
WELCOME
CIRCULAR SHIFT
December 1, 2025


Beautiful Mechelen


Beautiful Mechelen

Interreg
North-West Europe

Co-funded by the European Union

CIRCULAR SHIFT

WELCOME

Anne Rademaker

+10 yrs Circular Economy implementation

Rebecca Scholten

Sustainability Transitions Researcher & Advisor

You!

Please share your:

- Name
- Function
- Motivation for shifting to a circular economy

Phoebus Cartel

Procurement teams didn’t ask to become climate heroes — but they’re now on the front line

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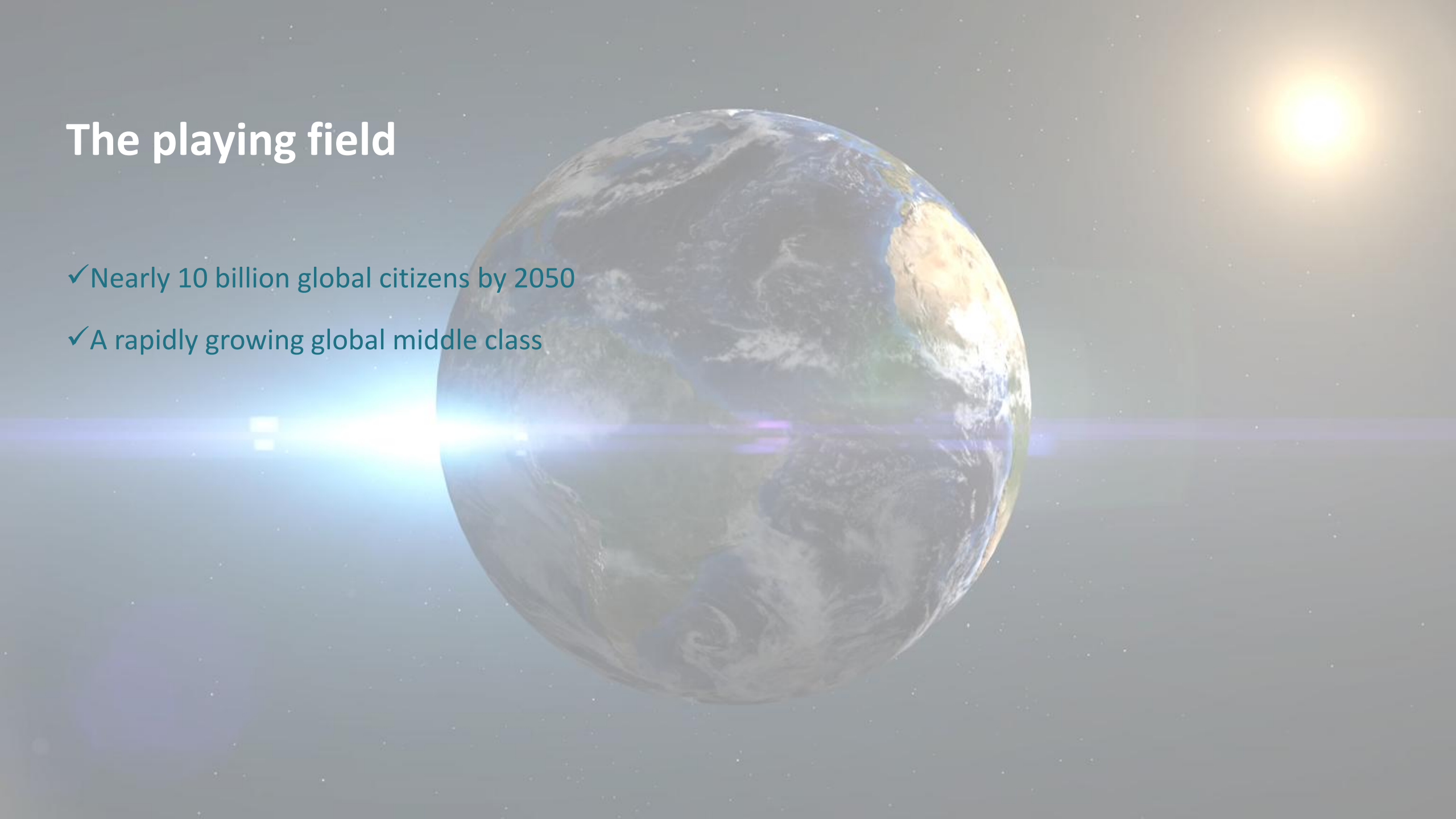
Agenda

From data to decisions: Impact monitoring for Circular Procurement.

The playing field



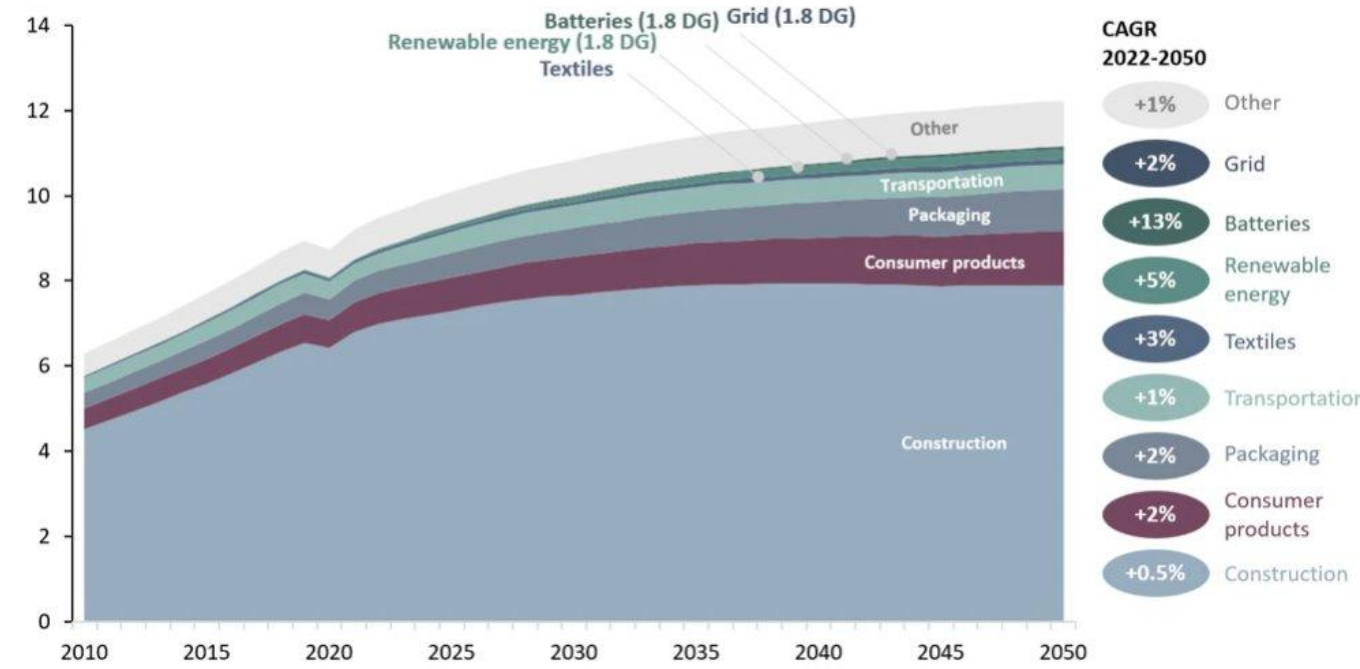
- ✓Nearly 10 billion global citizens by 2050
- ✓A rapidly growing global middle class

The playing field

- ✓Nearly 10 billion global citizens by 2050
- ✓A rapidly growing global middle class
- ✓A doubling of global resource demand

Figure 1: Expected material demand by sector*, 2010-2050

Billion tonnes per year

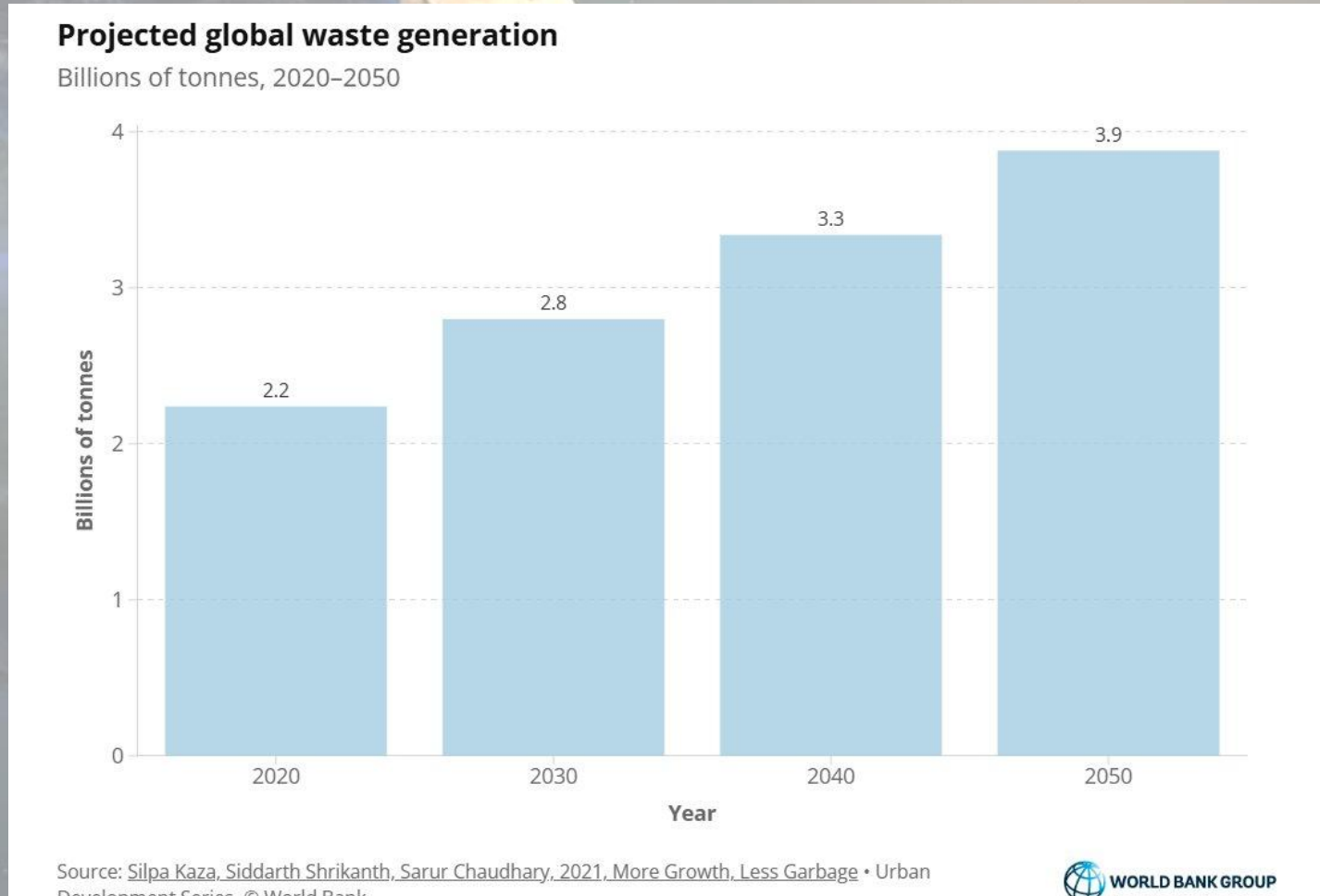


*In a 1.8-degree temperature increase scenario

Source: Rystad Energy research and analysis

The playing field

- ✓Nearly 10 billion global citizens by 2050
- ✓A rapidly growing global middle class
- ✓A doubling of global resource demand
- ✓Uncontrollable waste streams



The playing field

- ✓Nearly 10 billion global citizens by 2050
- ✓A rapidly growing global middle class
- ✓A doubling of global resource demand
- ✓Uncontrollable waste streams
- ✓Rising raw material prices and supply risks
- ✓Increasing interdependence between countries
- ✓A regulatory landscape in motion

An official website of the European Union How do you know?

European Commission

EN

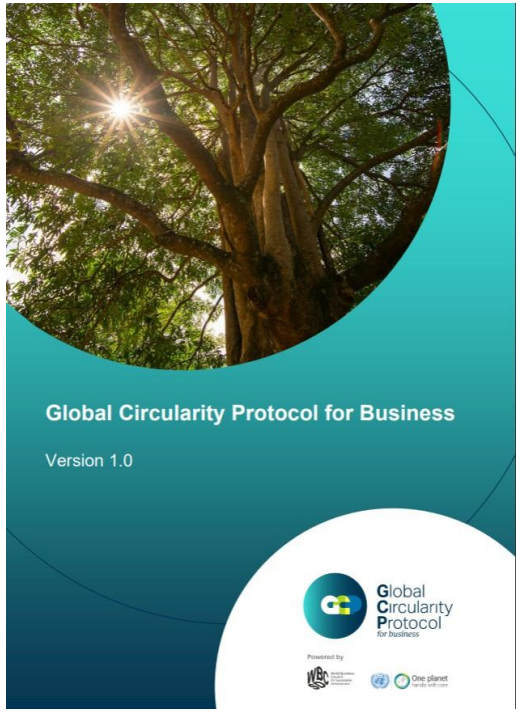
Energy, Climate change, Environment

Green Forum

Home Green Business Nature and biodiversity News Events

Environment > Green Forum > Green Business > Green Public Procurement > GPP Criteria and Requirements

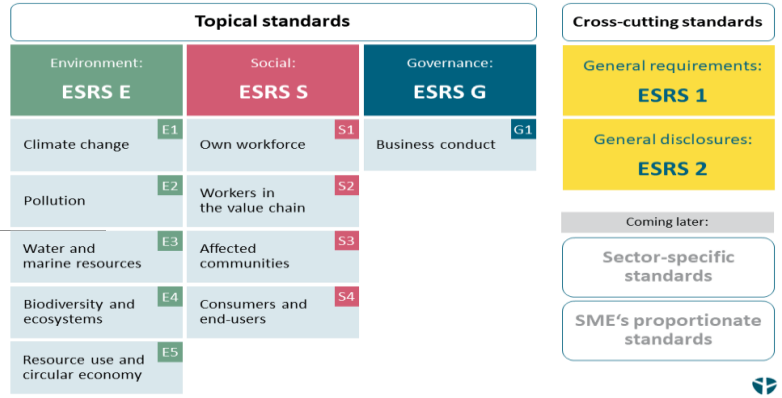
Green Public Procurement Criteria and Requirements



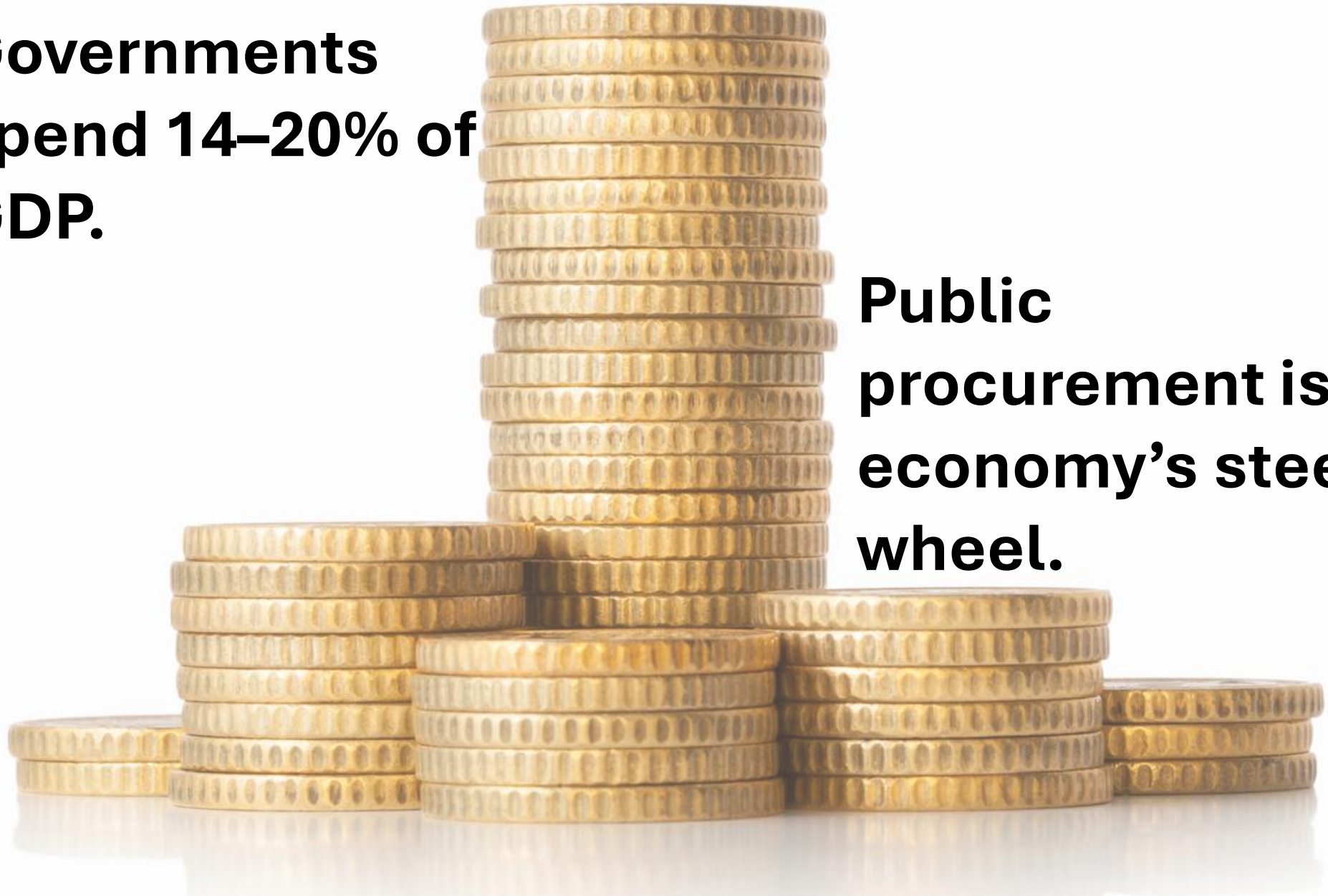
Home > Energy, Climate change, Environment > Standards, tools and labels > Products - labelling rules and requirements > Ecodesign for Sustainable Products Regulation

Ecodesign for Sustainable Products Regulation

Making sustainable products the norm in the EU



Governments spend 14–20% of GDP.



Public procurement is the economy’s steering wheel.

The shift is already happening because of YOU!


gov.ie

Nuacht Ranna Seirbhísí Cuardaigh

Preasráitis

Government approve new Circular regarding Green Public Procurement obligations

Ó:
An Roinn Caiteachais Phoiblí, Bonneagair, Athchóiriúcháin Seirbhíse Poiblí agus Digitiúcháin
Foilsithe:
An t-eolas is déanaí: 21 Iúil 2025

This week, Government has approved a new Circular aimed at increasing the implementation of Green Public Procurement (GPP) across the public sector. The Circular has been welcomed by Minister of State for Public Procurement, Digitalisation and eGovernment, Emer Higgins, and by Minister of State at the Department of Climate, Energy and the Environment with special responsibility for Circular Economy, Alan Dillon.


Nationaal Programma Circulaire Economie 2025


Umwelt Bundesamt

German Environment Agency

10. June 2024

Green Public Procurement

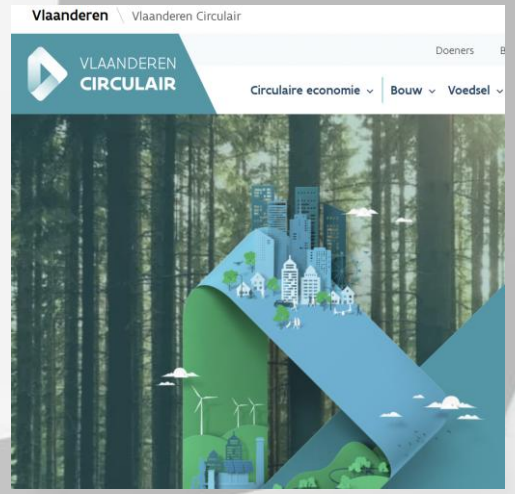
Eco-friendly and cost-saving

50 Jahre Umweltbundesamt 1974–2024

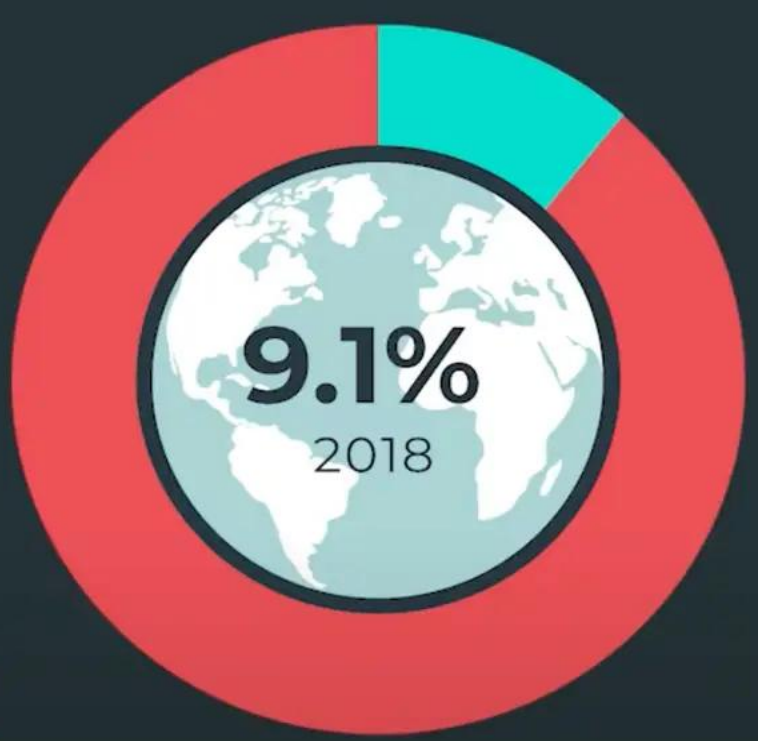
What does green public procurement mean?

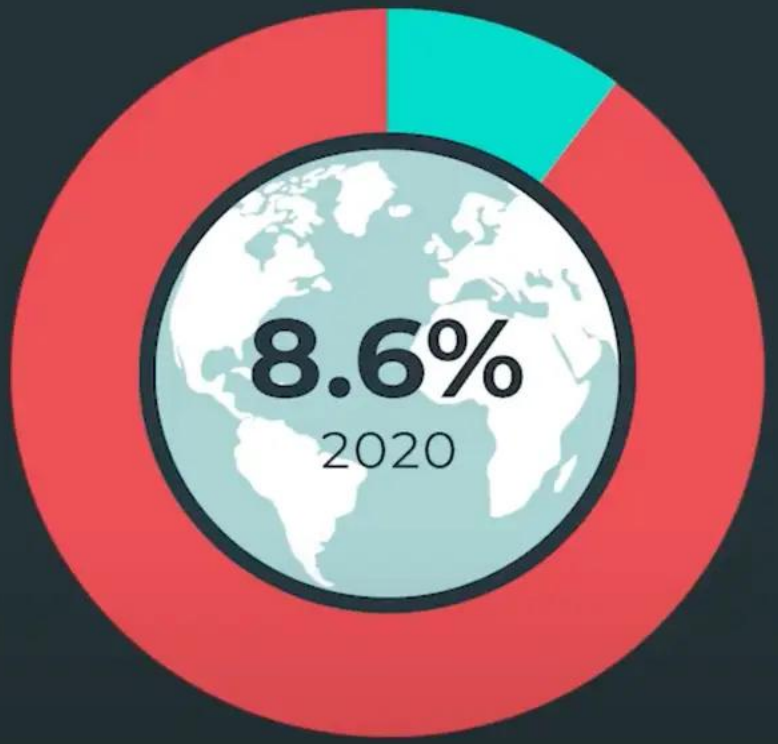
Each year, German contracting authorities purchase around € 300 billion worth of products ranging from pencils to city buses. This purchasing power can potentially be used to reduce environmental pollution, improve the range of environmental products and services, and promote more targeted market launches of innovative eco-friendly products. When it comes to public procurement, it's often a relatively simple matter to make a conscious decision to procure more eco-friendly products.

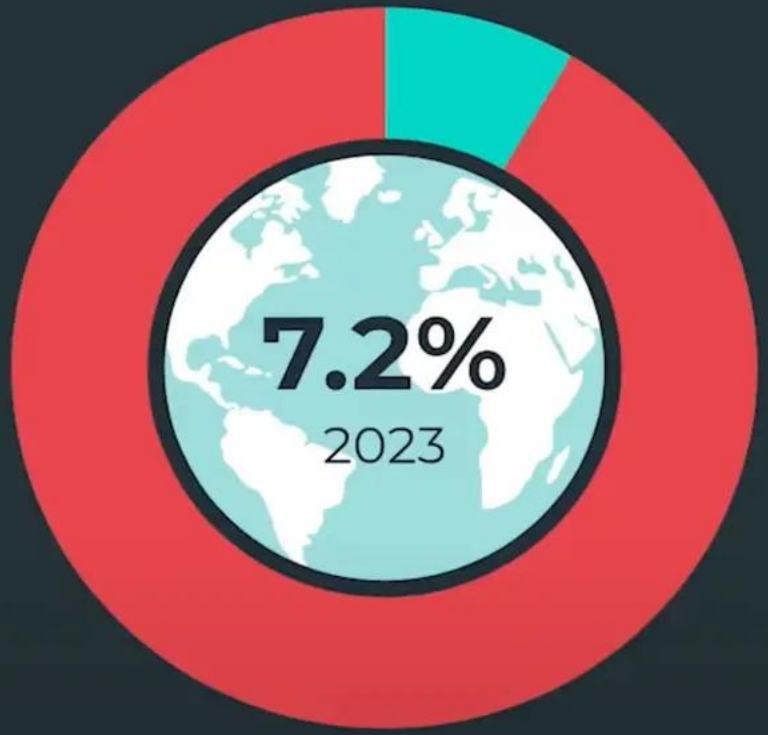
The aim of this fact sheet is to explain how this can be done.



How are we doing in accelerating Circular Economy globally?

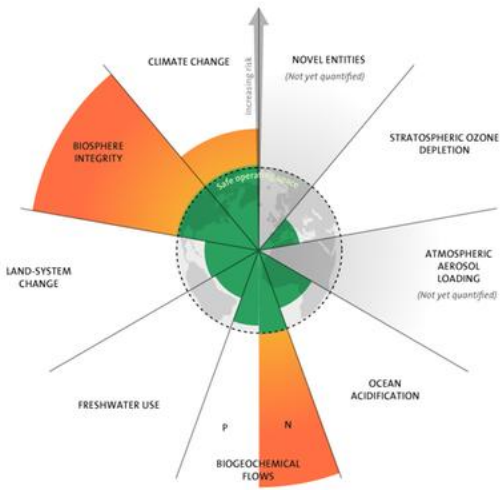

9.1%
2018


8.6%
2020


7.2%
2023

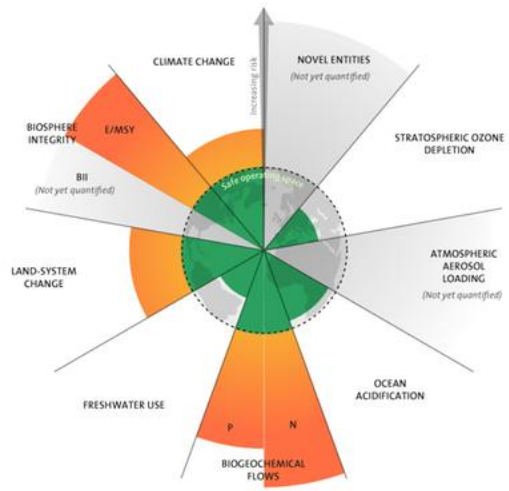

The Circularity Gap Report 2025
CGR
2025
A circular economy to live within the safe limits of the planet
CIRCLE ECONOMY

2009



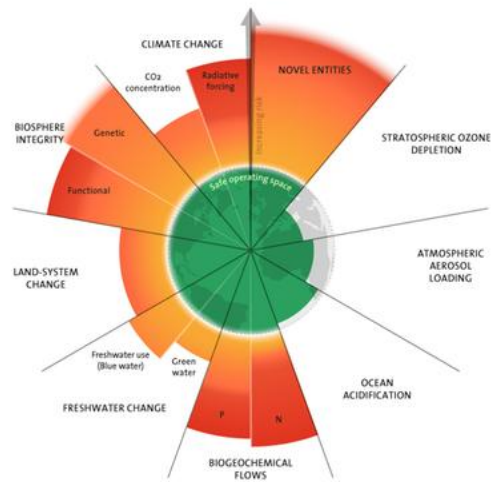
7 boundaries assessed,
3 crossed

2015



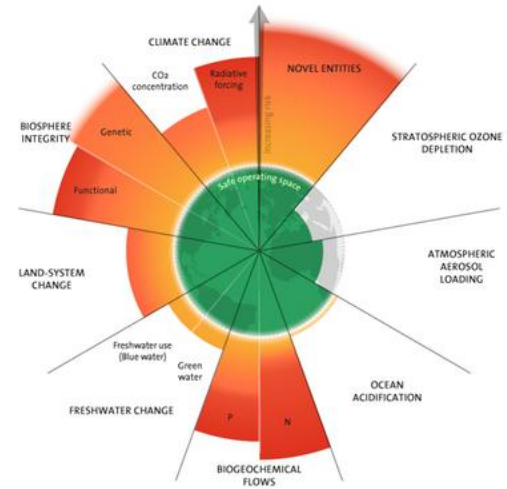
7 boundaries assessed,
4 crossed

2023



9 boundaries assessed,
6 crossed

2025

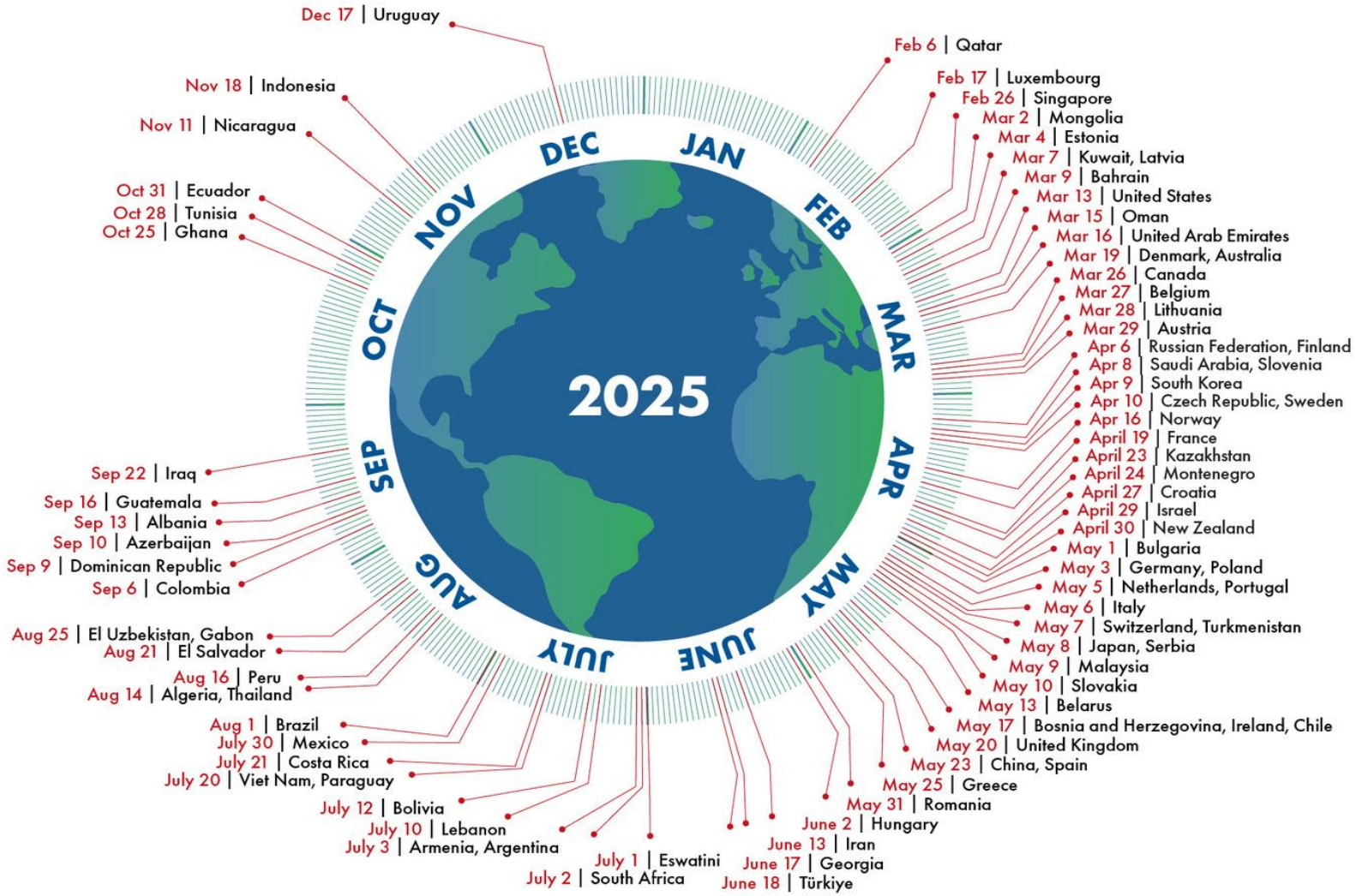


9 boundaries assessed,
7 crossed

Stockholm Resilience Centre | Stockholm University

Country Overshoot Days 2025

When Earth Overshoot Day would land if all the people around the world lived like...



For more information, visit:
https://overshootday.org/newsroom/country-overshoot-days/

Source: National Footprint and Biocapacity Accounts, preliminary 2025 Edition
York University, FoDaFo, Global Footprint Network, data.footprintnetwork.org

EARTH OVERSHOOT DAY

Global Footprint Network
Advancing the Science of Sustainability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JIM PUCKETT
WASTE INVESTIGATOR

The essence of impact monitoring and forecasting

Resources, Conservation & Recycling 194 (2023) 107001

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journal homepage: www.elsevier.com/locate/resconrec

Review

Conceptualizing the Circular Economy (Revisited): An Analysis of 221 Definitions

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[b] Innovation Studies Group, Copernicus Institute of Sustainable Development, Utrecht University, The Netherlands
[c] Cambridge Center for Environment, Energy and Natural Resource Governance, University of Cambridge, United Kingdom
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4R Framework
Sustainable development
Definitions
Content analysis
Systematic review

ABSTRACT

In the past decade, use of the circular economy (CE) concept by scholars and practitioners has grown steadily. In a 2017 article, Kirchherr et al. found that the CE concept is interpreted and implemented in a variety of ways. While multiple interpretations of CE can enrich scholarly perspectives, differentiation and fragmentation can also impede consolidation of the concept. Some scholarship has discussed these trends in context-specific cases, but no large-scale, systematic study has analysed whether such consolidation has taken place across the field. This article fills this gap by analysing 221 recent CE definitions, making several notable findings. First, the concept has seen both consolidation and differentiation in the past five years. Second, definitional trends are emerging that potentially have more meaning for scholarship than for practice. Third, scholars increasingly recommend a fundamental systemic shift to enable CE, particularly within supply chains. Fourth, sustainable development is frequently considered the principal aim of CE, but questions linger about whether CE can mutually support environmental sustainability and economic development. Finally, recent studies argue that CE transition relies on a broad alliance of stakeholders, including producers, consumers, policymakers, and scholars. This study contributes an updated systematic analysis of CE definitions and conceptualizations that serves as an empirical snapshot of current scholarly thinking. It thereby provides a basis for further research on whether conceptual consolidation is needed and how it can be facilitated for practical purposes.

1. Introduction

The circular economy (CE) concept continues to interest both scholars and practitioners (Kirchherr, 2021; Köhler et al., 2019; Vecchio et al., 2022). A Scopus query in late 2021 returned more than 13,000 documents containing the term 'circular economy' – 7800 (ca. 60 percent) appeared in 2020 or 2021. Meanwhile, numerous large-scale CE policy efforts have been launched (e.g., in the European Union (EU) and China; Hartley et al., 2020; Milios, 2021), and the private sector – from large corporations to start-ups – are experimenting with the concept (Aminoff & Pihlajamaa, 2020; Brown et al., 2021; Henry et al., 2020). A broad alliance of stakeholders seems committed to fostering CE transition, even as the challenge of this transition remains formidable (the most recent *Circularity Gap Report* finds that the world is currently only 8.6 percent circular (Circle Economy, 2021)).

As CE grows in popularity, its interpretation and implementation by numerous actors can obscure and fragment its conceptualization. Indeed, a systematic analysis by Kirchherr et al. (2017) found 95 different CE definitions. Numerous scholarly efforts have investigated the prospects of a consensus conceptualization of CE (Merli et al., 2018; Nobre & Tavares, 2021; Prieto-Sandoval et al., 2018). However, no study since Kirchherr et al. (2017) was published has systemically analysed whether such a consensus has been forged. This is the gap that the new study seeks to fill. According to Kirchherr et al. (2017, p. 228), "knowledge accumulation regarding the CE is difficult if scholar A conceptualizes the 'how-to' of CE as recycling, while scholar B considers

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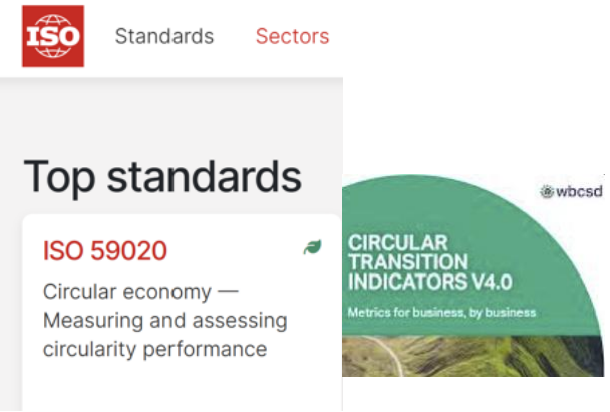
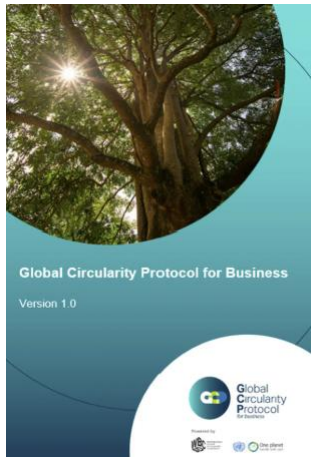
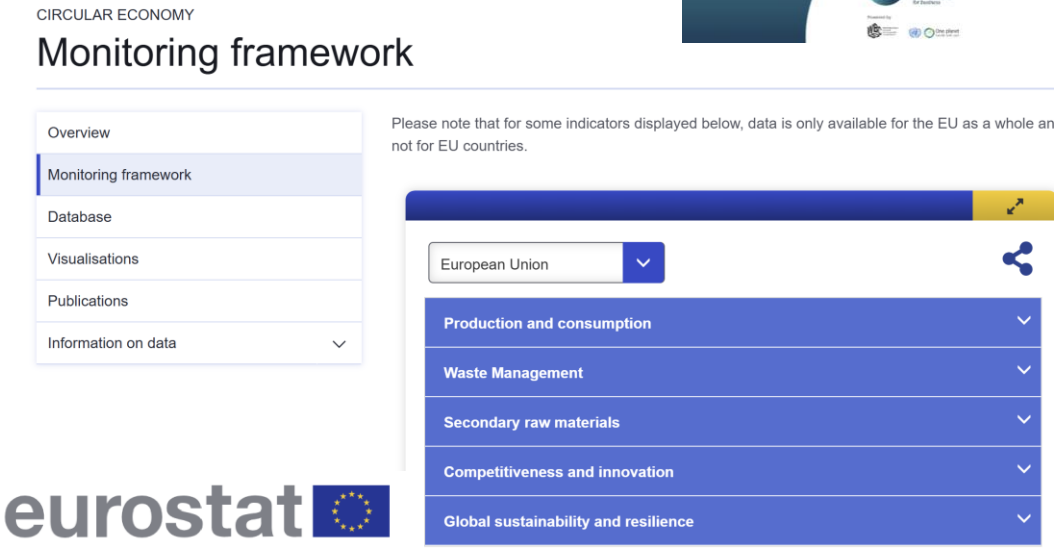
E-mail address: juliank@ruc.dk (J. Kirchherr).

How to decide what is considered circular during procurement?

With no unified definition of CE







From: **The Circular Decision-Making Tree: an Operational Framework**

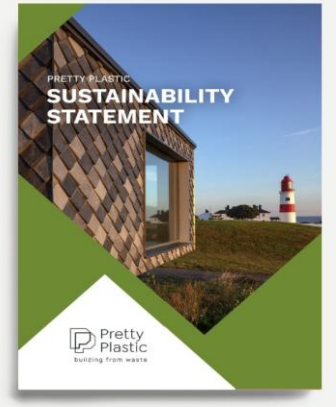
The Circular Decision-Making Tree: an Operational Framework
Original Paper | Open access | Published: 21 September 2022
Volume 3, pages 693–718, (2023) | Cite this article

Tool/approach	Primary added value	Limitations
Waste hierarchy	• Widely supported guide for waste management that [24] • Prioritizes waste treatment options to reduce environmental impacts in preferential order [25]	• Offers limited specification, implementation of prevention, and guidance for choosing among the levels of the hierarchy [23] • May result in stimulating optimization of the reigning linear economy (vs. fundamental change necessary for a new circular paradigm)
R-imperatives	• Illustrate hierarchies of CE value retention [4] • Frequently referenced as the "how-to" of CE (ibid) • Highlight the idea of value preservation or resource value retention options [26]	• Numbers, sequence, and terminology of these R-imperatives are inconsistent across frameworks, countries, and supranational organizations like the EU, the UN, and the OECD [4] • Contradictory syntheses of the R-imperatives built into complex political decision-making processes [25, 26]
Life cycle assessment (LCA)	• Analytical tool that captures the overall environmental impacts of all the life cycle stages associated [27] • Highlights potential environmental tradeoffs from one phase of the life cycle to another, from one region to another, or from one environmental problem to another [28]	• Compares "either-or" decisions; generally not designed to help select from a larger pool of innovation possibilities [29] • Does not give guidance through various steps of decisions [30] • User must already understand the environmental translation of the output value impacts, as well as when and why it would be appropriate to apply this tool [28]
Multi-criteria decision analysis (MCDA)	• Tool to discover and measure decision-maker considerations about various (mostly) non-monetary factors to compare alternative courses of action [31]	• Aims to model and predict the behavior of decision-makers, but lacks the capacity to help stakeholder navigate decision-making processes in real time [32, 33]

How to decide what is considered circular during procurement?

With no unified framework to measure it

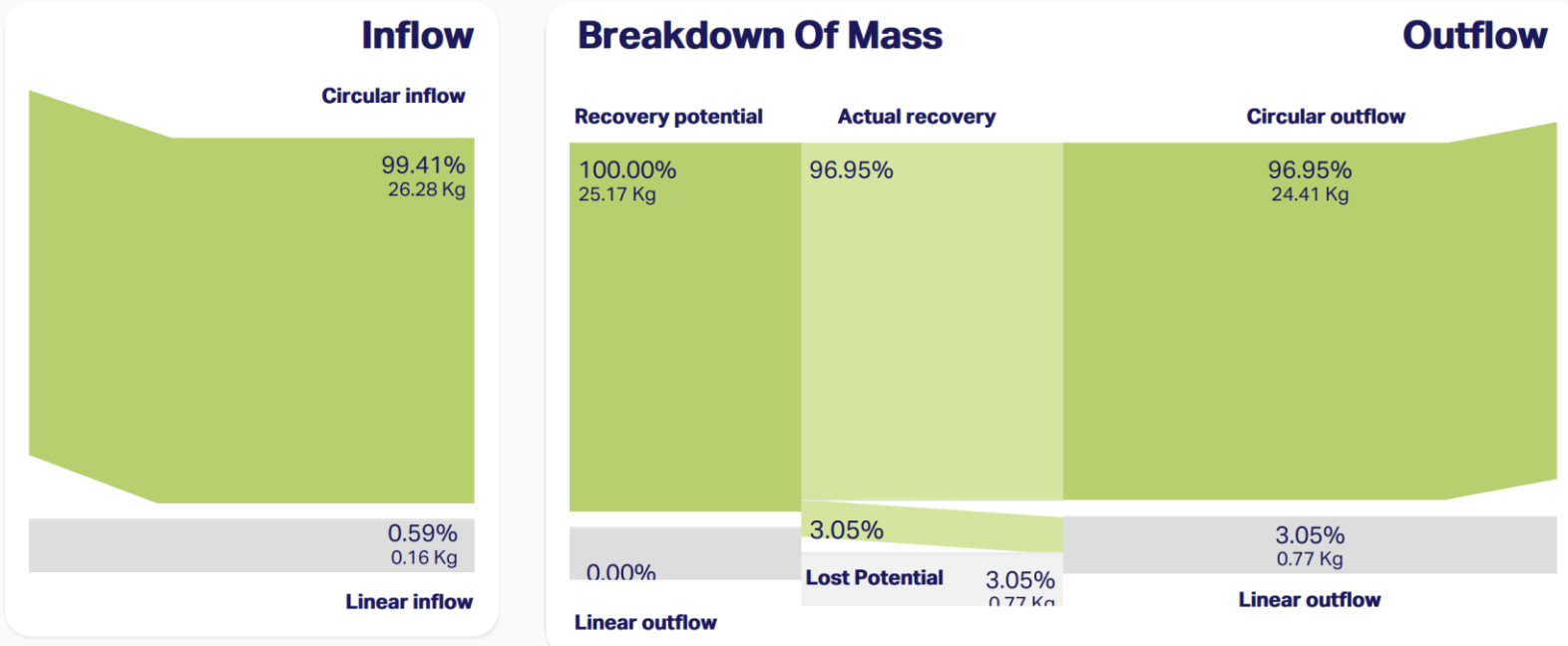
High Environmental Cost Indicator (ECI) but very high CTI score



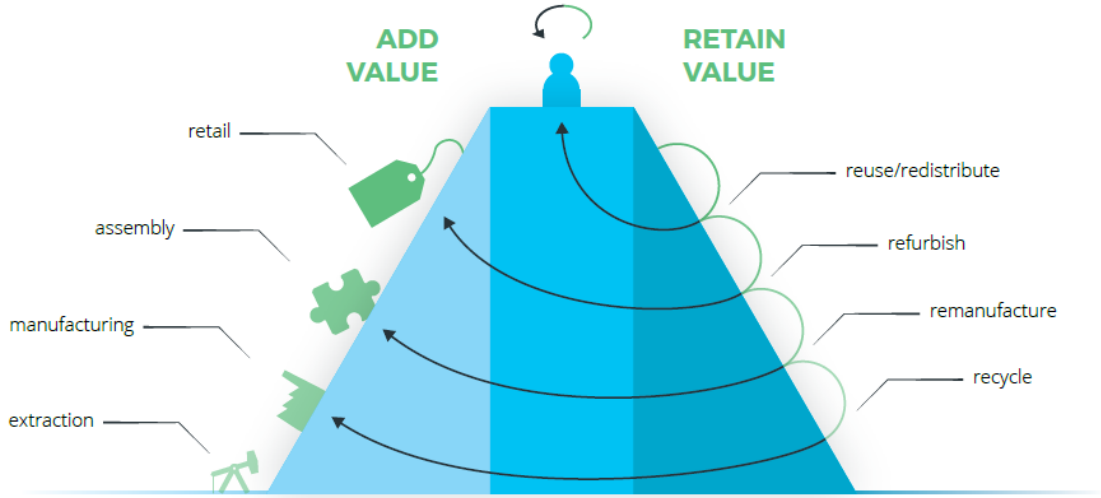
SUSTAINABILITY
STATEMENT

DOWNLOAD

% circularity 98.21%



Pretty Plastic



CIRCULAR DESIGN	OPTIMAL USE	VALUE RECOVERY
Design products and materials with the aim of long term value retention: Product Design, Circular Materials, Classic Long Life, Encourage Sufficiency	Support better usage and product productivity: Product as a Service, Life Extension, Sharing Platforms, Sell and buy back, Repair & Maintenance Service	Capture value after user life: 2nd hand seller, Refurbisher, Recycler, Recaptured material supplier

How to decide what is considered circular during procurement?

With not everyone in the value chain involved and convinced about the concept of ‘value’?

How to decide what is considered circular during procurement?

When data from the own operations or value chain` and can’t always be trusted ?


Returned after usage...

But we see so many ‘successful’ pilots and projects around us…


So I'll
Circular Pioneers
with Janina Nieper
Podcast
Circular Pioneers
Circular Pioneers

A circular procurement process begins long *before* the tender.

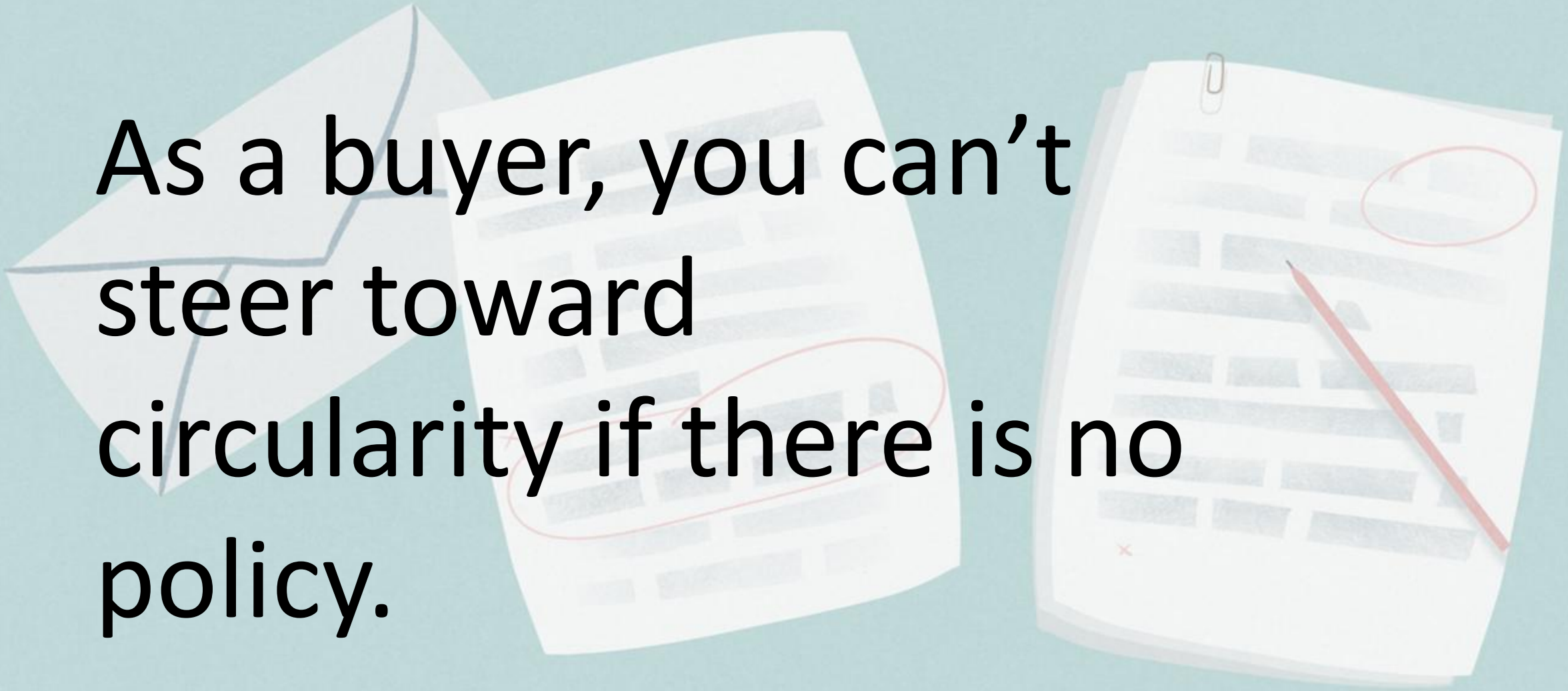
How do we decide today?

We say we want circularity — but we still award on price.

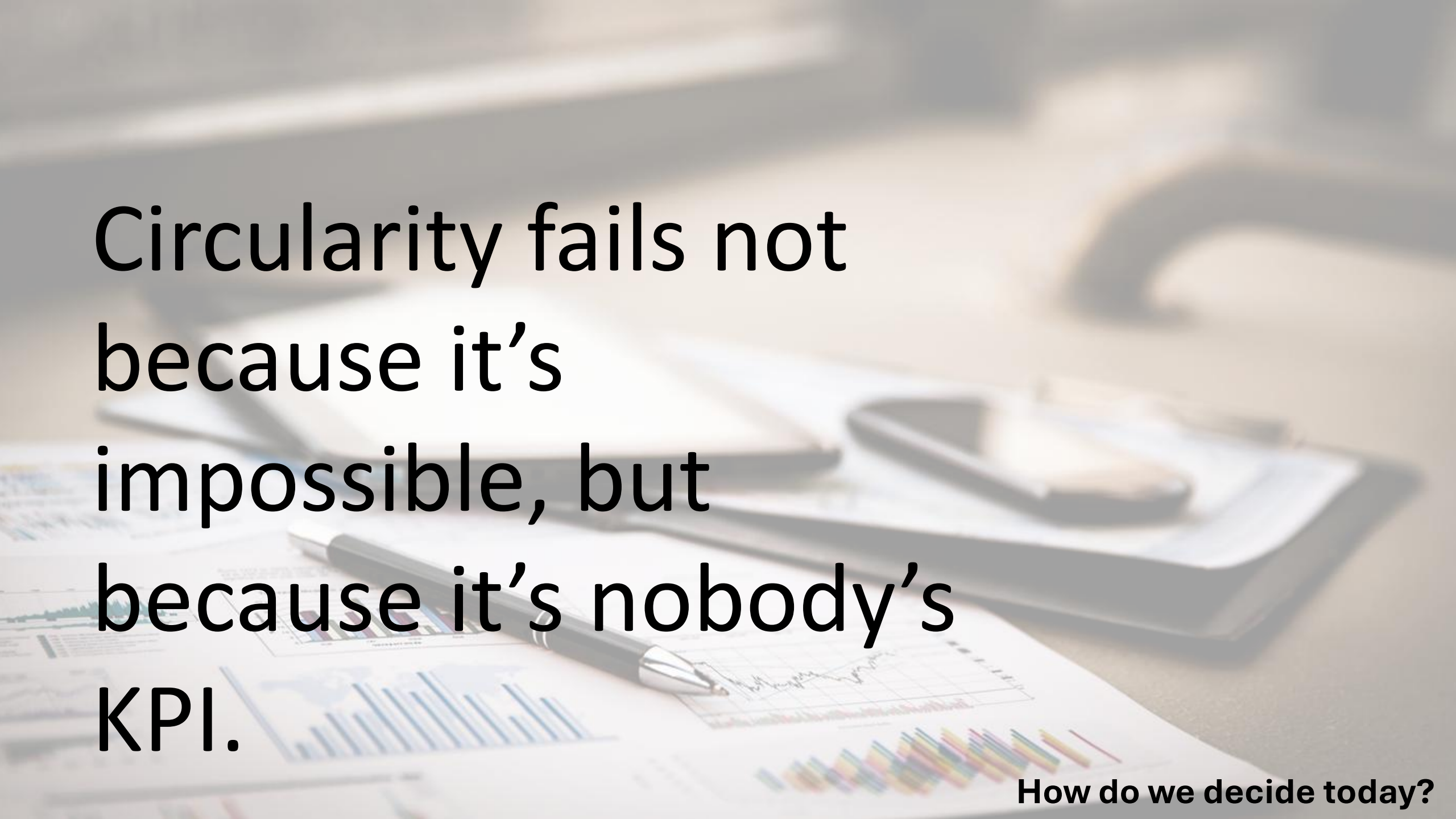
How do we decide today?

Circularity requires courage — and our system rewards caution.

How do we decide today?



As a buyer, you can’t steer toward circularity if there is no policy.



Circularity fails not because it’s impossible, but because it’s nobody’s KPI.

Essence of impact monitoring

Foundations of Impact Monitoring in Circular Procurement:

- A shared definition of Circular Economy
- A unified circularity framework
- A clear understanding of value
- A system you can trust (data quality + governance)

Pathways to better circular decisions

1. The structural route: Follow ESPR (+ leading best practices)
2. The behavioural route: Apply the Fogg behaviour model

The structural route

- Green public procurement will become **mandatory** in the EU progressively from 2026–2027 onward, depending on the product group, through the new Ecodesign for Sustainable Products Regulation (ESPR).
- Full EU-wide mandatory GPP across most priority sectors is expected by 2030.
- Phones, laptops and workwear are all priority product groups under ESPR as defined in Working Plan.

The structural route

What is expected to be done?

- Include circular performance requirements in the tender
- Require Digital Product Passport (DPP) information
- Track lifetime performance and monitor usage

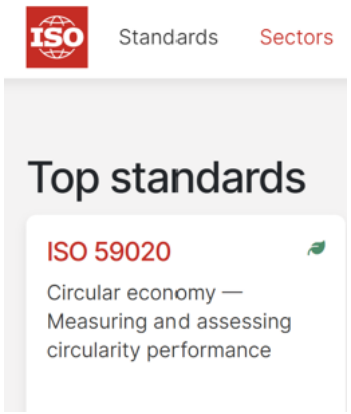
ESPR criteria

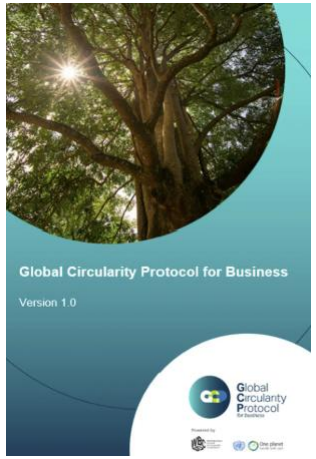
- Horizontal instructions (manuals)
- Durability
- Recycled content
- Repairability
- Reliability
- End-of-life performance
- Expected life
- Presence of substances of concern
- Resource efficiency
- Upgradability
- Recyclability
- Maintenance & refurbishment
- Reusability
- Energy efficiency
- Environmental impact
- Minimization of waste creation
- Remanufacturability
- Recovery of materials

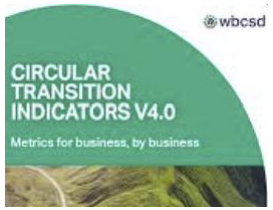
The structural route

Even though delegated acts per product group are not published…

The stars have aligned in the last decade…



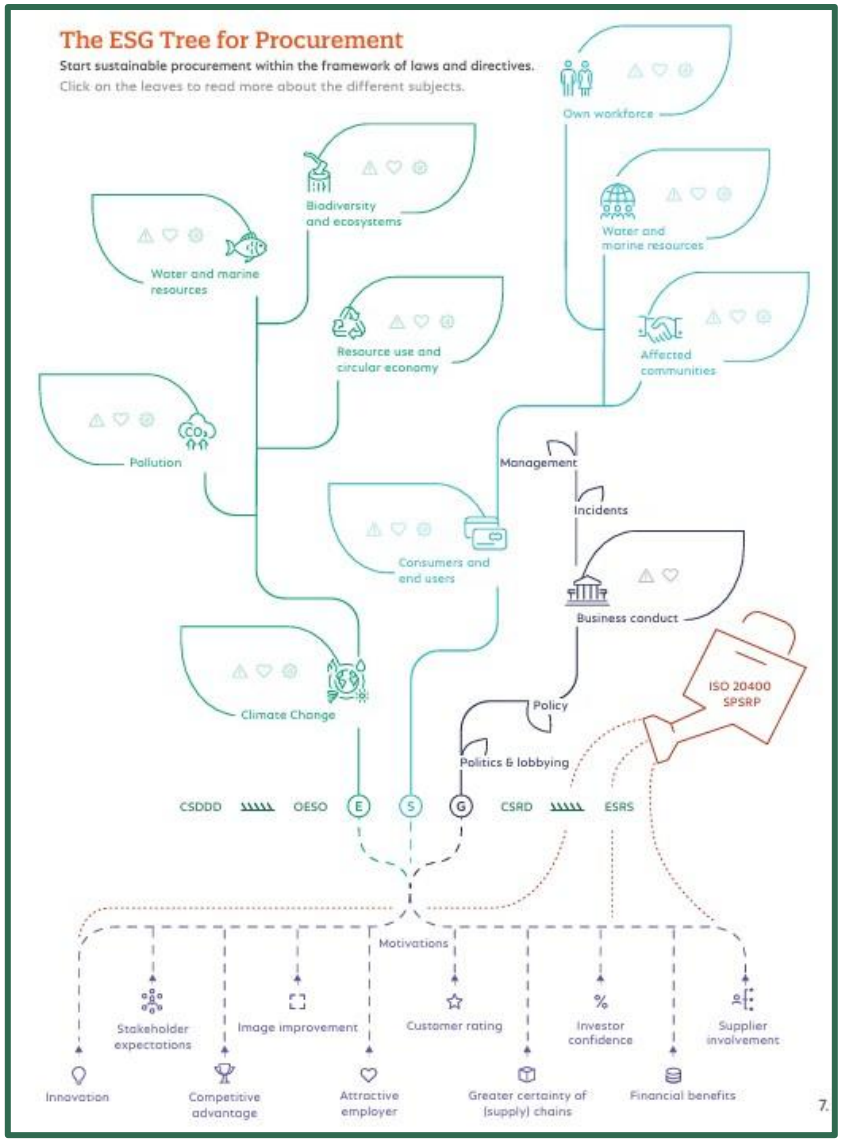




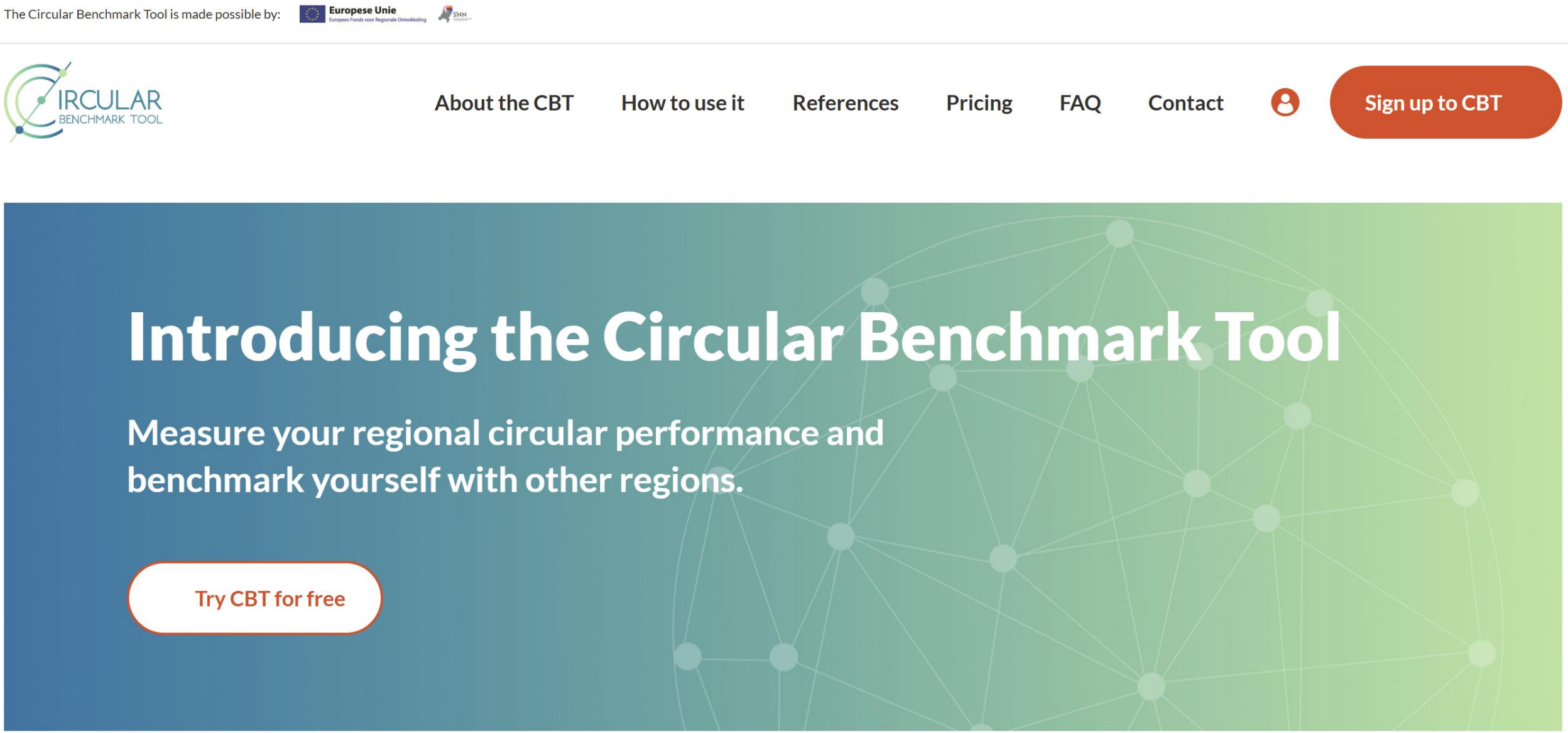
All frameworks:

- Value retention across multiple lifecycles
- Differentiate higher between lower circular strategies
- Transparent data (materials, impact, passports
- Use same indicator families (value, material, waste, lifetime)

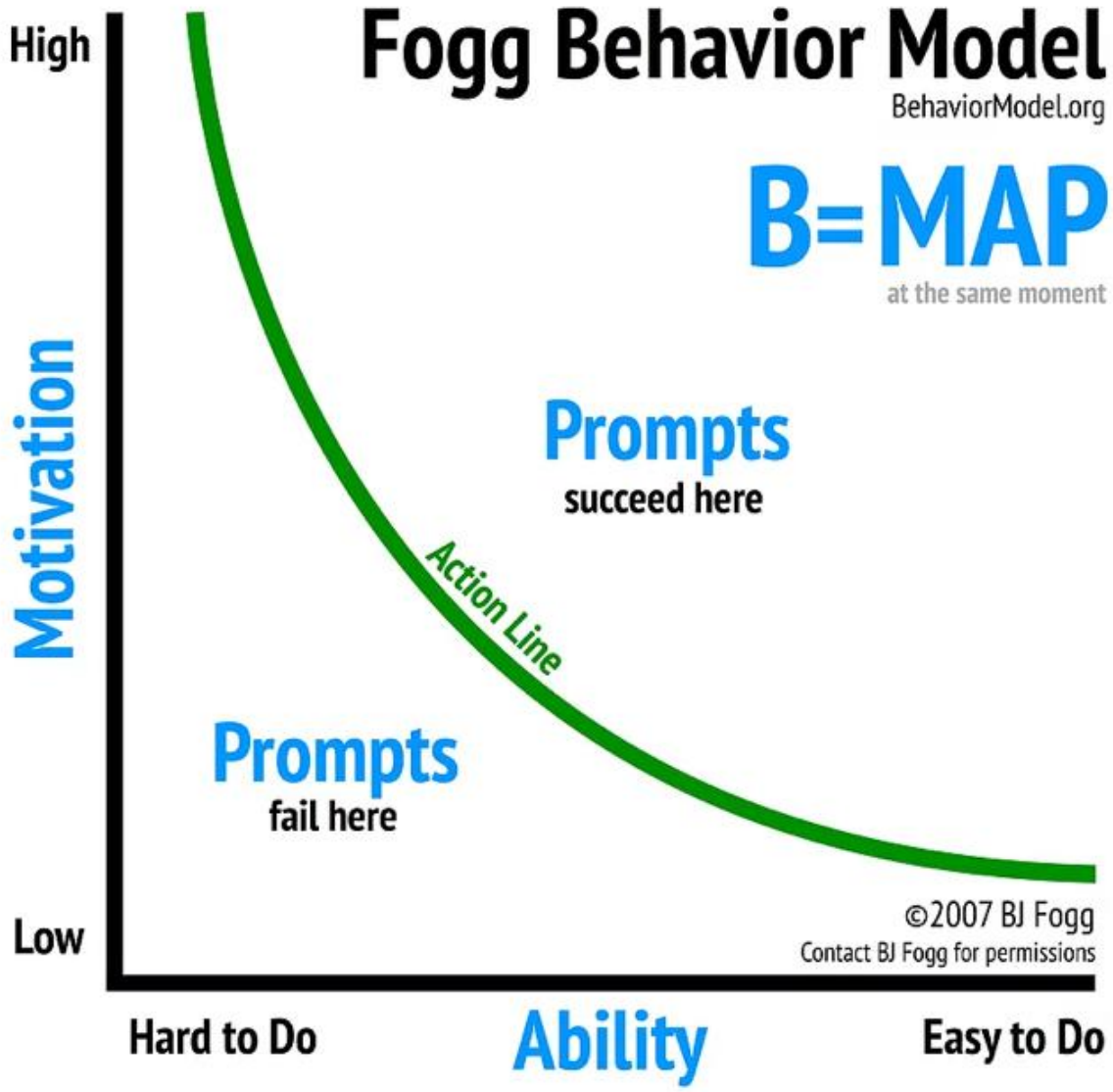
The structural route - examples



The structural route - examples



The behavioural route



Motivation, ability & prompt

Motivators:

- pleasure/pain, hope/fear, social acceptance/rejection

Ability

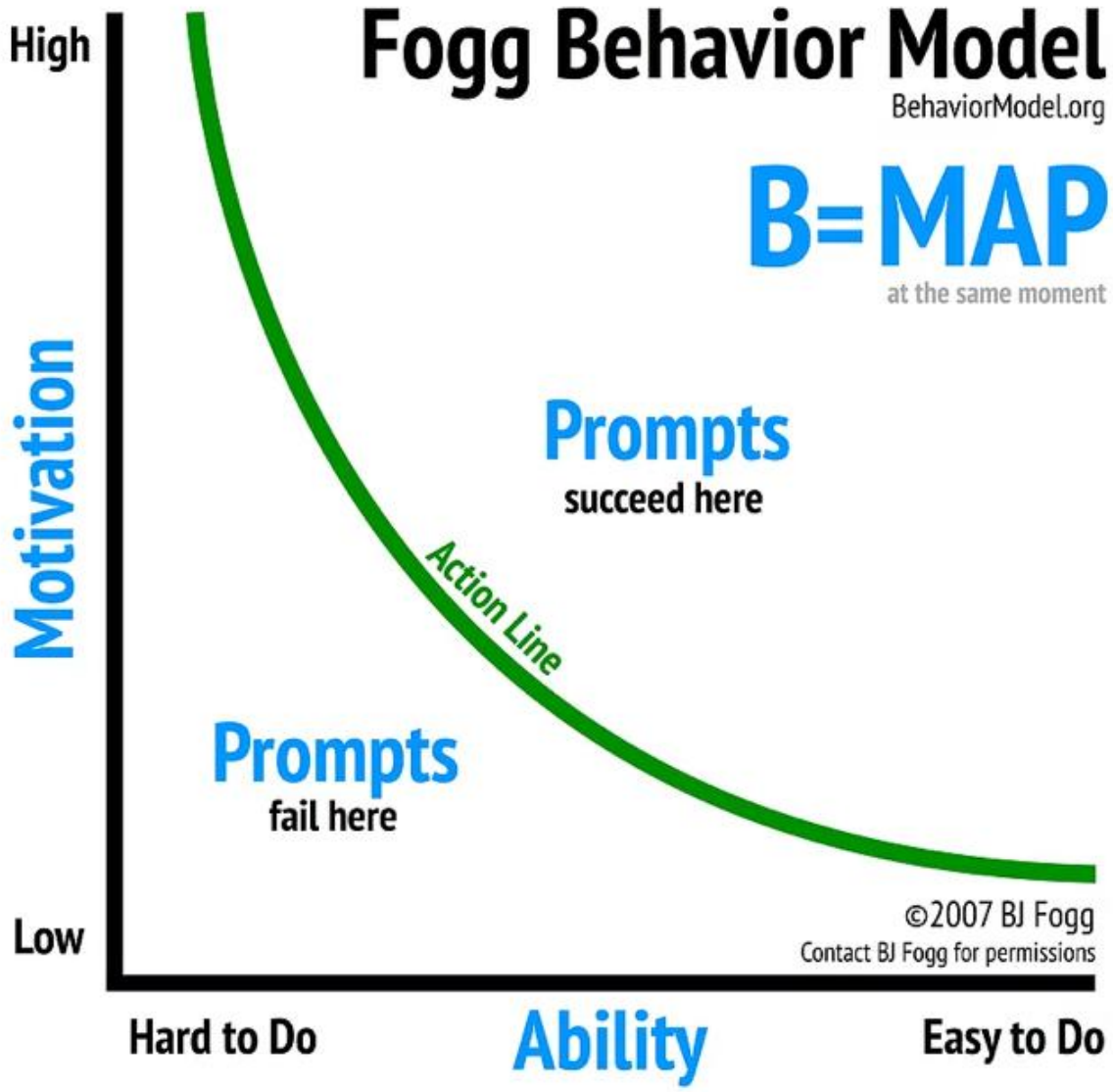
Simplicity factors e.g. time, money, physical effort, brain cycles, routines

Prompt is a trigger to activate people at the right place & time

Characteristics

- Prompt is noticeable
- Prompt is associated with a target behavior
- Prompt happens when we are motivated & able

The behavioural route



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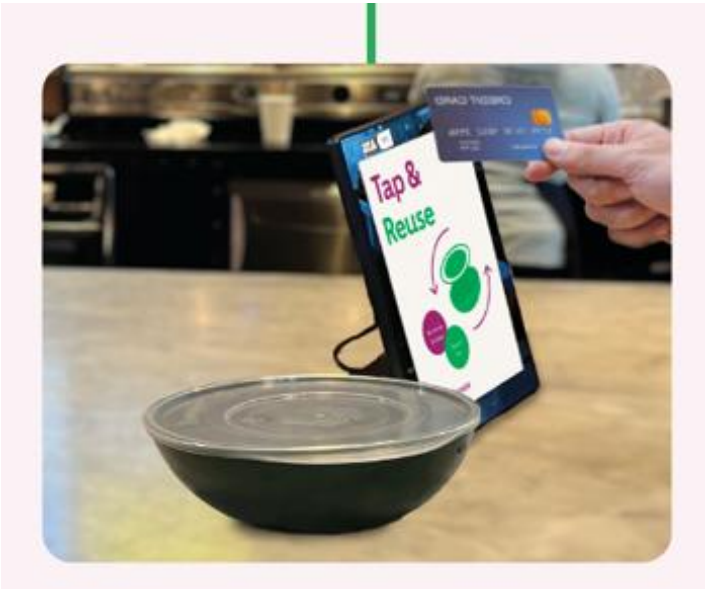
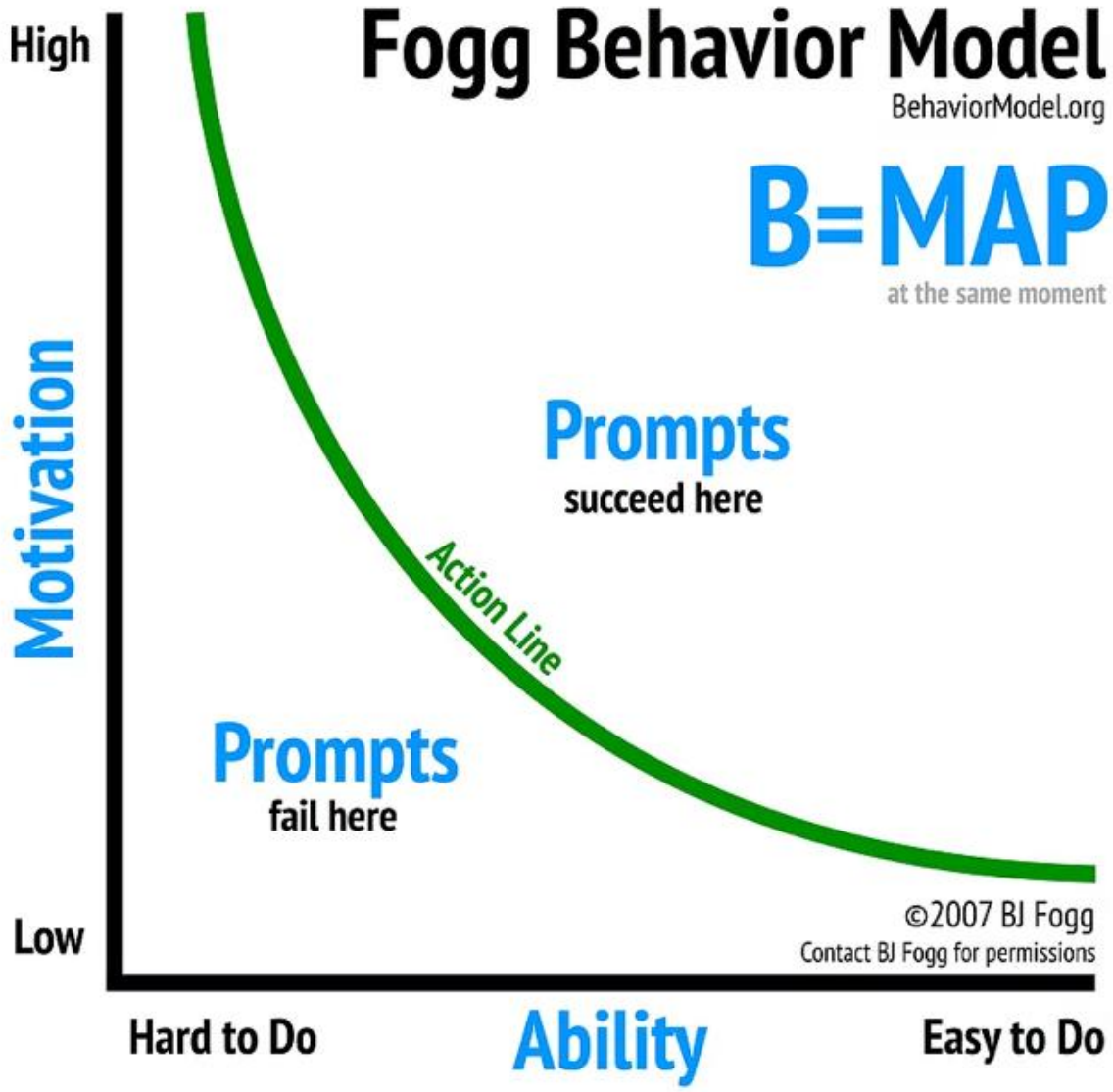


AVINOR
AIRPORTS OF NORWAY

TULIPS

The behavioural route



Motivation, ability & prompt

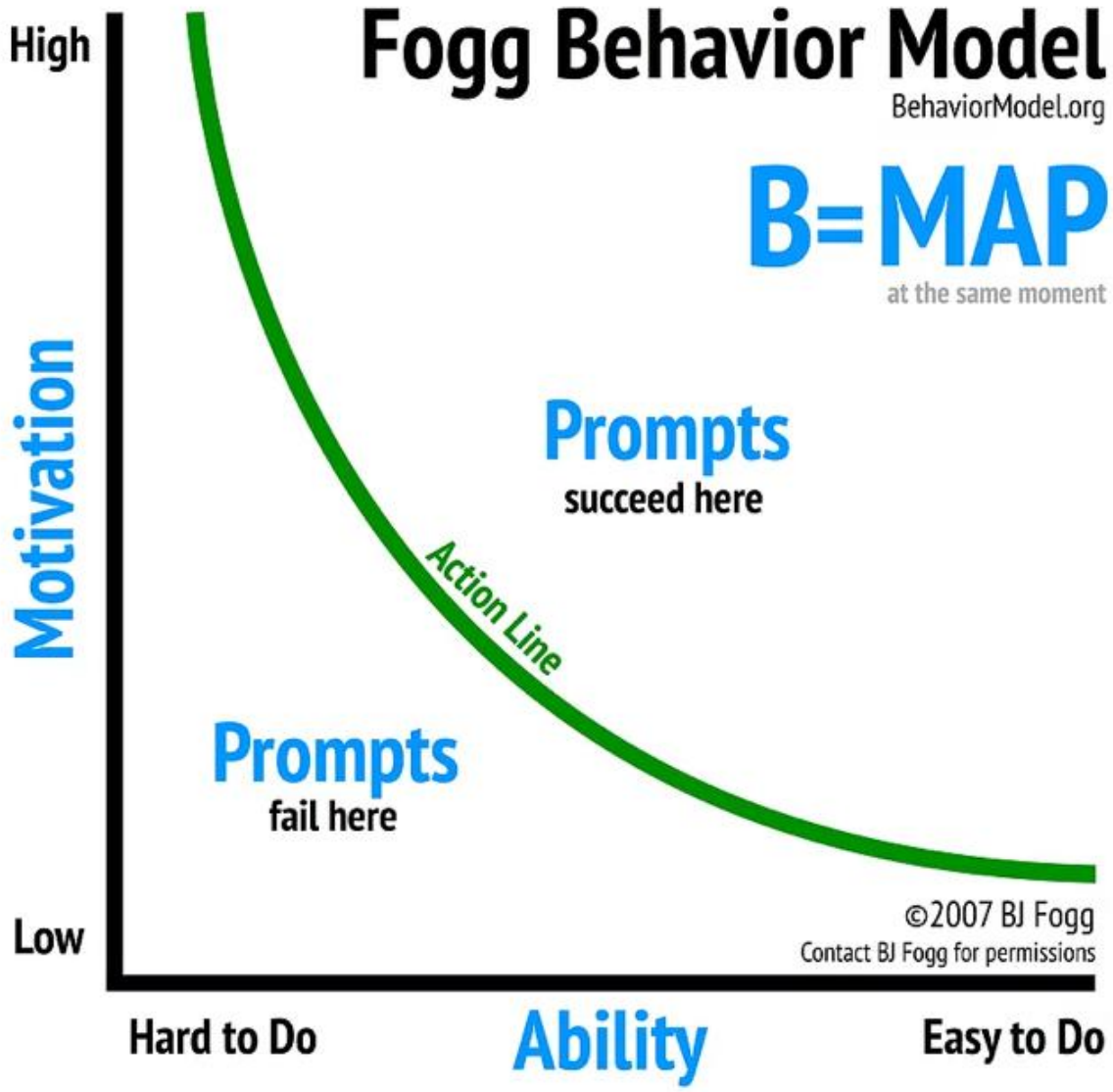
Ability

Simplicity factors e.g. time, money, physical effort, brain cycles, routines

Allowing to use one phone for work and private (double sim):

- Additional data clearing
- Security approvals
- Extra asset tracking
- Unclear warranty arrangements

The behavioural route

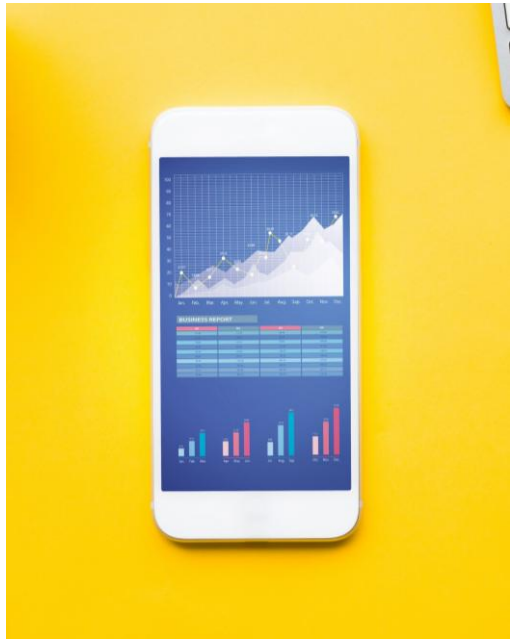


Motivation, ability & prompt

Prompt is a trigger to activate people at the right place & time

"Specs are copied from the previous tender ad does not include ESPR criteria."

A department requests "new laptops". Procurement receives the request as a task, not a trigger to ask: can we reuse or refurbish?



Mini decision game: How do you choose your route?

Interreg Co-funded by the European Union
North-West Europe
CIRCULAR SHIFT

Who are our stakeholders?

Regulators	(e.g., data protection authorities, competition authorities, environmental inspectors, and licensing/permit authorities)
Customers	(e.g., direct customers, indirect customers, and advocates)
Employees	(e.g., current employees, potential employees, suppliers' employees, retirees, representatives, and dependents)
Industry	(e.g., suppliers, competitors, industry associations, industry opinion leaders, and media)
Community	(e.g., residents near company facilities, chambers of commerce, resident associations, schools, community organizations, and special interest groups)
Environment	(e.g., investors, shareholders, agents, analysts, and ratings agencies)
Government	(e.g., public authorities and local policymakers, regulators, and opinion leaders)
Civil society organizations	(e.g., NGOs, faith-based organizations, labor unions, and general public)

Which KPIs are important throughout the entire procurement process?

What are the risks along the way?

Where do we see opportunities?

What do we want to steer on (ESPR criteria)?

ESPR criteria

- Horizontal instructions (manuals)
- Durability
- Recycled content
- Repairability
- Reliability
- End-of-life performance
- Expected life
- Presence of substances of concern
- Resource efficiency
- Upgradability
- Recyclability
- Maintenance & refurbishment
- Reusability
- Energy efficiency
- Environmental impact
- Minimization of waste creation
- Remanufacturability
- Recovery of materials

Break!

Presentations by each group when we’re back ☺

Presentations by each group. Reflect on:

→What stood out in how you made decisions?

→ Did you get a sense of finding meaningfull indicators or did you run into challenges?

→ What worked surprisingly well?

Time to plan! Start with your own group first, walk around the room for inspiration and come back to your poster if you want to make changes.

Questions	Guideline / example
1. Which KPIs and steering criteria will you prioritise?	*Prioritise 3/4 from your lists*
2. What needs to change in your organization's decision making to measure and manage the KPIs and steering criteria?	*e.g., more collaboration with senior leadership / internal training. Use sticky note per KPI and steering criterium*
3. Who needs to be at the table?	*Prioritise from your list*
4. When will you evaluate?	*e.g., specific moment within 6–12 months, use sticky note per KPI and steering criterium*