



Module 12

Green Procurement

Circular Economy in Construction



24
partners

12
countries

Date of Event

*Author/ **Institute***

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The aim of this module is to demonstrate the role which public procurement can play in supporting the transition towards a circular economy in construction.



1. Define and outline the principles of EU Green Public Procurement (GPP)
2. List and outline the benefits and opportunities of Green Public Procurement (competitiveness, social responsibility, reputation etc.,) for circular construction
3. Outline the scope to follow a circular procurement strategy in construction.
4. List the steps in the circular procurement process (pre to post procurement).



Topic 1 – Introduction to Green Procurement

Topic 2 – Tendering and Circular Procurement

Topic 3 – Certification and Eco Labels



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1. Introduction to Green Procurement





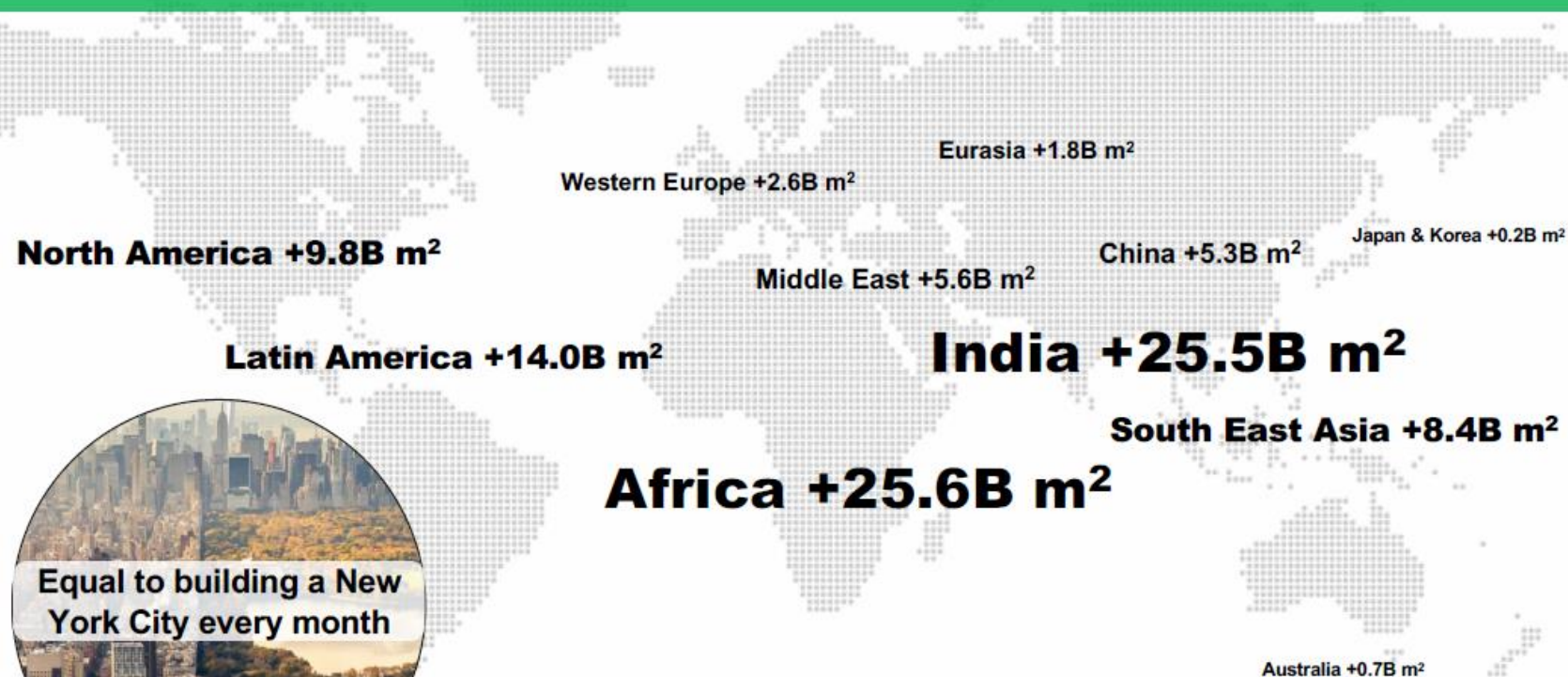
CLIMATE CHANGE IS CAUSING REAL, DRASTIC DAMAGE TODAY







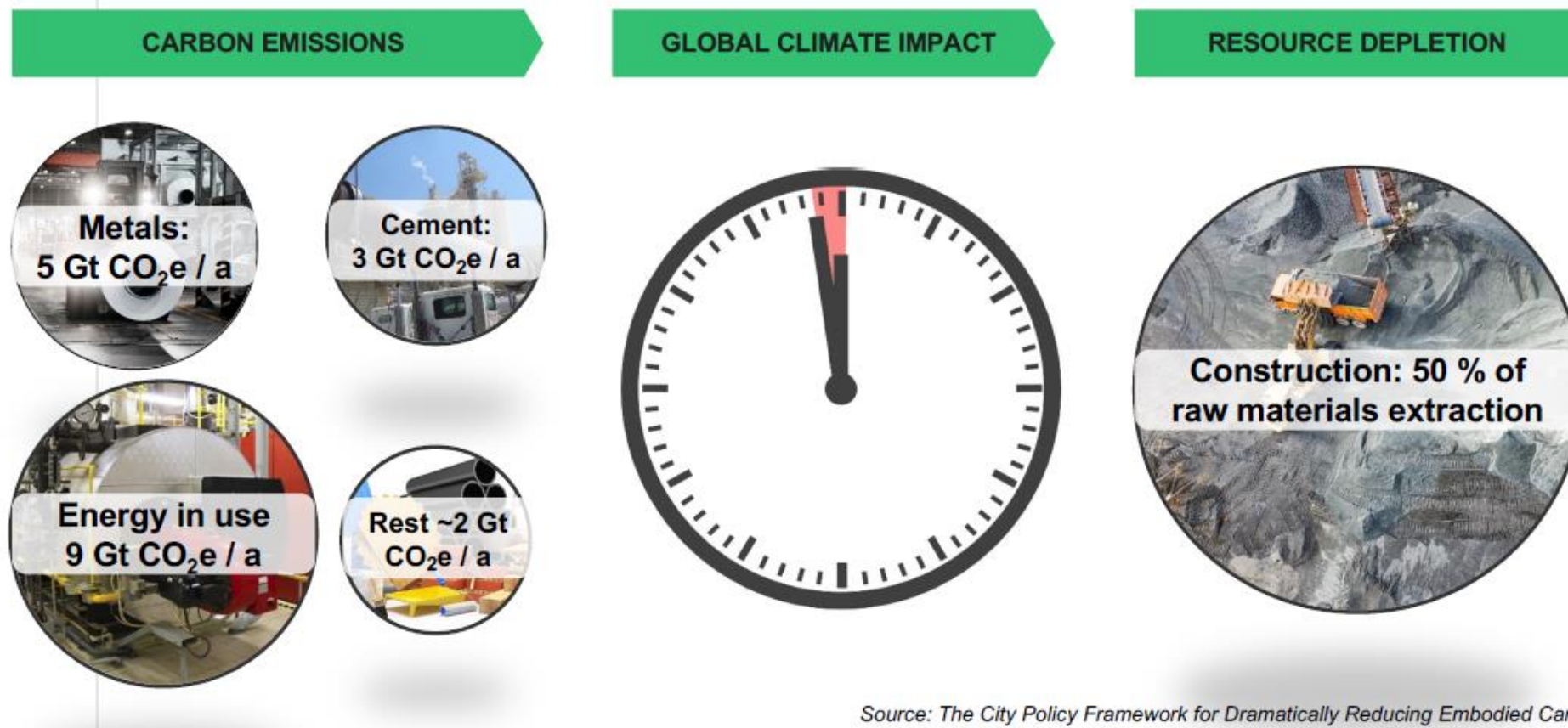
THE GLOBAL BUILDING STOCK WILL DOUBLE IN 40 YEARS



Figures in billions of m². Sources: Architecture 2030, Global ABC



Embodied carbon from this expansion alone will accelerate climate change by six years



Source: The City Policy Framework for Dramatically Reducing Embodied Carbon



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Source: OneClick LCA

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Every product we buy has a huge range of environmental impacts,
across the product life-cycle

Supply chain	<ul style="list-style-type: none">• Consumption of raw materials• Energy/water use, emissions and (toxic) waste from industrial processing and transportation
Usage	<ul style="list-style-type: none">• Energy/water consumption• Generation of waste and emissions• Use of consumables (e.g. paper, ink)
Disposal	<ul style="list-style-type: none">• Generation of waste• Toxic emissions• Potential new raw material



The construction and use of buildings in Europe uses approximately half of all materials extracted from the earth, consumes 40% of energy, a third of all water and generates a third of all waste



Image source: Wikipedia commons



Impact examples: Climate change/CO₂ emissions



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Impacts of construction purchases:

Electricity used to power our buildings and equipment

Fuel to heat our buildings

Emissions from **industrial processes** and **transportation** throughout supply chains



How can GPP help?

Require **high energy efficiency standards** for buildings and products

Purchase **green electricity**

Shift to **zero emission vehicles** (and encourage suppliers to do the same)



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Images source: EU GPP training toolkit

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Impact examples: Air and water quality

Impacts of construction purchases:

Dust from **demolition**

Chemicals, oil, paint, and construction
site **debris polluting waterways**

Sediment polluting rivers and lakes



How can GPP help?

controlling chemicals and limiting the
use of hazardous substances

Following best practice for **safe,**
sustainable and circular use of
excavated soils



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Image source: EC GPP training toolkit

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Impacts of construction purchases:

Waste materials from **construction and demolition** work



Click [here](#) for further information on how GPP can help address environmental impacts



How can GPP help?

Promote **circular economy** solutions

Encourage the use of **recycled materials** in construction



Some key choices about building design to reduce impacts:

Construction:

- **Construction products** (recycled materials such as aggregates from construction and demolition waste)
- **Transportation** of aggregates to production sites by rail or shipping
- **Environmental management** of construction and demolition **waste**



Image source: EC GPP training toolkit



Some key choices about building design to reduce impacts

Use:

- **Energy performance** during occupation (lighting, heating, cooling and ventilation)
- **Lifespan** of the building and its elements (service life):
 - adaptation of building and its structure at the end of service life
 - healthy and attractive working environment (good indoor air quality , natural light, etc.)
- **Nature-based solutions** (green roofs and walls, habitats in courtyards and patios, sustainable urban drainage systems, street trees)

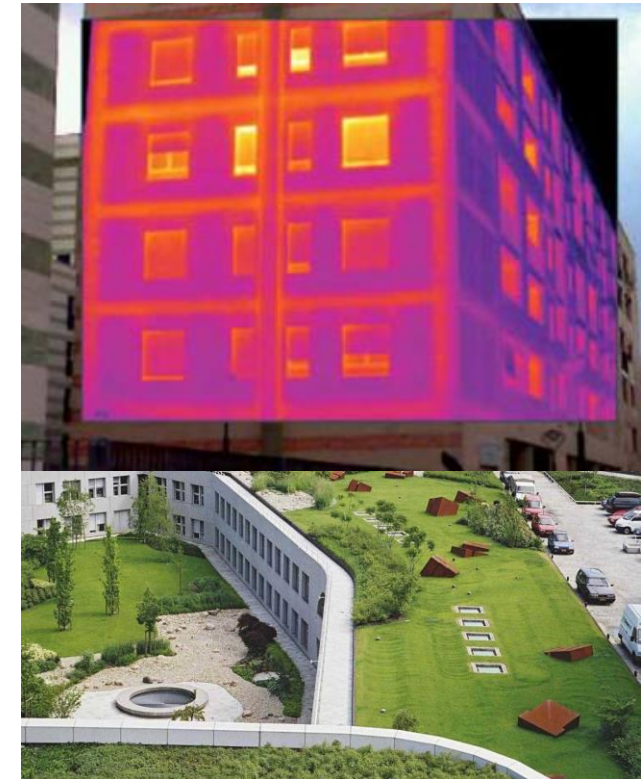


Image source: EC GPP training toolkit



Procurement can be a powerful tool in meeting
environmental policy objectives

....OR....

....It can be **part of the problem**



GPP 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”*

GPP can affect environmental impact:

- **Directly** – through improved environmental performance of goods, services and works bought
- **Indirectly** – through using this market leverage to encourage companies to invest in cleaner products and services



Green Public Procurement (GPP) or Green Purchasing.

€1.8 trillion
is spent by EU public authorities each year
(14% of EU GDP)

GPP aims to use this power to drive the market for more sustainable goods and services choosing environmentally friendly goods, services and works, they can make an important contribution to sustainable consumption and production



Costs vs Benefits of GPP

- Applying **life-cycle costing (see module 10)** can help to identify products and services with the optimal combination of whole life costs, quality and environmental performance.
- In certain areas, GPP may imply higher upfront costs due to the need to **invest** in innovative materials, production methods, testing/ certification and management processes
- But in many other areas, including the construction sector, there are significant opportunities **to improve environmental performance without additional costs or impacts on competition.**



Image source: Euronews



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Costs vs Benefits

- Many suppliers, including Irish SMEs, have already invested in green technologies and processes in order to save costs and compete for private sector **clients** who increasingly **demand more sustainable solutions**
- as **the cost of emissions increases** and **regulations tighten**, companies and products which have not invested in low-carbon products and processes will become more expensive
- Purchasing greener products at an early stage of their development allows purchasers to **benefit from innovation** and to help shape future product and service offerings



GPP allows Public Authorities to achieve environmental targets:

- **Deforestation**, (e.g. through the purchase of wood and wood products from legally harvested and sustainably managed forests)
- **Greenhouse gas emissions** (e.g. through the purchase of products and services with a lower CO2 footprint throughout their life-cycle)
- **Water use** (e.g. through choosing more water-efficient fittings)
- **Energy efficiency and resource use** (by choosing products which are more efficient and implementing environmentally conscious design principles, e.g. cradle-to-cradle)
- **Air, water and soil pollution** (by controlling chemicals and limiting the use of hazardous substances)
- **Waste** (by specifying processes or packaging which generate less waste or encouraging reuse and recycling of materials)



GPP sets an example to private consumers

- Green purchasing means setting an example for the general public and the private sector, and **influencing the marketplace**.
- Establishing a GPP policy, and communicating initiatives and their results, **demonstrates** that action in this area is possible and that it leads to positive outcomes.
- It can also **encourage private sector** organisations to use green criteria for their own procurement.

GPP raises awareness of environmental issues

- GPP can also act as a useful channel for **raising environmental awareness** by identifying the environmental impacts of a particular product/service throughout its life-cycle and providing information on the benefits of greener alternatives.
- For example, serving organic and sustainable food in a public canteen is likely to increase awareness amongst users and providers of the service.



GPP improves quality of life

- Policies on GPP can improve services to the public and thus enhance quality of life. Cleaner public transport, for example, improves air quality. Reduced use of toxic chemicals in cleaning products provides a healthier working environment.

GPP helps establish high environmental performance standards for products and services

- GPP can help drive higher quality standards for products and services, delivering better performance for public authorities and ultimately citizens.
- New products and services which have been developed to meet the requirements of GPP may also become popular with private consumers, improving overall standards.



GPP saves money and resources when life-cycle costs are considered

- GPP often leads to savings over the whole life-cycle of a purchase- both for public authorities and for society in general.
- For example, a more energy and water-efficient building may cost more up-front, but will save money in the long run.

GPP provides incentives to industry to innovate

- Promoting green procurement gives important incentives for industry to develop 'green' technologies and products and promote them in the market place.
- In particular, small- and medium-sized companies may profit from environmental procurement, as it offers an opportunity to find markets for their innovative solutions and products.



GPP can reduce prices for environmental technologies

- Introducing 'green' tendering criteria can influence the marketplace and result in new entrants in the field of environmental technologies and products - potentially resulting in increased competition and reduced prices.



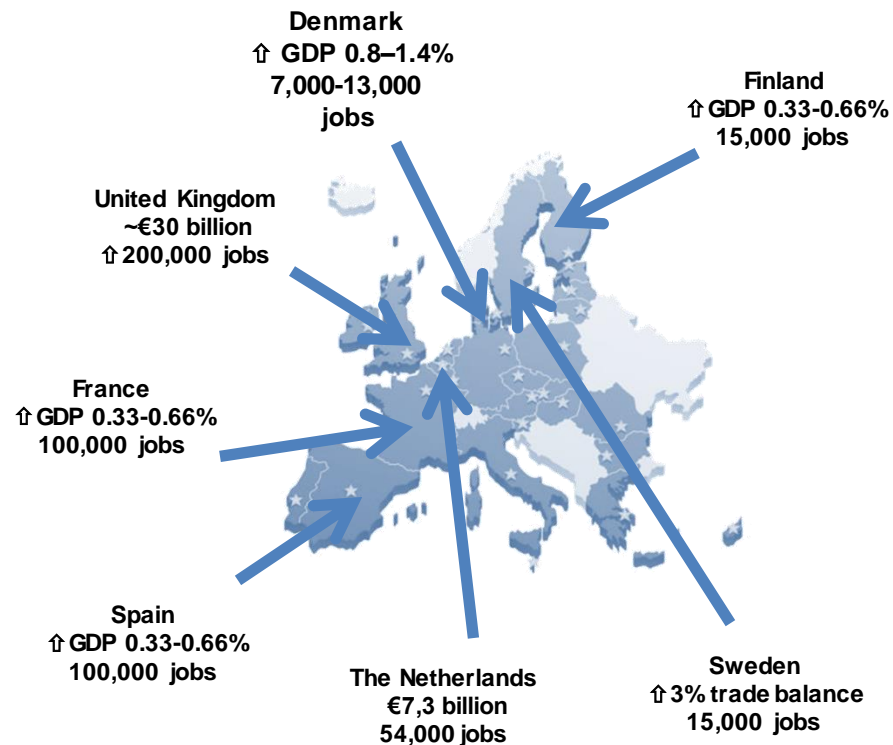


2. Tendering and circular procurement



Benefits of circular procurement

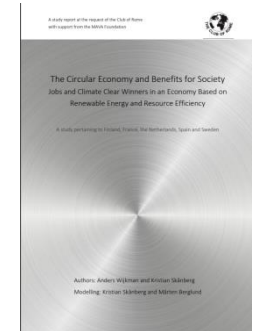
Studies show the Circular Economy pays:



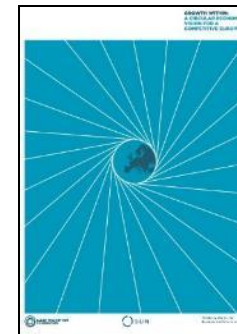
\$630 BILLION (EU)
THROUGH MATERIAL SAVINGS
(ELLEN MCARTHUR FOUNDATION, 2013)



€7.3 BILLION (NED)
BY 54.000 NEW JOBS
(TNO, 2013)



AVAILABLE IN ENGLISH,
FRENCH, UKRAINIAN AND
POLISH
(CLUB OF ROME, 2015)



+\$1200 BILLION (EU)
THROUGH ADDITIONAL
BENEFITS
(ELLEN MACARTHUR
FOUNDATION, 2016)



Energy Efficiency for Construction:
Green Procurement *Source: EU GPP training toolkit*

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What is Circular Procurement?

Circular procurement definition:

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.

Public procurement
for a circular economy.
European Commission,
2017 (p.5)



Construction



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Opportunities:

- Design for deconstruction
- Recycled content
- Multiple REBMs
- CO₂ reduction
- End of Life - closing material loops
- Refurb & maintenance
- Cost savings



- Brummen, Netherlands - circular Town Hall
- Netherlands – DBFM, Rapid circular contracting
- BAR HQ, Portsmouth, UK – Whole Life Costing & BIM
- Viaduc de Millau, France- build, fund & operate (BFOT)



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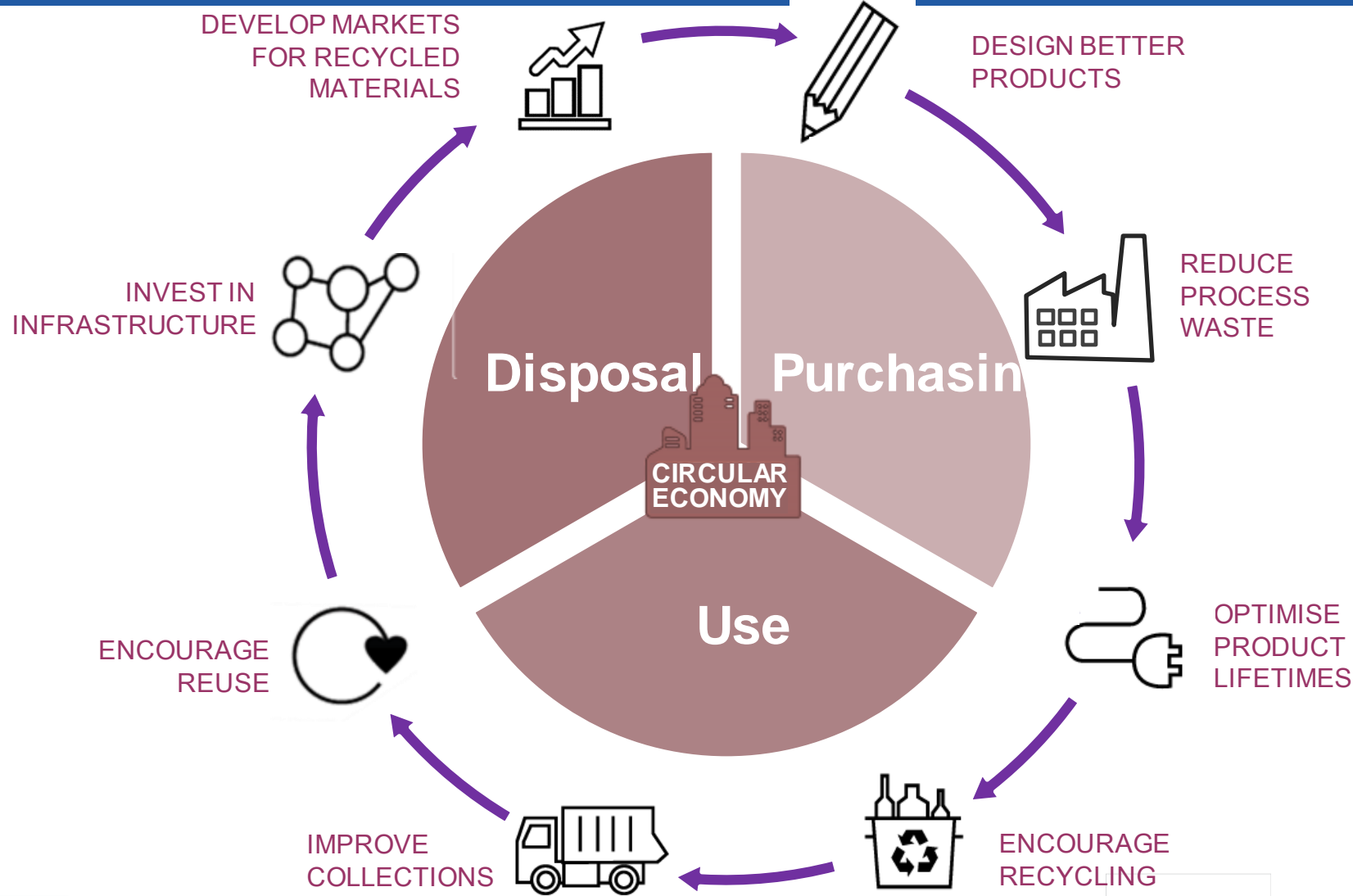
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Procurement Cycle



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Circular
procurement
opportunities



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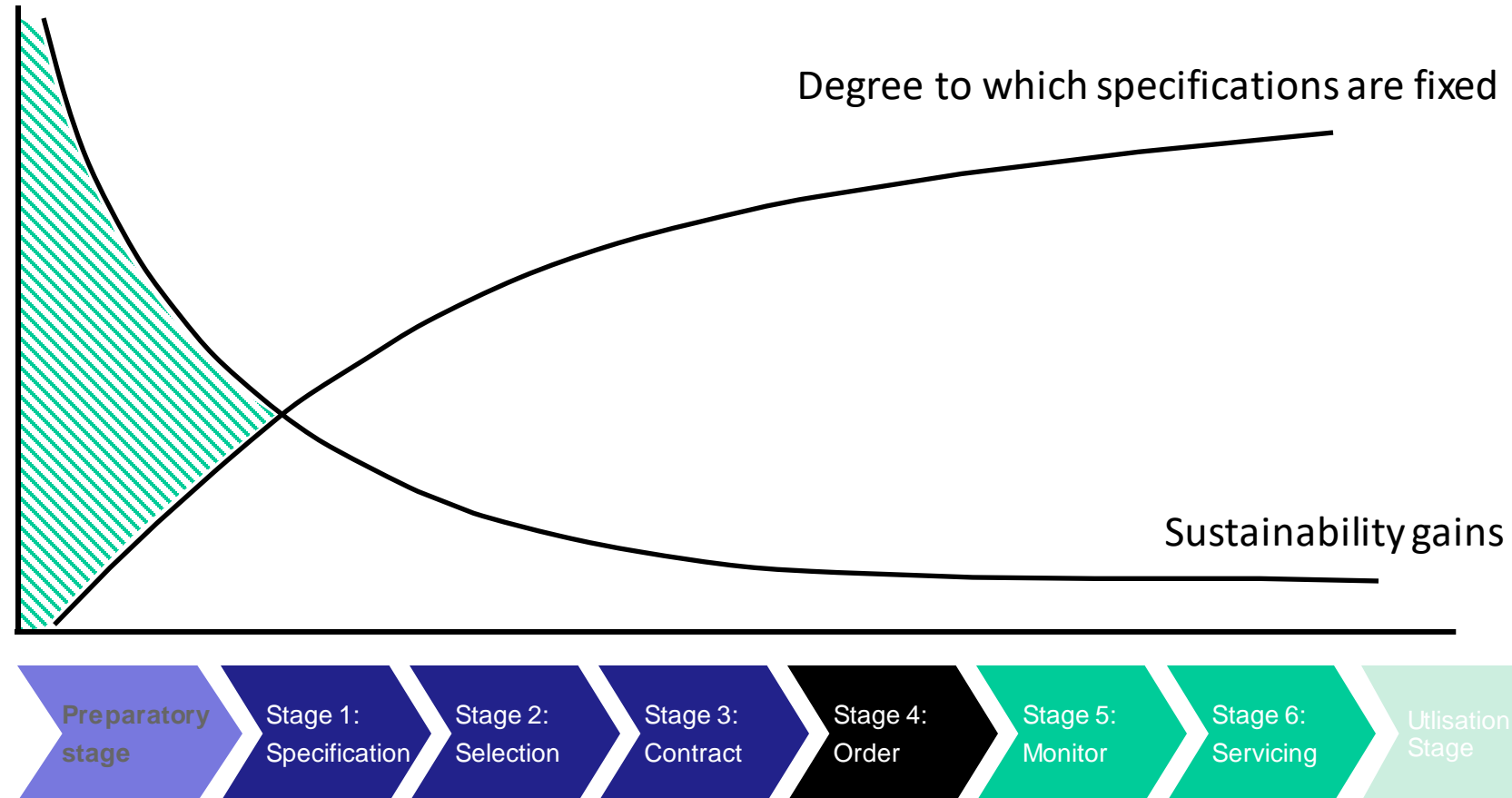


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Procurement Cycle Impact

How CP delivers circular benefits

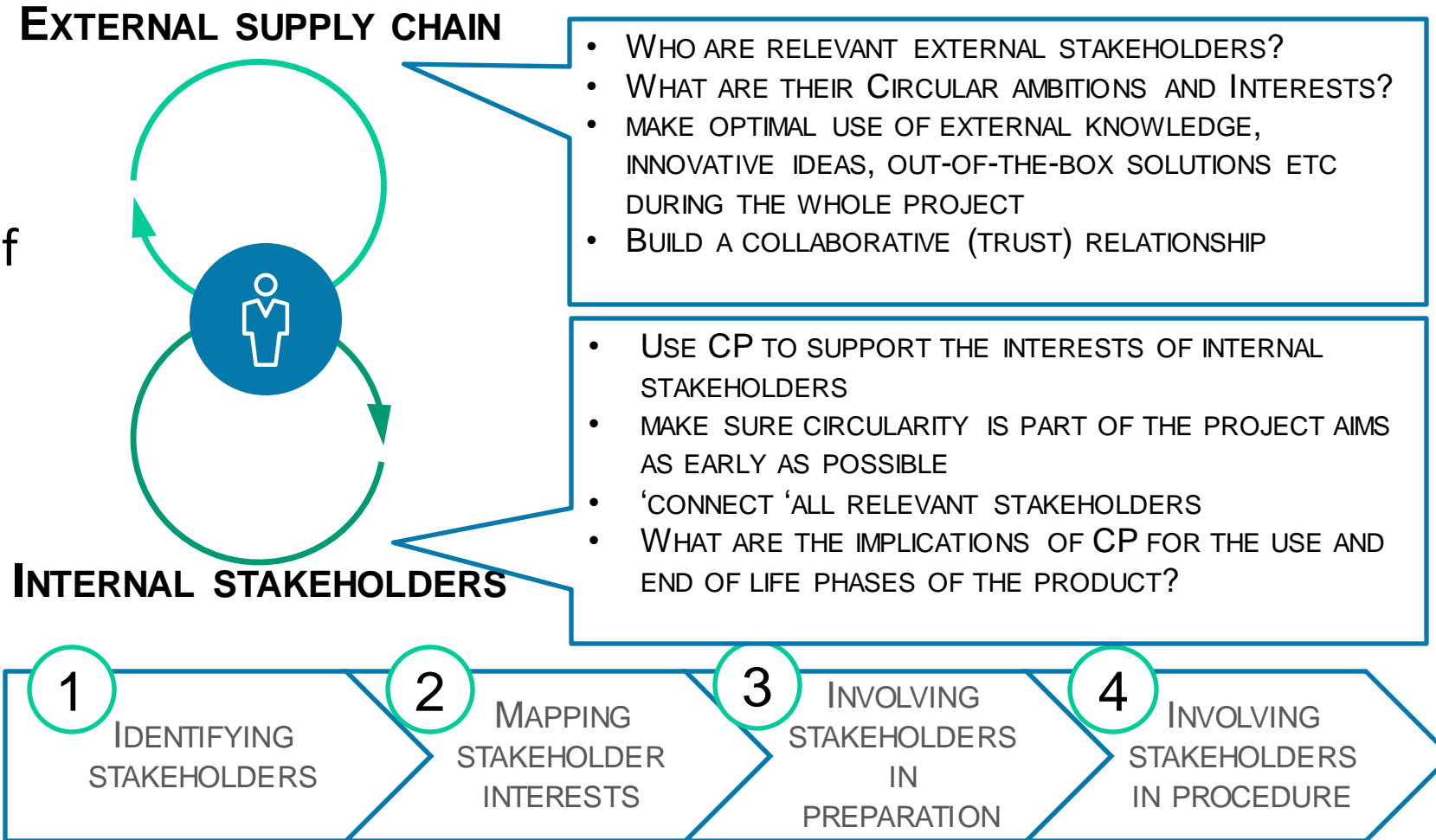


Stakeholder Engagement



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The
importance of
collaboration



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Product Categories



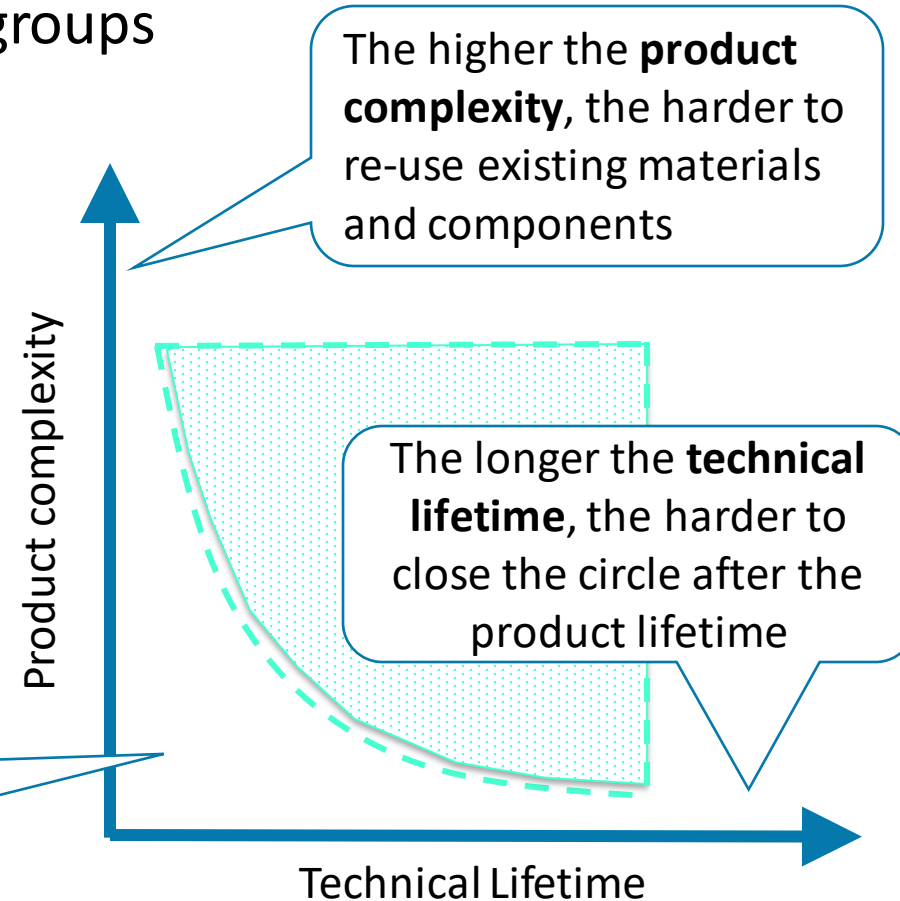
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Selecting initial high potential product groups

Circular procurement Quick
Wins are typically:

- average product complexity
- average technical lifetime

Low complexity and low
technical lifetimes favour
closing **material loops**



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Source: EU GPP training toolkit

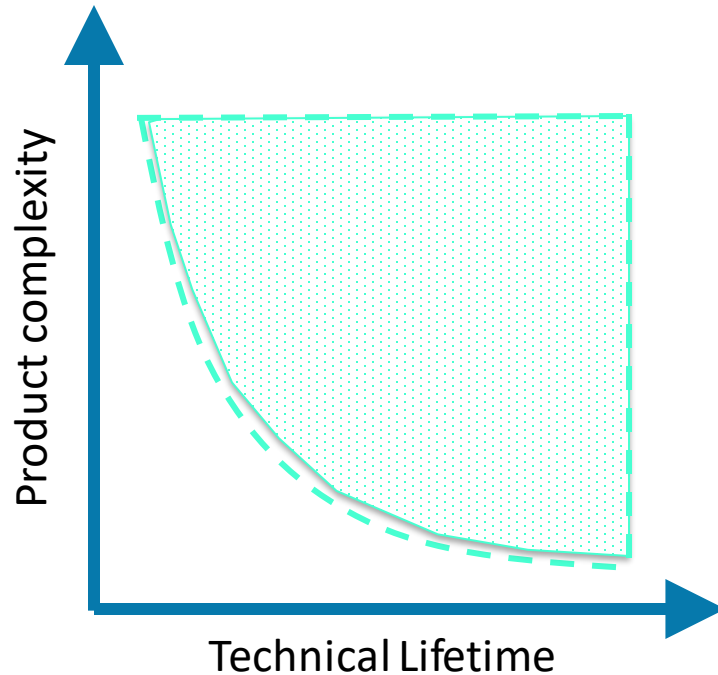
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What are your organisations high-potential product groups?



Spend

- How big is the category spend?

Risk

- What level of risk does this category pose?

Scope

- What scope have you to improve sustainability?

Influence

- What influence have over this market and supply chain?

Use the knowledge you have to assess your own high potential product groups on the chart above



Product complexity vs technical lifetime

Construction projects (infrastructure and buildings) are highly complex with multiple products but also create the opportunities for large scale impact through circular procurement.

Construction procurement can also help create markets for recycled materials by specifying requirements for recycled content.



Three key points:

1. **Process** – challenge the need, consider circularity early and collaborate
2. **Technical** – market engagement to understand what is possible as well as what is available
3. **Finance** – circular business models help facilitate circular procurement

GPP Helpdesk

For further
support on GPP,
contact the EU's
free

[Helpdesk](#)



PRE-PROCUREMENT

1. Needs Assessment

A 'needs assessment' helps prevent waste. It is carried out to:

1. Avoid unnecessary purchases
2. Ensuring what is purchased meets requirements
3. Design procurement and contracts to allow flexibility over time

2. Market Consultation

The market is engaged to:

- **Identify** potential bidders and/or solutions
- **Build capacity** in the market to meet the requirement(s)
- **Inform** the design of the procurement and contract
- **Help suppliers** to submit strong bids



PROCUREMENT

3. Design of tender

- Most appropriate procedure is chosen (who can bid and how)
- Choose most appropriate specifications, selection and award criteria are chosen
- Publish notice and tender document

4. Selection of bidders

- GPP exclusion grounds are applied
- GPP selection criteria are applied based on technical and professional ability
- further evidence of compliance can be asked for if needed



5. Bids are evaluated

- Compliance with green specifications is evaluated
- Green award criteria are evaluated
- bidder claims relating to GPP are evaluated
- Life-cycle costing is applied if included in tender

6. Contract is completed

- Bidders are notified of outcome of evaluation
- Standstill period is applied if applicable
- Contract terms are finalised with successful bidder
- Debriefing on GPP aspects of tender is offered



POST-PROCUREMENT

Monitoring, Reporting And Measuring Impact

- Set up internal procedures to monitor GPP
- Hold regular contract review meetings
- Identify and escalate any compliance issues
- Agree continuous improvement measures





3. Certification and Eco labels



- It is at the tender evaluation stage that GPP criteria are put to the test. An increasing number of companies make environmental claims about their products and services, and there is **a growing list of standards, certification schemes and labels which aim to give credibility to such claims.**
- Procurers are often called upon to **distinguish promotional or unfounded claims from genuine evidence.** GPP requires the application of these skills in order to avoid 'greenwash' and identify those products and services which genuinely meet criteria targeting environmental characteristics



Forms of verification and evidence for GPP.

PROCUREMENT STAGE	TYPE OF GPP CRITERIA	WHAT EVIDENCE CAN BE REQUESTED?
EXCLUSION	Exclusion for non-compliance with environmental law, grave professional misconduct, or significant/ persistent defects in prior contracts.	A self-declaration should be accepted in the first instance (this may include the European Single Procurement Document), however further evidence may be required at any time to ensure the proper conduct of the procedure.
SELECTION	Ability to apply environmental management measures.	EMAS, ISO 14 001 or other independent third-party schemes. In-house environmental management systems may also be accepted if they include the specific measures required for the contract.
	Technical and human capacity.	Supply chain management and tracking systems; measures for quality control; experience and qualifications of staff; tools, plant and equipment.
	Previous experience related to GPP.	A list of previous similar contracts carried out over the past three years (for supply/service contracts) or the past five years (for works contracts).



Forms of verification and evidence for GPP.



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PROCUREMENT STAGE	TYPE OF GPP CRITERIA	WHAT EVIDENCE CAN BE REQUESTED?
TECHNICAL SPECIFICATIONS	Environmental standards, production processes, minimum performance requirements (e.g. energy efficiency levels).	Ecolabels, certificates, test reports or technical documentation. Equivalent evidence must be accepted if it establishes compliance or performance under the specific criteria. If a bidder does not have a third-party label or certificate, they must prove that this is for reasons not attributable to them.
AWARD CRITERIA	Performance above minimum specified levels, life-cycle costs, added value.	As above. Method statements/descriptions may also be relevant for certain criteria. For life-cycle costing, bidders should complete a spreadsheet and may also be required to provide test reports, certificates etc.
CONTRACT PERFORMANCE CLAUSES	Key performance indicators, incentives, penalties or remedies linked to GPP.	Ecolabels, certificates etc may be required under the same conditions as above. On-site inspections, tests, or audits may be carried out and the contractor may be required to report on environmental performance.



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Source: EPA GPP Guidance for the public sector

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Why we need to verify in GPP

- GPP criteria require/reward measures that deliver real improvements in emissions and resource use –not green wash
- Complexity of some environmental topics means that additional effort may be needed to confirm compliance or performance levels
- Failure to verify environmental criteria can discriminate unfairly against those bidders who have invested in real improvements
- Failure to verify can also undermine internal/ public confidence in green products or services



Types of greenwash



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Exaggeration—where a bidder or contractor suggests the environmental benefits of its actions are greater than they are.

Substitution/Distraction —where a bidder or contractor uses one purported environmental benefit to distract from a bigger environmental detriment.

False claims —where a bidder or contractor makes a false statement about their environmental impact (knowingly or unknowingly)



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Source: Greenville Academy

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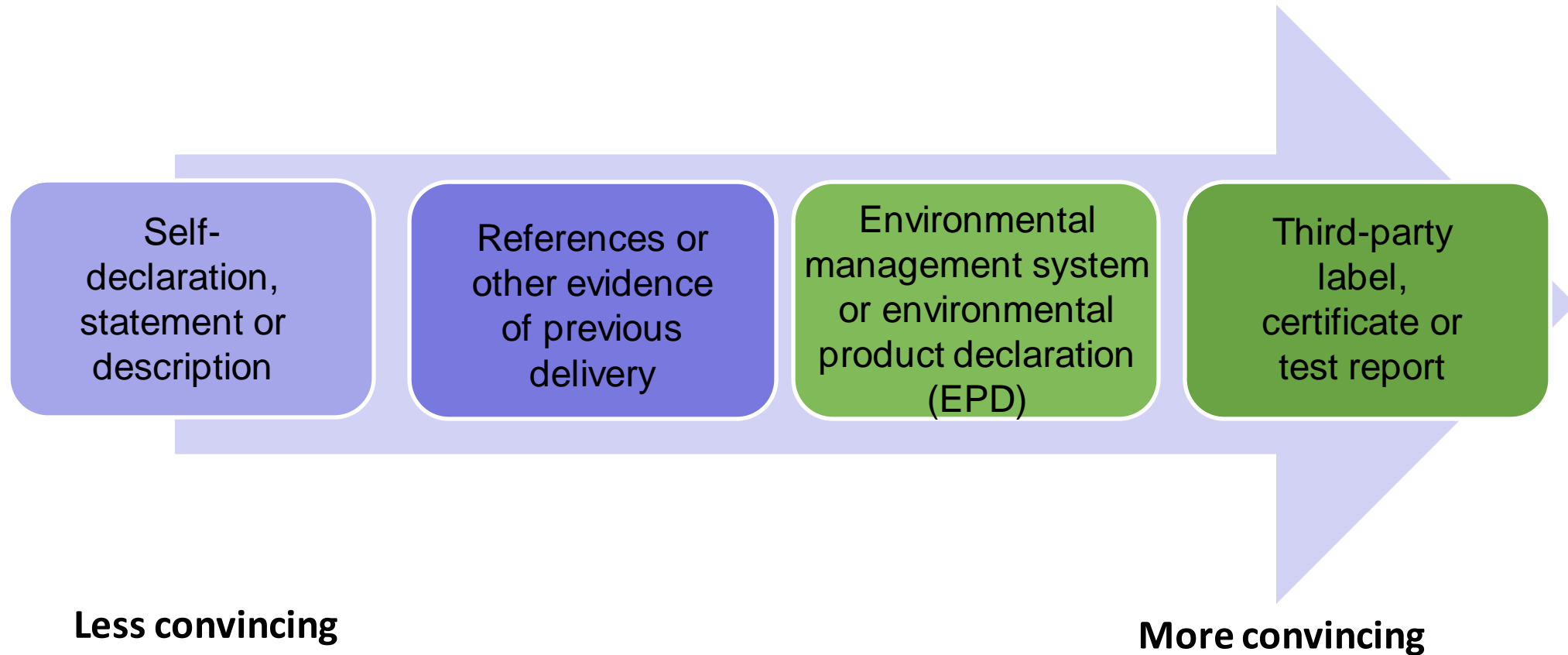
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Different types of verification



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CERTIFICATES – certificates may be granted by a public or independent regulatory authority, or by a private industry body. Companies operating an environmental management system, for example, will receive a certificate (e.g. ISO 14001, EMAS). It is important to always check the source, scope and date of any certificate presented.

ENVIRONMENTAL PRODUCT DECLARATIONS (EPDs) –are based on life-cycle analysis and include information about a range of environmental impacts in addition to carbon footprint. In Europe, EPDs must conform to the standard EN 15804. Product Category Rules (PCRs) determine the information to be included and methodology, so that EPDs enable comparison between products fulfilling the same function. EcoPlatform is a machine readable digitised database of EPDs from across Europe.



SELF-DECLARATION – in some cases, objectively verified third-party evidence may not be considered essential or may not be available. In these cases, a signed self-declaration, for example regarding compliance with environmental regulations, may be relied upon.

TEST REPORTS – test reports may provide evidence regarding the performance of a product or a specific aspect of its production. For example, when purchasing vehicles test reports may be requested both in relation to the declared emission levels of the vehicle and the durability of individual components.

TYPE I ECOLABEL – Ecolabels can be extremely useful tools for GPP, as they demonstrate compliance with defined environmental criteria while minimising the effort involved for buyers and suppliers in individual tender procedures.



- A wide range of ecolabels exist, however the ones which are of greatest use for procurement, and which are referred to in the GPP criteria, are 'Type I' or ISO 14024.
- Type I ecolabels have underlying criteria set by an independent body, are based on life-cycle analysis and are monitored by a certification and auditing process. As such they are a highly transparent and reliable source of information about the environmental characteristics of a product or service. Ecolabels may be used in two different ways as part of procurement:
 - i. to define technical specifications, award criteria or contract performance clauses; and
 - ii. to verify compliance with technical specifications, award criteria and contract clauses.



- In the Irish GPP criteria, each criterion is accompanied by a verification provision which must be included in your tender documents

Example from Irish GPP criteria

Energy-using products: TS2 End-of-life service

Verification: The tenderer must provide details of the arrangements for collection, preparation for re-use, and recycling/disposal.

This must include valid proof of compliance for the WEEE handling facilities to be used.



- All GPP commitments should form part of the contract, with responsibility for monitoring and reporting clearly assigned
- Consequences for non-compliance should be proportionate: need to balance penalties/incentives with ensuring honest reporting
- Use of third-party inspections/audits may be required where environmental aspects are highly technical or extend along the supply chain (e.g. production processes in other countries)
- Cost of verification may be split between the parties or borne by the supplier or contracting authority alone
- Escalation procedures and remedies including liquidated damages, contract termination or shortening duration



- Time is always a factor in procurement, but evidence suggests that targeting good contract management can have positive impacts such as the **creation of shared cost savings and the embedding of sustainability along supply chains**. It also ensures that **environmental standards in contracts can be progressively improved** based on the initial results achieved.
- It is vital to have a system in place to record compliance/ performance with GPP and to **ensure lessons are learned for future tenders**. Ultimately, GPP is a tool to support progress towards broader environmental and sustainability commitments. This means you will need to find ways to measure the impact of GPP, so that its contribution to these bigger targets can be calculated.







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