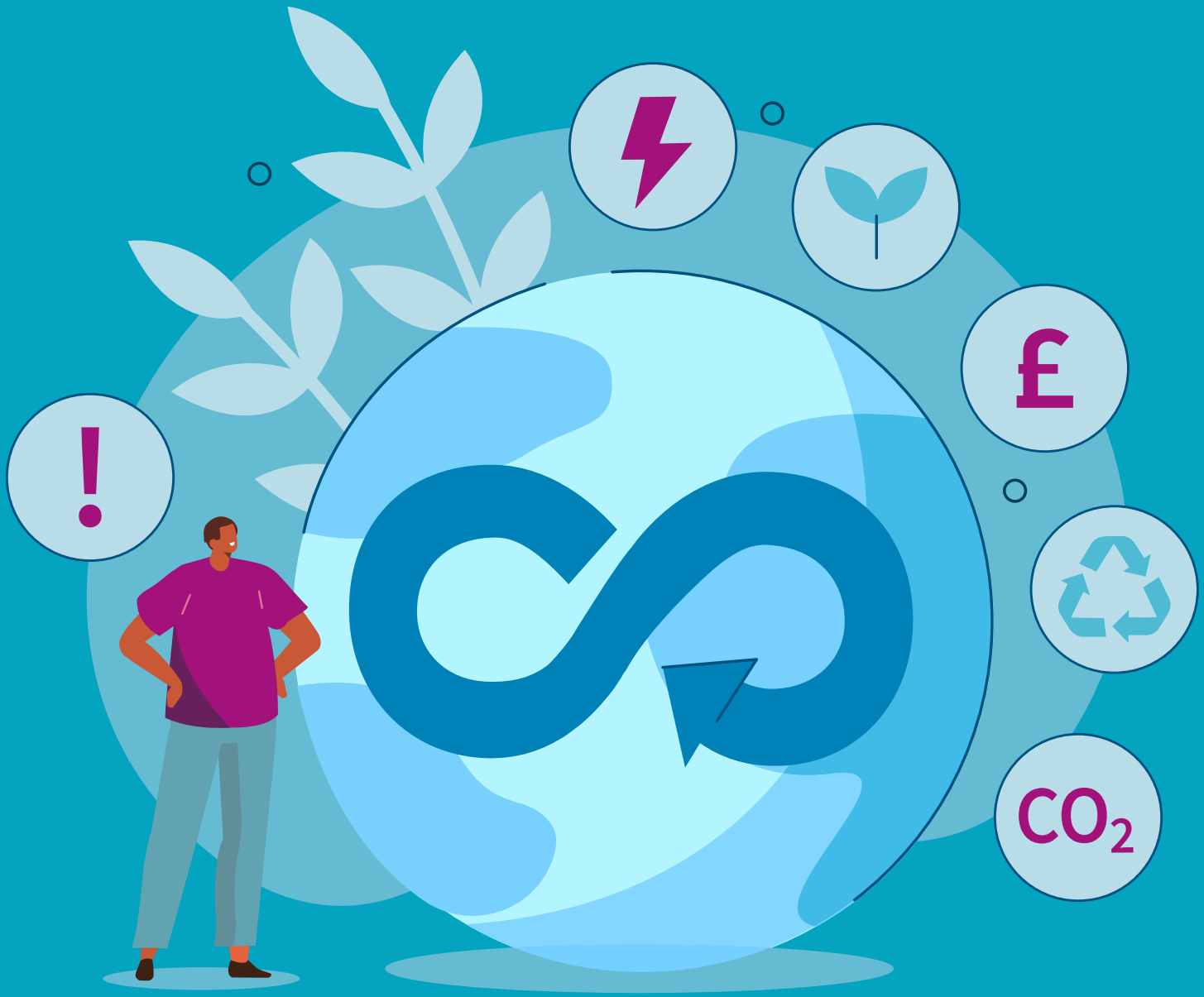
Circular procurement



IEMA

Transforming the world to sustainability

Contents

Introduction

The impacts and effects of how and when we make purchasing decisions, alongside what we choose to purchase, cannot be underestimated. As individuals, communities and organisations, our spending power represents a significant lever for positive change.

Procurement is one of the most important, but quite often also one of the most overlooked, phases in the lifecycle of the materials, products and services we use. Procurement practice represents a key 'make or break' stage for the success of any deliverable or outcome. It determines the effectiveness of measures to reduce negative environmental and social impact, and the extent to which we are able to achieve whole-life value; it can also be a springboard to innovation.

In this context, procurement strategies represent essential and effective mechanisms by which our economy can become more circular and contribute to a sustainable future. The outcomes from circular procurement activities can have a substantial and lasting influence on the way in which we manufacture and use goods and services, and how we facilitate a more efficient and 'closed loop' flow of resources within the economy.

This guide from the IEMA Circular Economy Network has been prepared to help equip sustainability and procurement practitioners and teams, as well as organisations' value chains, to transition towards the circular economy.

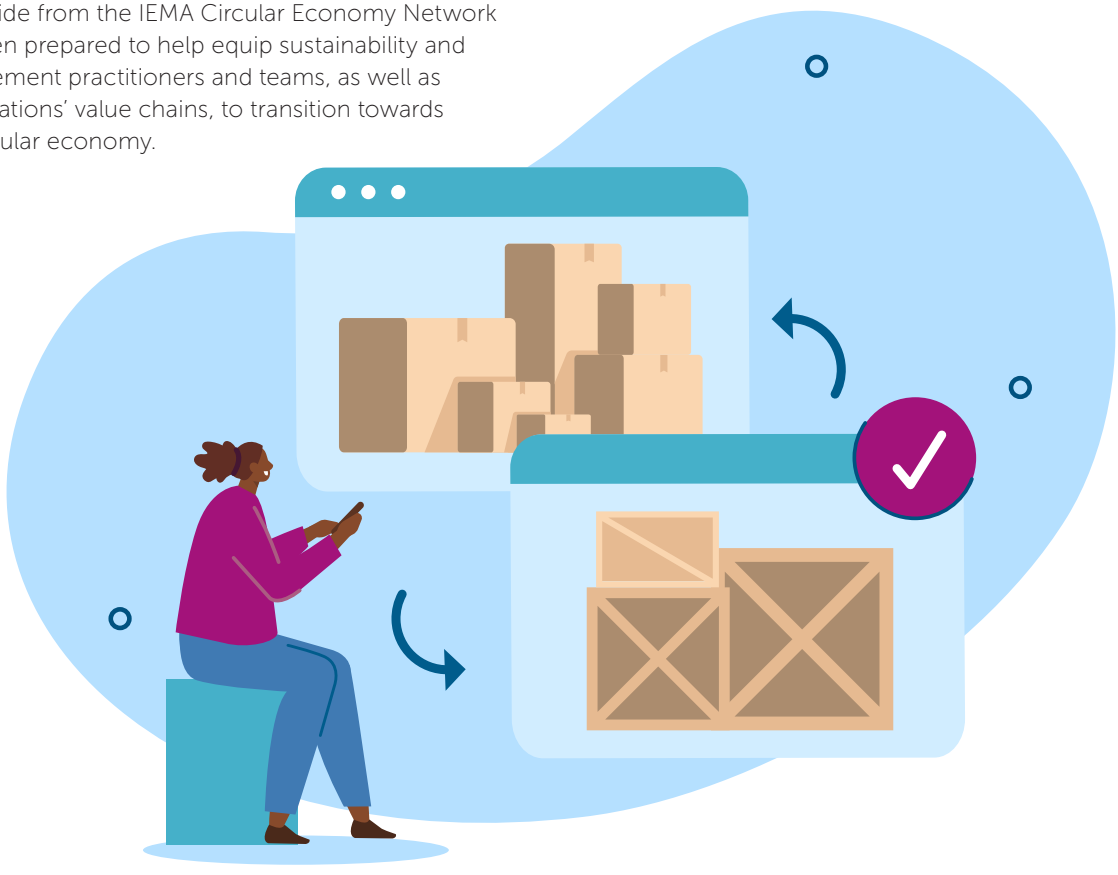
Section 1 of this guide covers:

1. What is circular procurement?
2. Why is it important?
3. What are the top five activities that organisations should undertake?
4. How can you measure performance and success?
5. Overcoming challenges

Section 2 provides links to the key circular economy policies from UK governments, and to a collection of standards, guidance and tools that can help practitioners to successfully embed circular procurement practices.

Further information on the concepts and terms in this guide can be found in IEMA's *Circular Economy 101*. Additional information on circular economy business models and practical ways to integrate them into business strategy can be found in the following supplementary guides:

- *How to integrate circular strategies into your business model*
- *Questions to help you put circularity at the heart of your business strategy*



Section 1

1.1 What is circular procurement?

Circular procurement is an approach to purchasing that deeply and systemically embeds the principles of the circular economy. It can be applied to the purchase of a material, product or service, or a combination of these.

Circular procurement typically adopts a long-term view of purchasing decisions and considers the whole-life impacts and opportunities associated with buying, leasing, hiring, sharing and digitalisation practices.

Contracts based on or incorporating circular procurement decisions more effectively consider and integrate a range of wider environmental, social and economic externalities. Contracts successfully integrating and incentivising circular practice therefore hold much greater potential for sustainable outcomes, with benefits for organisations and the wider economy.

1.2 Why is circular procurement important?

The concept and principles of a circular economy are integral to a sustainable future: the rate of global resource consumption still far outstrips the ability of our planet to sustain this level of supply. The way practitioners specify, procure and manage assets, products and services has the potential to significantly augment the performance (whole-life value) derived from the resources used. In turn, more sustainable resource management has the potential to inspire action across local, regional, national and international value chains, and will reduce the pressure we exert on the natural environment.

Circular procurement practice is critical in the lifecycle of managing resources sustainably. Procurement activity represents a stage where the good intent and ambition set out in the planning and design of an asset, product or service can either be championed and secured or communicated ineffectively and diluted or lost.

The 'watering down' and diversion of specifications and requirements can occur through, for example:

- Short-term and/or capital cost-focused selection
- A lack of detail in specification
- Uncertainties concerning ownership or guarantees/warranties, responsibility or logistics
- Risk-averse behaviours or a 'this is what we've always done' mentality.

The contracted lifecycle performance of any resource (particularly when at 'in use' and 'end of first life' stages) is therefore heavily dependent on procurement influence and success.

To move towards a more circular world, the things consumers and organisations use and buy must embody minimalism/sufficiency, durability, adaptability and repairability. Where relevant, broader sustainability indicators should also be considered, for example, being renewable, bio-based and non-toxic. At their end of first useful life, they must foster retention of resource value through, for example, reuse, repurposing, remanufacturing and eventual disassembly (into componentry, materials or raw materials) for (re)incorporation into high-value 'second life' applications. However, currently this is not how value chains are typically designed, so circular procurement practices must be used to send a positive and supportive signal to the market, to promote upskilling and change, and to encourage equitable sustainable growth and innovation.

The world consumes some 100 billion tonnes of materials a year.[1]

>90% of biodiversity loss is due to the extraction and processing of natural resources.[2]

The circular economy, and the way we manage the products we manufacture across their lifecycle, has the potential to address up to 45% of the net zero challenge.[3]

However, the vast majority of extracted materials entering the economy are still 'primary' (or virgin) in nature, with the share of 'secondary' (used, scrap, by-product) materials used in industry declining steadily from 9.1% in 2018 to 7.2% in 2023.[4]

1 Circularity Gap Reporting Initiative (2020), *The Circularity Gap Report 2020.* Retrieved from: https://www.circularity-gap.world/2020

2 Ellen MacArthur Foundation (2021), *The Nature Imperative: How the circular economy tackles biodiversity loss.* Retrieved from: https://www.ellenmacarthurfoundation.org/biodiversity-report

3 Ellen MacArthur Foundation (2019), *Completing the picture: How the circular economy tackles climate change.* Retrieved from: https://www.ellenmacarthurfoundation.org/completing-the-picture

4 Circularity Gap Reporting Initiative (2023), *The Circularity Gap Report 2023.* Retrieved from: https://www.circularity-gap.world/2023

1.3 What are the top five activities that organisations should undertake?

The following activities will help procurement and other practitioners integrate circularity into procurement processes and decisions. These activities may also be effectively integrated into and support wider sustainability or environmental assessment processes, to create synergies across organisational practice.

1. Identify your organisation's 'most significant' or 'key' purchases

- In which areas are your most significant spend?
- Which materials, products or services do you buy most of?
- Does your organisation make repeat purchases of the same materials, products or services?
- Which purchases do you make that are already known to be potentially 'impactful' or 'risky' in the context of the natural environment?
- Who are the key stakeholders for these purchases, both internal (e.g. service or product users, finance) and external (e.g. customers), and what is their appetite for change and their drivers?
- What is the importance of this service or product to the organisation? What would happen if it was eliminated?
- What are the timescales for replacement/ procurement and how critical are they for the operations of the organisation?
- What does the whole value chain look like for this service or product?
- What is your organisation's relationship with the supplier? Could it influence the product or service design?

2. Understand the sustainability and circularity factors associated with those 'key' purchases and the associated risks and opportunities for your organisation

One effective method of assessing factors, risks and opportunities associated with purchases is to conduct a materiality assessment. In this you may wish to consider factors such as:

- Are the materials or resources you purchase and use renewable or non-renewable? Do they boast other sustainability or low environmental impact features? Are these features independently verified, e.g. through recognised EcoLabels or Environmental Product Declarations?
- From where do these resources originate? Can you trace them to their source?
- What are the associated environmental, social and economic impacts of production, supply, consumption and end-of-life management?
- How is the material, resource or service used? What is its functional use phase, mean time to service, throughput etc? Is it a workhorse-type asset or specialist application?
- What is the asset's functional lifetime? Is it possible to extend that lifetime through good practice?
- What is its maintenance, parts replacement and repair schedule? Are there any guarantees or warranties associated with it?
- What materials, chemicals and energy are used across a purchase's lifetime?
- What is the whole lifecycle greenhouse gas emissions impact of the product or service?
- What happens to the asset at the end of its functional life? Does it follow a linear 'take, make, use, dispose' model? Or a more circular 'take, make, recover, reuse/remanufacture/repurpose/ recycle' model?
- What waste is generated across the lifecycle of the material or product? How is this managed?
- Taking responses to the above points into consideration, what are any associated risks regarding your external stakeholders to your use (or not) of the materials or services you specify, purchase and use?

Consideration of these issues will help organisations identify opportunities and also formulate 'circular ambitions'. Where answers to these questions are not available or known at the time of asking, organisations should be prompted to more deeply engage with its value chain, to acquire useful information and data.

3. Is there an alternative, more circular way of achieving the same outcome?

- What is the potential for eliminating the asset or service altogether, delaying the procurement or utilising existing resources elsewhere within the organisation?
- Do you have a clear specification for what the procurement seeks to achieve? Could that specification be enhanced to better articulate your circularity expectations?
- Does your specification enable innovation?
- How could you change your procurement approach to better recognise and improve whole-life value? For example, do you need to buy an asset, or would it be more efficient to lease or pay for the asset as a service? Is there scope to collaborate with another organisation (for use of an existing asset/product and/or to procure jointly)? Does a product or service require minimal intervention during use? Can you derive value from a material or product at its end of first life, and how is this value factored into the procurement assessment process?
- Is it possible to extend the functional life of an asset, e.g. through repair, refurbishment or remanufacturing? If not, how does that affect your procurement decision process? How does that shape the way you assess 'value'?
- Can you reduce waste (your own waste and/or your suppliers' waste) by changing your business model, using different (or fewer) materials or design, applying opportunities for asset life extension, or designing to enable reuse or retention of resource value at end of life?
- How can you work with the market to develop innovative approaches?

4. Develop and apply a supportive procurement process

It is beneficial to focus initially on a small number of key materials, products or services, and work to better understand the associated material flows and key lifecycle impacts. You will then be in a better position to:

- Identify and assess alternative approaches, products and services ahead of procurement practice
- Establish the elements of your organisational practice upon which you can exert immediate influence
- Extend your understanding to a wider range of purchasing decisions.

Once you have come to a position of improved clarity on the impacts of your key materials, products and services, organisations should seek to clearly set out the performance commitments you expect your value chain to adhere to. These commitments need to be communicated clearly and consistently with messages reinforced, alongside the level of support and/or benefit you are offering to those that take practical and positive action.

A transparent and reproducible process of value-chain assessment should then be prepared and applied. In each case, the factors you assess (as determined arising from Steps 2 and 3), and their individual weightings (as relevant to circular practice), must be tailored to the priorities of your organisation and value chain. Those marking or evaluating value-chain responses must also be technically competent to do so: you may need to work with specialists to upskill your colleagues and/or to help them understand 'what to look for' as well as 'what good looks like'.

5. Engage with your value chain to identify and trial materials, products or services

By incorporating the consideration of material- or product/service-specific information into the procurement process, better informed, more transparent and more robust decision-making is achieved, and more circular materials, products or services can be acquired.

Engagement with your value chain is an essential part of this process. Simply by asking questions about a material, product or service's sustainability performance and circularity credentials you are demonstrating that this is important to you as a potential purchaser. If you ask your value chain to innovate, you should also consider mechanisms to fairly share risk and reward.

Exploring the range of metrics available (Section 1.4) and agreeing indicators/targets with your suppliers will help create focus and can drive progress.

Where your trials succeed, share the results (when possible and appropriate) to inspire others to follow suit. If procurement intent is diluted in delivery, investigate the reasons, and make sure processes evolve to reduce future dilution (risk): 'Plan > Do > Check > Act'.

1.4 How can you measure success?

No single method or metric is likely to fully capture how circular a material, product or service is. To this end, it is prudent to start by understanding the general types of metrics that can be used to measure the success of procurement activities. These can then be tailored to the specific sector, project or activity within which practitioners are working.

Some key groups of metrics are described below, adapted from a MI-ROG white paper[5] and UKGBC's circular economy metrics paper.[6] Further details, with examples, of the different types of metrics are given in Appendix A.

Remember: when you have successfully qualified or quantified circular procurement practices, share the mechanisms and outcomes with your purchasing teams, the wider business, your value chains and – where possible – the wider industry.

Impact metrics

Impact metrics are best used where practitioners can measure the specific attributes or performance of an asset, product or service. They can be compared to established benchmarks and targets, and/or against sector trends.

Attribute metrics

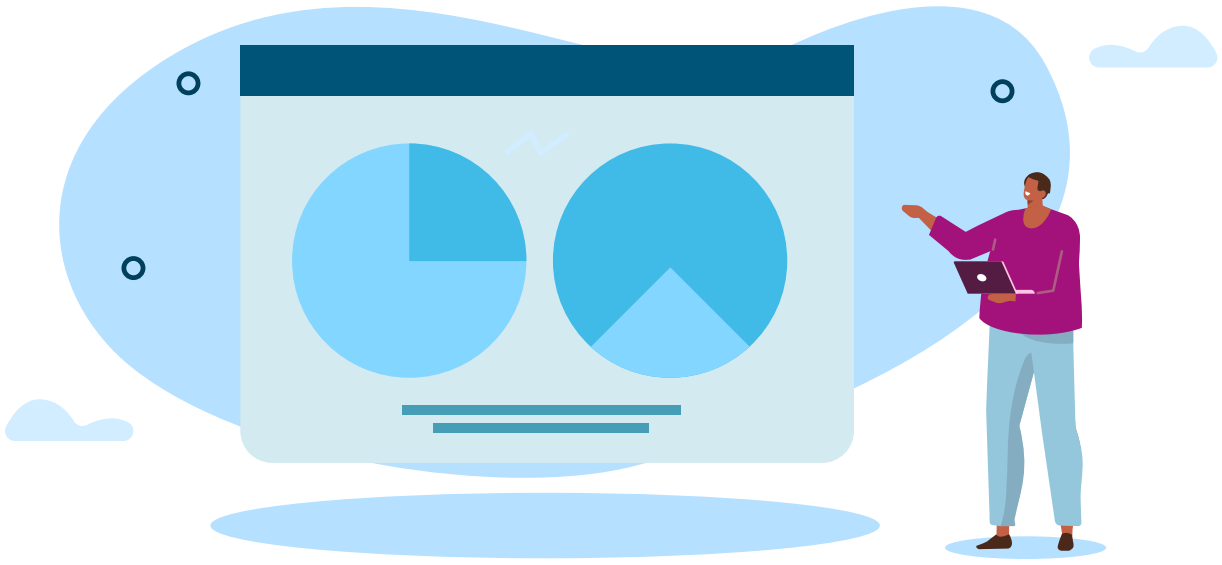
Typically, attribute metrics are more appropriate to individual assets, products or resources within their use phase rather than a project as a whole. Attribute metrics are particularly useful for assessing the circular potential of products and technologies.

Intensity metrics

Intensity metrics are generally articulated as a proportion of total spend, or in relation to the size of a company, activity or asset. They are best used where practitioners can measure the specific attributes or performance of an asset, product or material in the context of an overall budget or other economic metric.

Enabler metrics

Enabler metrics demonstrate progress in driving forward circular outcomes. They are best used where the attributes or performance of assets, products or materials are too complex or hard to clearly quantify. They can be used in combination with other metrics, and where the preparation of a 'narrative' adds real value, e.g. a case study for an ESG report.



5 MI-ROG, *Measuring circular economy performance — suggestions for infrastructure organisations*, White paper No. 2 | 2018; https://aecom.com/content/wp-content/uploads/2016/08/180037UKI_MI-ROG_White-paper_0.6.pdf

6 https://ukgbc.org/wp-content/uploads/2023/03/Circular-Economy-Metrics-Paper.pdf

1.5 Overcoming challenges

When starting or advancing your journey to circular procurement, you are likely to be presented with challenges. The section below suggests key strategies in overcoming common barriers. It might be required to break processes down into smaller, simpler steps to enable engagement with stakeholders and create meaningful change. Choosing a lower-profile product or smaller project to get started might help to demonstrate the model can scale, and will likely provide evidence on the benefits of adopting circular processes as well as build relationships across the stakeholder groups to enable effective collaboration on future projects.

Knowledge and data availability: Where action cannot be currently taken, and/or information cannot be acquired to resolve potential 'blockers', practitioners should commit to working with their value chains to improve their knowledge position and create a plan for data collection.

Scale and complexity: It can be challenging – at least in the short term – to implement circular procurement ambitions in their entirety, especially if established value chains are long and fragmented. These potentially 'difficult to navigate' environments can create scenarios where the positive and negative impacts resulting from procurement decisions are not recognised, are poorly understood or simply remain unclear. By identifying delivery partners that are engaged with the subject and most closely align with your organisation's ethos for circularity, progress in moving from linear to circular is likely to be a smoother transition.

Contract duration and structure: The longer an asset, product or material remains within a contract or as part of 'accepted practice', the more difficult it may be to establish a more circular approach or agreement to change. Resistance to change or risk aversion (on the side of both the procurer and the supplier) may be a highly influential factor in this scenario. Aim to strike a balance by providing a long-enough contract that enables a supplier to invest in change but not so long that progress can stagnate. Where possible, adopt flexible clauses in contracts, to allow minor amendments that suit both parties.

Legal barriers: In many cases, the current legislative environment presents barriers to circular practice. For example, many medical instruments can – for legal health reasons – only be used once. Similarly, the specifications for pipe joints in the utilities sector require, by law, significant packaging protection for transit. Equally, the definitions of waste and the associated management requirements can present challenges for closing the loop on materials and products. Where this is the case, practitioners should try to work through representative industry bodies, research organisations and active engagement to lobby government for better practice.

1.6 Conclusion

Circular procurement represents a transformative approach to sourcing goods and services that prioritises sustainability, resource efficiency and waste reduction. By adopting circular procurement practices, organisations can reduce their environmental impact, foster innovation and partnerships, and promote the use of renewable resources while contributing to a circular economy. This shift not only benefits the planet but also offers long-term economic advantages through cost savings, enhanced supply chain resilience and improved reputation. As awareness and adoption grow, circular procurement has the potential to drive systemic change across industries, creating a more sustainable and regenerative future.

IEMA continues to collaborate closely with stakeholders across government and industry to support policymakers in integrating circular economy practices and business models into future policy.

Section 2

2.1 UK policy drivers for circular procurement

There is no 'catch all' policy for circular procurement within the UK. Instead, each government in the UK is tackling aspects of a circular economy through a variety of strategic, legislative and non-legislative instruments specific to each administration.

Several strategies have been published within the UK, which form the foundations of efforts to reduce waste, to adopt circular practices and to provide the context for circular procurement. Each administration has published policies at different periods over the past eight years, resulting in varied ambitions that will ultimately drive different levels of circular procurement practice. Changes in party governance will also continue to influence these policies, so practitioners are encouraged to seek out updates to and advancements of key policy documents.

The main UK governmental strategies and policies that directly or indirectly support circular procurement are:

Scotland

Scotland published its *Making things last: A circular economy strategy for Scotland* in 2016, which set out ambitions and initiatives for adopting lifecycle approaches to product and packaging design, emphasising products with long lifetimes, repairability and recyclability. Scotland's strategy recognises the role of public procurement in driving circularity, and includes plans for leveraging statutory guidance on sustainable procurement and training procurement professionals in circular economy principles. Furthermore, the strategy identifies key products and services where procurement innovation can promote circular approaches such as leasing, repair and remanufacture.

Through these foundations, Scotland has continued to address the circular economy and consulted on a 'Route Map to 2025 and Beyond' in 2022, setting out a strategic direction for delivering Scotland's circular economy vision from now to 2030. Building on this first consultation, an additional consultation took place in late 2023/early 2024 on the key priority actions that will unlock progress across the waste hierarchy.

In addition to the Route Map, the Circular Economy (Scotland) Bill (2023) establishes the legislative framework to support Scotland's transition to a zero-waste and circular economy, significantly increase reuse and recycling rates, and modernise and improve waste and recycling services.

Wales

In 2021, the Welsh government published its *Beyond recycling: A strategy to make the circular economy in Wales a reality.* The strategy aims to prioritise procurement of goods and services made from remanufactured, refurbished or recycled materials, as well as those sourced from low-carbon and sustainable materials, enhancing economic, social and environmental outcomes. The strategy plans to bring forward legislation to deliver key schemes, invest in infrastructure that will support the circular economy, and continue to support innovation. The Welsh government aims to make procurement of reused, remanufactured and high recycled/secondary material content and sustainably sourced items the default, 'business as usual' approach.

Northern Ireland

Northern Ireland aims to halve its annual material footprint to eight tonnes per person by 2050. Its *Circular economy strategy for Northern Ireland* (2023) sets out how a circular economy can reduce waste, design and use products responsibly, and provide the stability the region needs, and create prosperity the region can share. Given it is not possible to target all sectors at once, the strategy focuses on four business sectors (construction and the built environment, the bioeconomy, advanced manufacturing, and tourism and hospitality) and four types of material flows (food, electricals, textiles and packaging) that can help kickstart the move to a circular economy. These have been chosen due to their potential for:

- Reducing material use and cutting carbon emissions
- Tackling wasteful practices
- Positive environmental impact
- Growing a low-carbon economy.

The policy goals suggested for driving circularity within these sectors and material flows are to collaborate for system change, design out waste, manage resources to retain value, stimulate systems change with funding, incentives and penalties, and invest in innovation, research and skills.

England

The UK government's waste strategy, *Our waste, our resources: A strategy for England* (2018), sets out a range of ambitions to tackle waste and manage resources in England. The document supports the adoption of circular economy principles, aiming to minimise waste generation and promote the reuse, repair, and recycling of materials. It highlights the importance of incorporating environmental considerations into procurement decisions, such as selecting products with minimal packaging or those made from recycled materials. Furthermore, the strategy outlines specific actions to support sustainable procurement, including promoting product standards that prioritise resource efficiency and durability, encouraging innovation in product design and manufacturing processes, and leveraging public procurement power to drive demand for sustainable products and services.

The Environmental Improvement Plan published in 2023 cites 'maximise our resources and minimise our waste' as the fifth of 10 goals to work 'towards a truly circular and sustainable economy'.

In 2024 the new Labour government committed to developing a circular economy strategy. The strategy is to be delivered over this parliament and the next, positioning the UK as an international leader in circular design, technology and industry.

2.2 Standards, guidance and tools

Various industries, government departments and other organisations have helped to drive the circular procurement agenda forward by producing guides and standards for practitioners. This section highlights some of the key guidance.

Zero Waste Scotland: Procuring for a circular economy – category & commodity guidance

The Zero Waste Scotland website is a great resource for circular economy guidance, including an introduction to procuring for a circular economy with a guide on category and commodity procurement. This interactive guide supports procurement activities with a navigation map of the different stages of procurement, and includes approaches, examples and what an 'ideal response' would demonstrate for a variety of category levels.

The Government Buying Standards

The Government Buying Standards (GBS) were first introduced in 2012 and are part of the public procurement policy. GBS has undergone several reviews and updates relating to and expanding the standards to different sectors and industries. All government departments and their related organisations must make sure that they meet the minimum mandatory GBS when buying goods and services. For example, the GBS sets out tender specifications when purchasing various goods and services, with mandatory and best practice level guidelines.

NHS England: Net zero supplier roadmap

NHS England has committed to reaching net zero by 2040 for direct emissions and by 2045 for indirect emissions through the goods and services procured from partners and suppliers. In September 2021, a roadmap was approved that sets out ambitions for all NHS procurement, which focuses on reducing carbon emissions and boosting social value between now and 2030.

PAS 2080:2023 Carbon management in buildings and infrastructure

It is widely recognised that the circular economy has a key role to play in achieving net zero.[7] PAS 2080:2023 Carbon management in buildings and infrastructure is a carbon management process for the built environment that integrates circular economy approaches through application of the Carbon Management Hierarchy.

X29 Clause for NEC4 contracts

NEC published its 'X29 Climate Change' clause in July 2022, with the intention that it should be used in NEC4 main and main subcontract forms. As the clause is designed to help NEC users achieve net-zero greenhouse gas emissions (and other related climate change and biodiversity targets), including requirements for circular procurement practice, it will provide opportunities for clients to positively influence their value chains.

UKGBC: Circular economy guidance for construction clients: How to practically apply circular economy principles at the project brief stage

This guidance aims to encourage construction clients to integrate ambitious circular design and construction principles into project briefs for non-domestic buildings. It tackles common commercial challenges, offering practical support and evidence to help organisations set clear circular objectives for their projects. Additionally, the guidance seeks to ensure the construction value chain can effectively achieve circular economy goals while minimising and mitigating risks related to budget, project management and timelines.

London Plan Guidance: Circular economy statements

This guidance outlines how to prepare a circular economy statement to comply with the London Plan policy. It includes recommendations on designing new buildings and prioritising the reuse and retrofitting of existing structures to promote circular economy outcomes. Furthermore, the London Plan policy mandates that all developments aim for high sustainability standards and incorporate circular economy principles.

edie: The business guide to sustainable and circular procurement

This edie business guide offers an end-to-end overview of sustainable procurement practices and processes for businesses. It features a range of good practice case studies and tips to help businesses overcome procurement challenges and capitalise on sustainability opportunities. The guide specifically focuses on how procurement practices can enhance circular economy actions and strategies throughout the value chain and the lifecycle of materials and products.

Business in the Community: Circular procurement guide

This guide outlines how businesses can redesign their procurement processes for greater 'circularity'. The five steps suggested in the guide are as follows:

1. Define your circular ambitions
2. Formulate your questions and communicate with the market
3. Choose your supplier(s) and award the contract
4. Implement circular usage policies
5. Evaluate success.

7 Ellen MacArthur Foundation (2019), *Completing the picture: How the circular economy tackles climate change.* Retrieved from: https://www.ellenmacarthurfoundation.org/completing-the-picture

Scottish Government: Circular procurement and supply eLearning

The eLearning comprises nine modules (Welcome; Circular Economy; Circular Procurement & Supply; Early Collaboration; Sourcing & Supplying; Identifying and Improving Outcomes; Circular Examples; Top Tips for Buyers and Suppliers; and Call to Action).

Ellen MacArthur Foundation

A circular economy procurement framework was created by the Ellen MacArthur Foundation to help companies kickstart circular economy initiatives within their procurement process.

Circular Procurement in Europe: Toolkit for local and regional governments

This toolkit has been specifically designed to assist cities in implementing circular procurement strategies for managing construction demolition and bio-waste more sustainably. It complements the generic Circular Procurement Guide.

Copper8: Circular procurement in 8 steps

This book is a circular procurement guide for anyone who is responsible for purchasing products for business purposes. The authors offer their method for use in your own context. One of the conclusions of this guide is that there is no single 'magic bullet' for achieving circular procurement. However, the authors provide basic principles, practical examples and the knowledge they have accumulated over the past 10 years.

Appendix A: Examples of metrics for assessing the success of circular procurement

Impact metrics
Volume of materials consumed
Volume of primary (virgin) or other (reused, repurposed, recycled, by-product) materials used (and hence avoided, if a baseline is available) in design or across a lifecycle
Percentage (by weight or value) of primary materials or products substituted with reused, repurposed, recycled or secondary (scrap, by-products) content
Number or proportion of systems or products designed to be easily maintained, repaired and adapted, and disassembled, demounted or deconstructed for recovery and reuse
The planned lifespan of asset or product (in years), especially if extended as a result of embedded circular measures
Proportion of resources or value lost during transit, delivery or installation/implementation (damage or loss)
The quantity of waste generated (by weight)
The percentage (by weight) of waste consigned to landfill
Residual value – an estimate of the value or amount (weight) of materials going into a product/asset vs the value or amount (weight) of material that could be reused or recycled at the end-of-life stage. (NB This can also be used in relation to the 'buildings as materials banks' concept, where there is still value in the products and materials the building was built with to justify deconstruction and reuse, as opposed to demolition, where the perceived value is only the land the existing building is on.)
Intensity metrics
The quantity (volume or tonnes) of waste generated, or materials consumed, as a proportion of: • £m revenue • £m cost of production • Units manufactured • Gross internal floor area.
Practitioners may also seek to calculate the 'revenue saved' or 'generated against' impact metrics as part of any procurement process, to demonstrate commercial benefits.
Attribute metrics
Replacement rate for one or more assets or resources
Average depreciation rate across one or more assets or a resource
Asset management metrics such as mean time between failure (MTBF)[8], mean time to failure (MTTF)[9], or equipment effectiveness
Whole-life costs.

8 Predicted elapsed time between inherent failures of a mechanical or electronic system during normal system operation.
9 Expected time to failure for a non-repairable system.

Enabler metrics
The proportion of procurement activities that incorporate circular economy requirements
Number of circular economy innovation initiatives successfully implemented
Number or proportion of assets or resources that have been leased vs sold
Number or proportion of assets or resources that have been subject to whole-life assessment (carbon, cost, other)
Number or proportion of assets or resources that benefit from material tagging or integration of circular data
Number or proportion of assets and/or asset components that use condition-based monitoring and maintenance, e.g. smart water leakage detection
Number or proportion of assets and/or asset components that have end-of-life management plans
Number of circularity case studies generated.

Further information

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About IEMA
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We are the Institute of Environmental Management and Assessment (IEMA).

We are the global professional body for over 22,000 individuals and 300 organisations working, studying or interested in the environment and sustainability.

We are the professional organisation at the centre of the sustainability agenda, connecting businesses and individuals across industries, sectors and borders.

We also help and support public and private sector organisations, governments and regulators to do the right thing when it comes to environment- and sustainability-related initiatives, challenges and opportunities.

We work to influence public policy on environment and sustainability matters. We do this by drawing on the insights and experience of our members to ensure that what happens in practice influences the development of government policy, legislation, regulations and standards.

IEMA Transforming the world to sustainability