, 2014) was the first significant policy outline for GPP in Ireland. This document has been recently replaced with Green Tenders, an

Action Plan for Green Public Procurement recently published (DECC, 2021). In 2018, “The Sustainable Development Goals (SDG) National Implementation Plan 2018-2020” (DECC, 2018) was published and it was honest in its assessment that the public awareness of the SDGs was low and has since taken action to resolve the situation. With this publication, Ireland’s starting position, vision and priorities to progress was made clear.

The Department of the Environment, Climate and Communications (DECC) is focused on implementing policies that enable Green and Social Procurement. Recent evidence includes the Waste Action Plan for a Circular Economy (DECC, 2020), a new national waste policy to inform and guide waste planning and management in Ireland and an updated policy document on green public procurement (DECC, 2021) This will be followed by the EU Circular Economy Package and European Green Deal, which will also influence national level measures taken by Ireland to transition to a Circular Economy. Currently, CE principles are contained in a range of national policies linked to spatial planning, waste management and the development of the bioeconomy; however, there is a lack of information concerning CE implementation for specific sectors and business models and how procurement as a strategic function can accelerate this change.

2.0 Core Concepts of Circular Procurement (CP)

Key Messages:

- **As the circular economy drives a circular demand, it creates a wealth of opportunities for circular supply and closed loop procurement thinking.**
- **CP not only requires a Technical, Financial or Process change, but also a People change.**
- **Procurement can be an immensely powerful tool and enabler. Purchasing power could be used to change the world, by influencing pricing, reducing demand for damaging materials or by creating opportunities to spur technical innovation and increase sustainable outcomes,**
- **CP emphasises the principles of existing Sustainable Public Procurement about considering use and disposal alongside sourcing in order to help close material and product loops.**
- **The competitive advantage CP delivers will create an enviable brand for companies and increased value proposition for discerning consumers, answering to emerging changing consumer preferences.**
- **Starting is essential, think small is beautiful; quick wins are vital.**
- **Telling and Selling the Story of Success to highlight the opportunities and benefits of CP**

Circular Procurement requires change

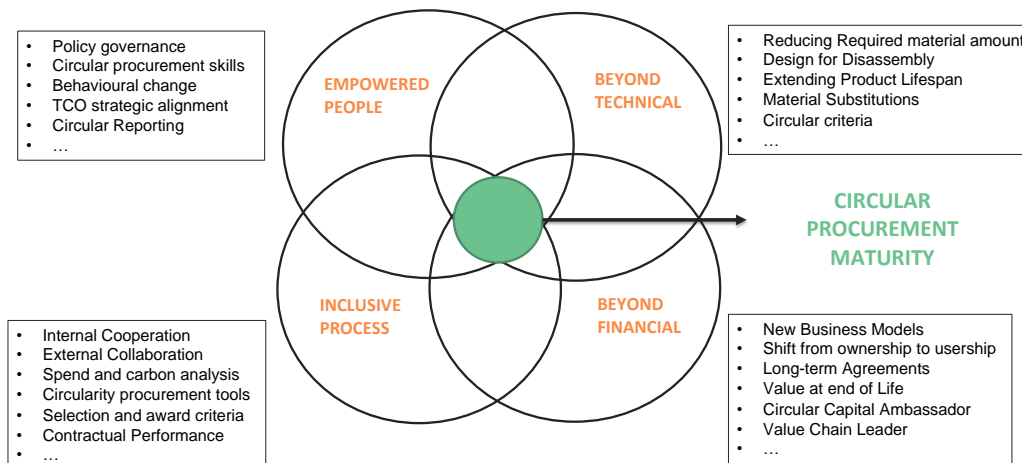


Figure 1 The Circular Procurement Maturity Model, (DeDoncker, 2021)

2.1 A definition of Circular Procurement (CP)

There is no agreed definition of Circular Procurement (CP). The circular economy (CE) drives a circular demand. CE creates a wealth of opportunities for circular supply and closed loop procurement thinking. Below are three useful definitions of CP.

- The process in which a product, a service or a project is purchased according to the principles of a circular economy. In this process the technical aspects of the product are as circular as possible, taking maintenance and return policies at the end of the use period into account, as well as including financial incentives to guarantee circular use p19 (van-Oppen, 2018)
- ... about making agreements to ensure that the products that you procure for your organisation are produced in accordance with the principles of the circular economy and will be further processed after use. Such products are, for example, designed for durability, reparability and recycling and can at the end of their life cycle be broken down into components, materials or raw materials, which can then be used again

in the production chain (SPPRegions, 2017).The procurement of goods, services or contracts in a way that minimises the consumption of virgin resources and does not result in the generation of waste. Instead, the raw materials and the value bound in them are kept in 'circulation' for as long as possible. In practice, circular procurements can be defined as procurements that support the seven principles of the circular economy (Metabolic, 2017).

- What all these definitions have in common is that CP emphasises the principles of existing Sustainable Public Procurement (SPP) about considering use and disposal alongside sourcing in order to help close material and product loops.

2.2 Core Concepts of Circular Procurement

Circular procurement can be understood as the process by which an organisation buys 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.

While the public sector has used procurement as a policy tool to drive change to put more sustainable and circular contracts in place, the private sector has implemented core CE principles through procurement without perhaps being aware of it: enhanced market collaboration, life-cycle assessments, total cost of ownership (TCO) and total costs of usership (TCU) models, sustainable and circular criteria

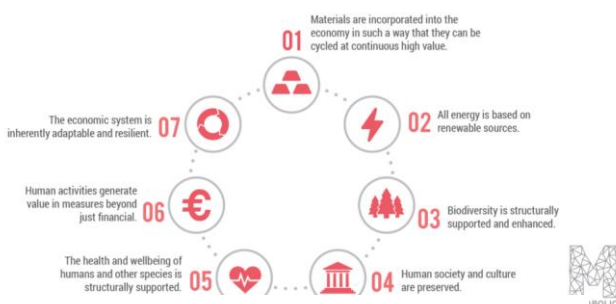


Figure 2 Seven pillars of the circular economy

in specifications, and end-of-life product management – all these best practices already can be found in various sectors, albeit at individual company level.

Business owners and leadership teams are developing the circular economy through various business functions, not least through procurement.

2.3 Evolution to Circular Procurement

Procurement traditionally has been a follower rather than a leader. However, when purchasing power is used to change the world, by influencing pricing, reducing demand for damaging materials or by creating opportunities to spur technical innovation and increase sustainable

outcomes, procurement can be an immensely powerful tool and enabler at a strategic level.

“Procurement is an important tool in the transition to a circular economy. By asking the right question, you can set the market in motion and encourage the development of more circular products. Circular procurement is more than just purchasing circular products, circular use must also be taken into account” p29 (van-Oppen, 2018).

As shown below, moving from a traditional procurement outlook to a sustainable and circular perspective requires changes at different levels, focusing on different outcomes for the product or the contract through an extended collaboration.

Evolution	Market Engagement	Criteria	Cost	Collaboration	Contract
Traditional	<ul style="list-style-type: none"> Start from internal stakeholder knowledge Focus on supplier Limited Market contact 	<ul style="list-style-type: none"> Fixed set of requirements Selection by exclusion, based on risks Technical specifications 	<ul style="list-style-type: none"> Focus on short term cost Primarily Lowest cost 	Transactional relationship	<ul style="list-style-type: none"> Product ownership No end-of-life arrangements No space for development
Sustainable	<ul style="list-style-type: none"> Start from business sustainable goals Focus on supply chain Regular market contact 	<ul style="list-style-type: none"> Requirements based on existing sustainability labels Selection on sustainability practices More functional specifications 	<ul style="list-style-type: none"> Focus on TCO Balance between cost/quality 	Leveraged relationship	<ul style="list-style-type: none"> Total cost of ownership Some end-of-life arrangements Space for development
Circular	<ul style="list-style-type: none"> Start from supplier knowledge Focus on value chain Intense market contact 	<ul style="list-style-type: none"> Focus on outcome criteria and vision Functional and Outcome specifications 	<ul style="list-style-type: none"> Focus on TCO/TCU Focus on long-term quality/impact 	Partnership relationship	<ul style="list-style-type: none"> Total lifecycle ownership or Usership End-of-life arrangements Space for co-creation

Figure 3 Evolution from Traditional, Sustainable to Circular Procurement, enhanced by (DeDoncker, 2021) from the original (Ministry of Infrastructure and Water Management, Netherlands, 2018)

To reiterate CP requires changes in Technical, Finance, Process and People. Empowering people and enabling a different mindset are two of the core challenges we face in accelerating CP. This requires a different focus at policy and organisational governance, skills and behaviour, information flows and market structures, and finance model levels.

Innovation needs to happen on all these fronts in order to achieve substantial procurement transformation to support the realisation of a circular economy.

2.4 Enablers of Circular Procurement

How do you translate the step changes outlined above into a CP process?

To allow exceptional companies to stand out from their peers and investors to make more informed decisions, **a shared vision and framework** for business needs to be established to better understand how to drive the private sector towards circularity. Regulators and policymakers must be involved, while community collaboration is also essential. Within companies, leadership commitment is needed to enable management to empower employees, since the personal drive and attitudes of resources in an organisation are critical.

Telling and selling the story of success amplifies and accelerates the implementation of CP. This needs a communication plan.

The promise of enhanced competitiveness and sustainable growth is always an enabler for any company that wants to continue to grow. The competitive advantage CP delivers will create an enviable brand for the organisation and an increased value proposition for discerning consumers, answering to emerging changing consumer preferences.

The development of **innovative business models** through collaboration with ecosystems, enhanced collaboration between stakeholders, competitors and long-term partnerships is an exciting journey for ambitious and forward-looking leaders.

The Circular Metrics Landscape Analysis report states that “Similar to having regulatory or policy representatives participating in the development process, invited academic institutions would strengthen the conversation by challenging assumptions that

might otherwise go unchecked”. (WBCSD, 2018)

Finally, it always is good to keep the benefits of CP at the forefront of the change we are embarking on – These enablers are based on, (SPPRegions, 2017), p.8 and enhanced by (DeDoncker, 2021)

People (Societal Reasons)

- It is linked to the sustainable development goals (SDG) supporting the end of slave/child labour.
- It supports greater transparency in the supply chain
- It supports organisations in the supply chain to maintain/increase revenues by modernising their business models in a changing world.

Planet (Environmental Reasons)

- It prevents waste.
- minimises use of hazardous materials and their release into the environment
- helps to counter the depletion of finite resources, scarce raw materials and the associated geo political, and environmental problems

Profit (Financial Reasons)

- It reduces costs, short/long term in terms of Total Cost of Use or Total Cost of Ownership and a reduction in waste management costs.
- It can lift some of the burden on individual organisation with collaboration.
- The frequency of procurement will be altered due to extended life of products/service level agreements (SLA), saving time.
- Strategic move towards CP, will support organisation to become future proof. With long term SLA to counter price

fluctuations, support financial planning, cost flows and greater security of supply.

- Collaboration within the chain creates cohesive cooperation and a more robust supply chain.
- Reduced risk, with the economic risk ideally placed with party best able to bear it.
- CP provides greater insight into future costs.
- Introducing CP enhances reputation and improves the brand distinction.

2.5 Barriers of Circular Procurement

However, it is important to recognise there are barriers which include:

- **Lack of a common purpose or strategic pressure:** Communication needs to be inclusive and clear. Also, due to a perceived lack of consumer demand, only innovators and early adopters are investing in CP.
- **You get what you pay for:** Multi-disciplinary collaboration on specification development is crucial to develop CE needs.
- **Stakeholders' resistance to change:** Resistance to change is one of the core challenges to the delivery of any successful project, this is no different for CP tenders.
- **Insufficient time and resources:** Usually, cost, scope and time are the triple constraints procurement professionals have to balance in any project. Starting small is beautiful; quick wins are essential. Once an initiative has been selected, a clear path to success needs to be defined, as failure will become the biggest barrier to subsequent CP initiatives.
- **Different teams involved across the procurement phases:** Without an aligned collaborative approach to CP, fragmentation will cause issues from the tender phase through to the use-phase and contract management.
- **Lack of circular procurement expertise:** CP skills and selection / evaluation instruments are not yet part of a procurement professional's toolbox and, as a consequence, success is *ad hoc* and fragmented.
- **We do not know yet what to ask for, so what does "good" look like?** Data on recovered, recycled or substitute materials is not readily available to include in benchmarking exercises. "It's one challenge to measure a company's circularity. It's another one to measure (and value) the environmental, social and economic impact of those circular activities. Translating 'total circular procurement' or even 'tons recycled' into endpoint indicators and impacts is not straightforward and can be an art as much as a science. However, it is critical to account for both positive and negative impacts (including rebound effects) that result from circular initiatives.
- **Templates are not readily available:** The public sector has developed CP guides based on initial successful collaborations between various regions

or cities; but no collective private sector best practice templates exist.

- **Effective communication and reporting of circular initiatives:** The communication and performance framework of circularity must resonate and be embedded with both internal audiences and external stakeholders.
- **Bottlenecks in the regulatory system:** CP is a powerful tool to accelerating the CE when a strong regulatory framework is in place. Currently, while new sustainable policies are in the making, there are bottlenecks for example there is concern in certain industries looking to achieve End of Waste (EOW) certification for new by-products can be protracted experience.

3.0 Implementing Circular Procurement

Key Messages:

- **Circular Procurement requires a paradigm shift in mindset, in skillset and in toolset.**
- **Each step of the procurement process contains elements that may need to be changed in order to obtain a more circular solution.**
- **The engagement needs to be streamlined but enhanced, to embed circularity throughout the product and manufacturing process cycles-from design to tender to supply to end-of-life.**
- **Both the public and private sectors can implement core CE principles through procurement via enhanced market collaboration, life cycle assessments, business models such as total cost of ownership and total cost of usership, sustainable and circular criteria in specifications, and end-of-life product management.**

3.1 A Paradigm Shift

Circular Procurement is a key lever in delivering the Circular Economy. The inclusion of procurement as a strategic decision-making function early in the design or identification process ensures that a circular supply chain can be developed, while also meeting the needs of the end users, the organisation and the environment.

CIRCULÉIRE’s TWG objective was to facilitateby providing a forum to understand best practice and identify CP opportunities.

CP requires a paradigm shift in mindset, in skillset and toolset from a strategic level through to factory floor.

Procurement can begin thinking about implementing change through CP at three levels as outlined below by the SPP report (SPPRegions, 2017). Collaborating with the internal stakeholders to ensure the business case assesses and selects the best opportunity for CP is the first step before the real procurement process should start.

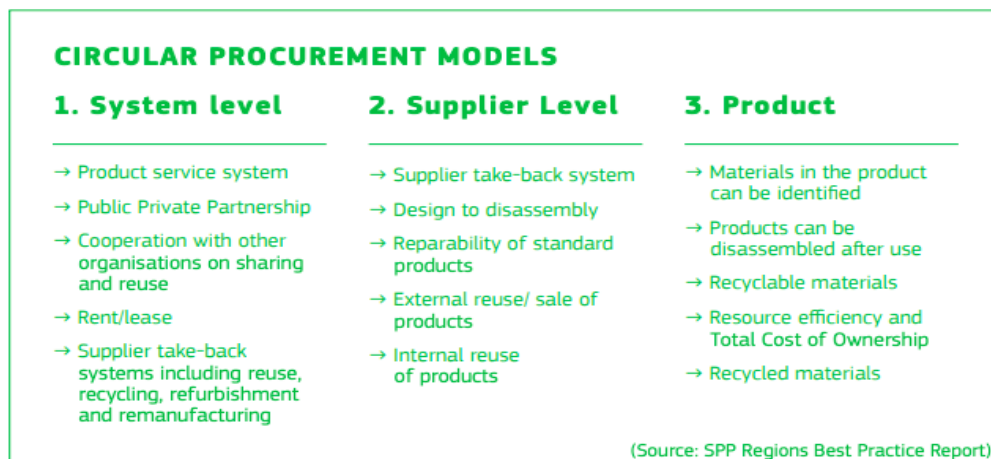


Figure 4 Circular Procurement Model (SPPRegions, 2017)

At a simple level, these changes will impact traditional procurement questions and the sequence of the cycle of the process:

- Do we need "it"?
- What is "it" that we need?
- How will we buy it?
- Who do we buy it from?
- When will we buy it?

According to the ICLEI Best Practices report (SPPRegions, 2017), each step of the procurement process contains elements that need to be changed to obtain a more circular solution. The focus needs to be on:

1. Service rather than products.
2. The product's design use phase and end of life rather than the purchase activities.
3. Collaboration-Enhancing dialogue with the market.

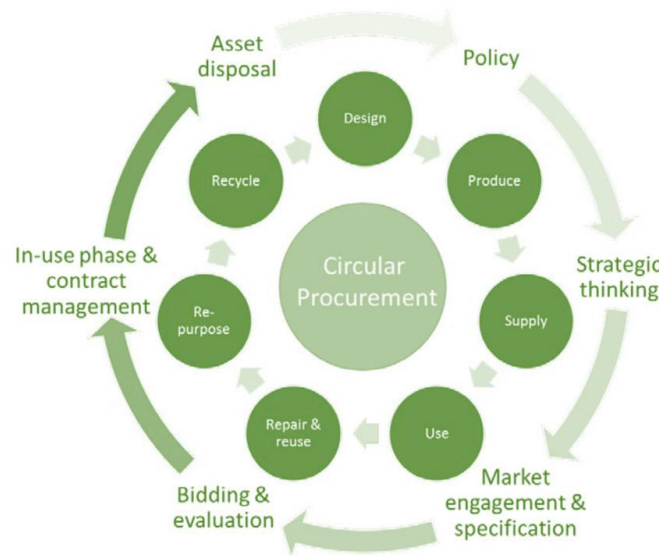


Figure 4 Circular Procurement Best Practice Report, (SPPRegions, 2017), p.2

3.2 Developing Circular Procurement Practices.

Building on the above three core focus areas of service, design, and collaboration, when developing CP, we need to consider the following stages:

- Policy
- Strategy
- Specification
- Market Engagement
- Selection, Bidding and Evaluation
- Inhouse or contract management
- End of Use/Asset Disposal

4.0 Potential Circular Procurement Opportunities

Key Messages:

- **Circular Procurement is a complex process that needs collaboration and an open mindset from all stakeholders.**
- **The best way to realise CP is to just start it. Only by doing it, is it possible to understand the challenges, to collaborate to find innovative solutions, to build the necessary experience and capacity, and to use and re-use the results to change mindsets.**

4.1 Ideation methodology

The ideation process, due to the required virtual nature, was carried out in a mixed blend of methods. In 3 ideation sessions, participants were asked to prepare ideas around how they could become involved in the Circular Economy. The ideation and case study review resulted in great collaboration across industry, academic and policy extended stakeholders.

4.2 Overview of Ideas

Circular Procurement is a complex process that needs collaboration and an open mindset from all stakeholders, since it encounters many barriers. Nonetheless, the benefits of success far outweigh the challenges it must overcome. CIRCULÉIRE's Circular Procurement Thematic Working Group (TWG), through an ideation process, developed great ideas around the different levels at which Irish industry, with Government support, could affect change towards CP. dividing ideas into

- Policy Level
- Business Level
- Supply Chain Level

- Product Level

4.2.1 Policy

- 5-year Roadmap and Mandatory Targets
- OGP & CP best practise need to be made mandatory for high value contracting and in particular for the capital investment project Ireland 2040 plans.
- Taxable Incentives, VAT exemption for circular products
- The development of CE and CP will fail unless EOW can be fast tracked to enable new business models. Support needed to resolve the bottleneck discussed earlier.
- Pilot of local authorities/housing associations to lease WEEE secondary white goods.

4.2.2 Business

- Develop CP Roadmap to deliver sustainable strategy.
- Financing, ownership, rent, lease and usership subscription models.

- Review company policies to incorporate circularity in resources and asset management.
- Training in circularity awareness for both internal and external stakeholders
- Use of standards/quality mark such as ReMark (Downey, 2020) EC labelling and reporting tools.
- ISO20400 Sustainable Procurement readiness training and other ISOs related to CP.
- Business to influence government policies on national circular economy through target tracking for circular specifications and suppliers.

4.2.3 Supply Chain

- Circular Market Dialogue Tool to support constructive collaboration.
- Traceability of supply chain from cradle to cradle
- Training in Total Cost of Ownership (TCO)/Total Cost of Usership (TCU) and Lifecycle Analysis (LCA) and Lifecycle Cost Analysis (LCCA) for buyers and suppliers
- Circularity specification calculator to link up with circularity performance measurement.
- Incorporate 7R's of Recycling in scoring tender analysis and contract modelling (Dunedin Government, 2021).

- Develop Action Plan for Suppliers to increase capabilities of circularity.
- Certification system for Suppliers may support Pre-Qualification Questionnaire (PQQ) for CP
- Pre-Qualification Questionnaire (PQQ) for Supplier capacity and capabilities of circularity.

4.2.4 Product

- Lifecycle Analysis (LCA) for product using scope 1, 2 and 3. (Carbon Trust, 2021)
- Material Passport- full lifecycle traceability for products **Invalid source specified.** to include tracking capability with scanning app with QR code, CE, MSDS and usage.
- Use standards such as ISO and other frameworks to address circular design for carbon neutral products.
- Use of Quality Standard mark (ReMark (Downey, 2020)) for preloved goods.
- Green chemistry design and reuse of chemicals through waste prevention
- Sustainable Packaging Design: creating the circular specification.
- Reinvest savings gained for circular economy activities into a transparent incentivisation scheme.

4.3 Circular Procurement Recommendations

CIRCULÉIRE's TWG Circular Procurement has collaborated with industry members, policy makers and academia to just start it. Based on this engagement, five pilot projects are recommended to demonstrate that CP practices create a new way of buying and designing together, for the benefit of our organisations, society, and our planet:

1. **Specification criteria:**
2. **New Cost Models:**
3. **Market Engagement:**
4. **Contract Life-Cycle Management:**
5. **Collaboration:**

All five selected projects aim to develop solutions for procurement professionals and their wider collaborators to implement CP by:

- Upskilling teams.
- Getting top level buy-in.
- Developing procurement tools to select, assess and evaluate circular needs and criteria.
- Enabling innovative products, services and business models to be benchmarked on their circular Value for Money for the organisation

- Developing circular indicators, targets, and performance metrics to ensure the forecasted gains are tracked, reported and achieved.

#	Proposed Project	Societal Gain	Environmental gain	Economic Gain	Governance Gain	Barriers
1	SPECIFICATION CRITERIA: A volume leveraged Collaborative tender to review and buy circular products or packaging.	<ul style="list-style-type: none"> Buy-in of environmental conscious consumers Social enterprise jobs Certified de-risking a circular solution Creation of new SME business opportunities 	<ul style="list-style-type: none"> CO2 tonnage reduction, End-of-life waste focus Carbon miles reduction and embodied carbon saved end-of-life waste focus % virgin and recycled mat 	<ul style="list-style-type: none"> Cost savings proposed VAT free product policy Value for Money & LCC considerations Library of good procurement processes 	<ul style="list-style-type: none"> ESG Reporting for Policy makers, Companies, Procurement Teams, Suppliers, and at product design level Repair café's Performance Reporting 	<ul style="list-style-type: none"> Acceptable Measures for end-consumers Perception and attitude for recycled, re-used, remanufactured goods Insurance issue, Product and public Liability
2	NEW COST MODELS: A joint tender for a Total Cost ownership/usership with circular evaluation and procurement models: Products as a Service	<ul style="list-style-type: none"> Coopetition model with companies in same industries Capacity and tools building Trialling circular evaluation and contracting model 	<ul style="list-style-type: none"> Co2 tonnage reduction, Energy use reduction Full end-of-life asset and service management % virgin and recycled mat LED 	<ul style="list-style-type: none"> Capex and Opex cost savings Turnkey solutions LCC as a basis for cost calculation Water, Energy, air and end of life benefits 	<ul style="list-style-type: none"> Reporting KPIs from supplier on CO2 reduction, energy reduction, TCO impact ESG usage reporting End of life management compliance 	<ul style="list-style-type: none"> Data sharing Stakeholder engagement Procurement guidelines Pre-Approved supplier lists
3	MARKET ENGAGEMENT: Circular Procurement Innovation Platform, to promote market dialogue between buyers and suppliers	<ul style="list-style-type: none"> Capability Building across all stakeholders First customer advantage Enabling market dialogue at an early stage on an equal footing New supplier discovery 	<ul style="list-style-type: none"> Enablement of innovative solutions environmental gains, open source engagement GPP evaluation and market criteria for new products 	<ul style="list-style-type: none"> Cost savings Time savings Early benchmarking for best circular specification or business model 	<ul style="list-style-type: none"> Empowerment of internal and external stakeholders Procurement Teams, Suppliers at product design level in a safe environment of collaboration 	<ul style="list-style-type: none"> No open mindset C-suite support for open source collaboration platform Too specific ask from either buyer or seller.
4	CONTRACT MANAGEMENT: Develop and trial of circular contract boilerplate for products, services to measure, performance manage and report on its benefits in the in-use phase	<ul style="list-style-type: none"> Circular contract for buyer/suppliers Changing total lifecycle monitoring of behaviour through the contracts Promote supplier-buyer knowledge collaboration for in-use phase 	<ul style="list-style-type: none"> Enabling contract management plans based on cradle to cradle evaluations with suppliers Environmental KPI performance reporting End of waste life reduction through new channels of contract management 	<ul style="list-style-type: none"> Cost savings Cradle to Cradle value measurement through contract management Enabling ESG, CDP, SDG, or other framework reporting through the contract lifecycle 	<ul style="list-style-type: none"> Enabling ESG, CDP, SDG, or other framework reporting through the contract lifecycle Full lifecycle value reporting through contract and procurement decisions 	<ul style="list-style-type: none"> Lack of Budget R&D Required Engineering or design knowledge Creation of sales channel for valuable waste stream
5	COLLABORATION: Develop Circular Procurement training Platform and gamification campaign for buyers and suppliers to promote circular collaboration	<ul style="list-style-type: none"> Behavioural changes for buyers and sellers through collaborative approach Digitised knowledge with incentivised fun Games and innovation as part of buyer-supplier development 	<ul style="list-style-type: none"> Circular thinking impact CO2 reduction Energy use reduction Ireland environmental awareness improvement through circular training and impact measurement 	<ul style="list-style-type: none"> Circular toolkit to demonstrate the value of CP and innovation and de-risk the relationships Innovation and Value for Money outcome New business models Part of development program 	<ul style="list-style-type: none"> De-mystifying carbon stories Innovation through games and buyer seller partnership Stakeholder engagement Safe Place for new circular ideas 	<ul style="list-style-type: none"> Lack of Budget R&D Required Trial by company or site required GDPR challenges Time constraint

Figure 5 5 Procurement Projects Chosen in TWG CP (DeDoncker, 2021)

4.4 Supporting Case studies

Project 1 / Case Study: Redesign Heavy Duty Film (Tappi, 2007)

Redesigning the specifications, using different evaluation criteria for procurement, allowed a major US resin manufacturer to downgauge heavy duty shipping film used to package and transport its own PPE and PP resins by 40%. As a result, 5MM pounds less plastic resin was used each year.

Project 2 / Case Study: Lights as a Service, (LAAS) [Schiphol Airport](#)

In a recent CP project carried out by Schiphol Group, Cofely and Royal Philips, Schiphol Airport converted all lighting to LED, reducing energy use by 50% compared to conventional lighting, while the lighting fixtures were designed to last 75% longer than traditional fixtures and all component parts were repairable or replaceable. Philips retained ownership of all equipment, while Schiphol paid for lighting on a 5-year lease agreement, with performance managed by outcome KPIs. An end-of-life clause ensured full circular waste management.

Project 3 / Case Study: [Innovation Brokerage Platform](#)

The Austrian Centre for Procurement innovation offers a matchmaking platform that shares online information on innovative products and services, evaluated by independent procurement experts. In 2018, more than 100 innovative solutions were available online and public buyers received more than 230 ideas from the market.

Project 4 / Case Study: Remanufacturing and rebuild programme, [Caterpillar](#).

Caterpillar incentivises the return of used parts by sharing the reduction in manufacturing costs with the customer. Returned parts at the end of their serviceable lives are restored to same-as-new condition, reducing the costs of replacement parts for customers while Caterpillar benefits too – it estimates savings on a cylinder head at 61% less greenhouse gases, 93% less water use, 86% less energy used, and 99% less waste sent to landfill.

Project 5: Gamification to drive employee behavioural change.

Serious Games Interactive, an award-winning, research-based developer of games, simulations and virtual worlds, developed the [Waste4Think game portal](#) under the Waste4Think project, a European initiative undertaken by an international consortium of 19 partners, focusing on citizen participation to build more sustainable, eco-friendly cities. The games portal offers four games, tackling different aspects of waste management and the circular economy.

The prioritisation and selection of the projects for implementation depends on the members' current ability, capacity, maturity and commitment level to collaborate.

5.0 EU CP Best Practices Examples

Key Messages:

- **European CE networks have adopted a multisectoral approach, addressing several value chain issues and targeting a range of audiences. CP is part of their focus.**
- **Trials of CP tenders and CP practices in the public sector are providing great insights and success stories that can be replicated in the private sector.**
- **CP best practices that accelerate the CE and deliver long-term impact and benefits are relevant to both public and private organisations.**

5.1 Circular Procurement Case Studies

Useful case studies of CP in the public sector were identified and analysed in an April 2019 study of Circular Procurement policy in the Baltic Sea region. The study mapped the procurement cases to the tools used in the procurement process to address the circular aspects. Examples included:

Multi-locker waste collection system and smart sensors – Porvoo region, Eastern Finland (Interreg Baltic Sea Region, 2018)

- Improved cycling of technical materials
- Remarkable improvement in recycling rate
- Better utilization and value retention of or raw materials
- Intake of new service concept

Street Lighting - Preiļi, Latvia (ICLEI, 2013)

- Use of GPP criteria that support circular aspects.
- Easy maintenance
- Improved recyclability

Carpool – City of Lappeenranta, Finland (CarPoolWorld, 2020)

- Sharing concept was used
- Improved intensity of use
- Service concept was used instead of buying product

Sustainable public kitchen and catering – Sodankylä, Finland (INNOCAT, 2015)

- Use of automatization and new technology that reduce the amount of waste in the food chain
- Value chain design from the environmental point of view

Learning Environment for public schools – City of Aalborg, Denmark (EC, 2018)

- The procurer's need is described in the subject matter of the contract.
- Eco-design and lifecycle approach is used
- Focus on Extension of lifespan
- Recycling and reuse of old furniture are paid attention to

Leasing clothes for stewards – The Netherlands (Ministry of Infrastructure and Water Management, Netherlands, 2017)

- Improved reuse and recycling
- Economically wise
- Eco-design

Second-hand computers – Gällevare, Sweden (Exporters, 1998)

- Economically wise procurement
- Extended lifespan for computers
- Reuse of computers is realised.

5.2 Private sector relevance

How can these best practice examples be applied to the private sector? We researched a design Options paper that confirms and outlines that following practices are relevant for all public and private organisations to accelerate the CE:

- Governance – policy mandate for procurement with adequate funding.
- Responsibilities and top management support.
- Knowledge – building capacity and promoting market solutions.
- Strategy aligned with appropriate policies.

- Organisational culture – focus on internal stakeholder and supplier’s collaboration.
- Open dialogue around innovative and functional criteria.
- Attraction of the market to create competitive and inclusive environment.
- Innovative Procurement procedures.

“We are looking ahead, as is one of the first mandates given us as chiefs, to make sure and to make every decision that we make relate to the welfare and well-being of the seventh generation to come (Vecsey, 1980)



Figure 6 Building Circularity into Our Economies through Sustainable Procurement p11 (UNEP, 2018)

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