



THE LANDSCAPE OF CIRCULARITY

Built environment

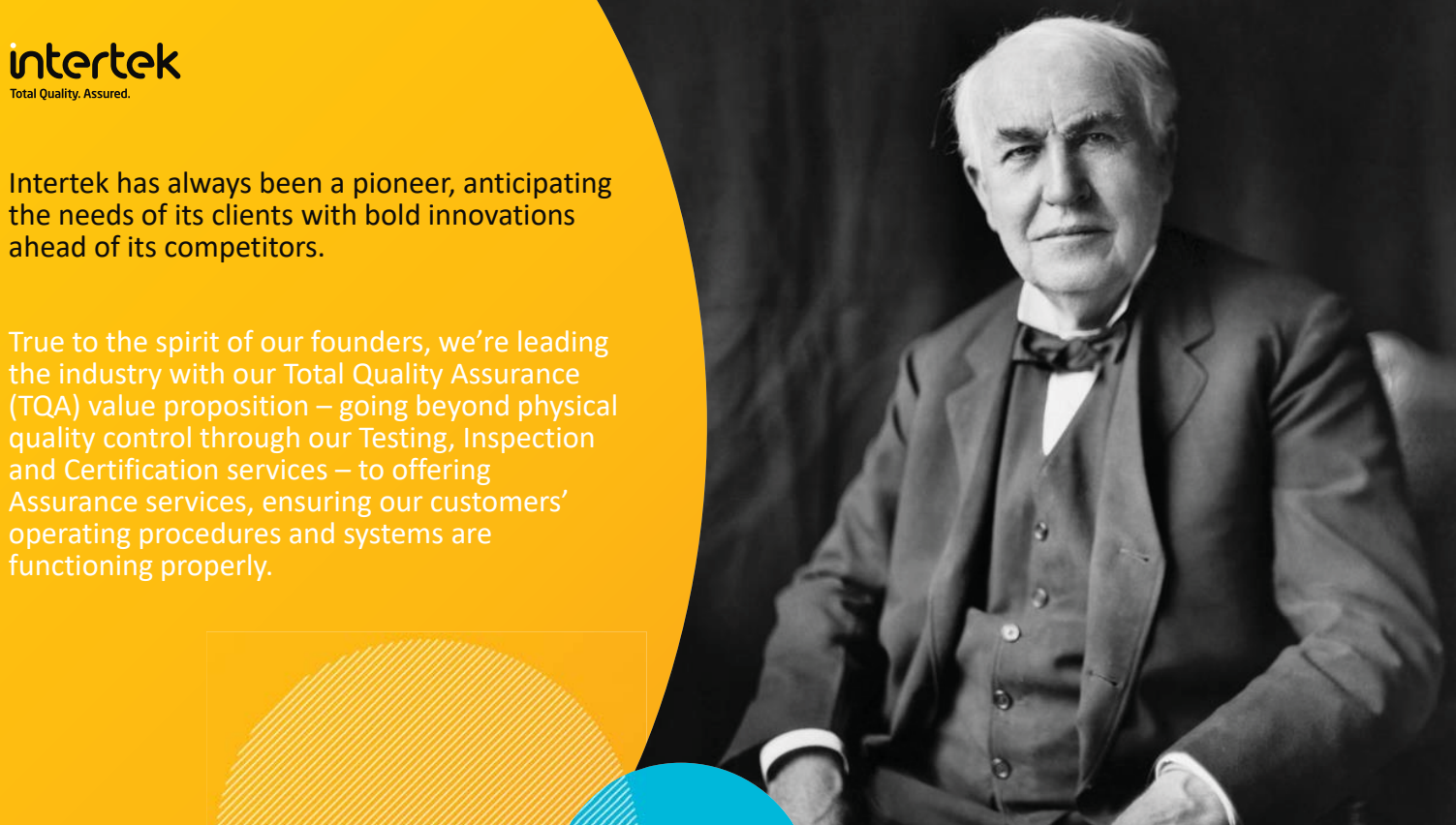
Presented by:

Katie Livesey, M.Sc., BA
Sustainability Project Lead



Intertek has always been a pioneer, anticipating the needs of its clients with bold innovations ahead of its competitors.

True to the spirit of our founders, we're leading the industry with our Total Quality Assurance (TQA) value proposition – going beyond physical quality control through our Testing, Inspection and Certification services – to offering Assurance services, ensuring our customers' operating procedures and systems are functioning properly.



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Global Market Leader in TIC

1,000+ laboratories and offices

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Global ATIC Business
with over **43,000 Employees**

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KATIE LIVESEY M.Sc., BA Sustainability Project Lead

Currently, Katie Livesey is a Sustainability Project Lead within Health, Environmental, & Regulatory Services at Intertek. For over 20 years, Katie has focused on sustainability within the build environment.

Katie has extensive experience in standards development (FSC, PEFC, BES6001, Eco-Reinforcement, BREEAM), stakeholder consultation, supply chain management, collaboration, and auditing.

Her core expertise is in responsible and ethical sourcing, as well as designing sustainability KPIs and frameworks for delivering business value and reducing brand risk.

She has an avid interest in addressing complex strategic business challenges to match sustainability with business value.

Katie is a trained EDGE expert, BSI committees' member and an experienced facilitator.



Action Plan

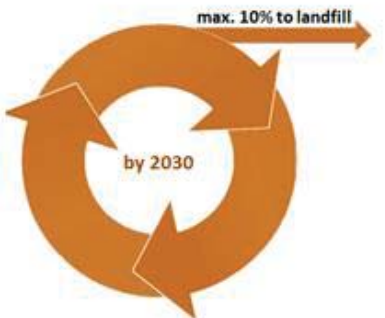
- Improved Product Design & Production
- Better Consumer Information
- Provisions to support new waste legislation
- Boosting market for materials & water reuse

Focus Areas

Plastics
Food waste
Bio-based m

Ben
€600bn cost
580,000 new
450m tonne

 Directives



65% recycling of municipal waste
75% recycling of packaging waste
new product ecodesign requirements
support for use of bio-nutrients in fertilisers

BRIEF HISTORY

The EU Circular Economy Package announced in December 2015

Ensure resources are used more efficiently to reduce climate change, work towards better enforcement of the guarantees on tangible products and tackling false green claims.

- increased recycling targets, landfill disposal limits,
- producers - Extended Producer Responsibility (EPR) schemes
- streamlining reporting and monitoring of waste and material flows
- provision of better consumer information initiatives to extend life of products
- producer responsibility and strategy & resource management
- from waste to resources

Circular economy package Four legislative proposals on waste

SUMMARY

Although waste management in the European Union (EU) has improved considerably in the past decades, almost a third of municipal waste is still landfilled and less than half is recycled or composted, with wide variations between Member States. Improving waste management could deliver positive effects for the environment, climate, human health and the economy. As part of a shift in EU policy towards a circular economy, the European Commission made four legislative proposals: introducing new waste-management targets regarding reuse, recycling and landfilling. The proposals also strengthen provisions on waste prevention and extended producer responsibility, and streamline definitions, reporting obligations and calculation methods for targets. As the Parliament and Council begin their consideration of the proposals, stakeholders are divided.

January 2016

4.7. Buildings and Construction Products

The construction sector has large potential for circular economy given the scale of material use, value contained in buildings, labour intensiveness and long-term effect of measures. Overall the construction sector provides 18 million direct jobs and contributes to about 9% of the EU's GDP. It is one of the most resource consuming sectors in Europe - it accounts for approximately half of all extracted materials, half of total energy consumption and one third of water consumption. Construction and demolition waste (CDW) accounts for approximately 25% - 30% of all waste generated in the EU with very significant life cycle impacts, particularly associated with extraction and processing stages. The level of recycling and material recovery of CDW varies greatly (between less than 10% and over 90%) between EU Member States.

Various safety and quality rules in EU and national legislation apply to buildings. A more limited number of EU initiatives address sustainability issues in this sector. The Energy Performance of Buildings Directive and the Energy Efficiency Directive are the EU's main legislative instruments promoting the improvement of energy performance of buildings within the EU. These instruments focus on energy performance in the operational phase and as such, do not cover overall life cycle performance within the meaning of circular economy.

The overall objective for circular buildings is to reduce life cycle impact at the same time as providing healthy and comfortable spaces. This means amongst others reduced whole life carbon

Final Circular Economy Package

Three years after adoption, the Circular Economy Action Plan is fully completed. Its 54 actions have been delivered, even if the work on some of them continues beyond 2019.

On 4 March 2019, the European Commission adopted a comprehensive report on the implementation of the Circular Economy Action Plan. The report presents the main achievements under the Action Plan and sketches out future challenges to shaping our economy and paving the way towards a climate-neutral, circular economy where pressure on natural and freshwater resources as well as ecosystems is minimised.



The EU Monitoring Framework for the Circular Economy presented by the Commission in 2018 includes 10 key indicators covering each phase of the lifecycle of products as well as competitiveness aspects. All indicators are regularly updated and available on a dedicated website ⁸.

Some Member States have developed additional national circular economy indicators, thus complementing the overview provided by the EU framework. The European Parliament ⁹, the Council ¹⁰ and the European Economic Social Committee ¹¹ have also highlighted the role played by other indicators in capturing missing aspects of the circular economy, such as evaluating material flows in industrial symbiosis and accounting for natural capital.



Focus	Indicator	Is there a relevant EU target or action?
Production and consumption	1. EU self-sufficiency for raw materials (%)	The Commission's 2008 Raw Materials Initiative ⁴⁴ outlines relevant broad objectives. There are no explicit targets for this indicator.
	2. Green public procurement (tbc.)	This is a new indicator with no existing data, there are no explicit EU targets on GPP. A mandatory GPP question will be included in procurement procedures.
	3. Waste generation	3a. Generation of municipal waste per capita (kg per capita)
		3b. Generation of waste excluding major mineral wastes per GDP unit
		3c. Generation of waste excluding mineral wastes per DMC (%)
Waste management	4. Food waste (million tonnes)	This is a new indicator, there is no agreed EU definition of food waste. The EU has committed to SDG 12.3 to half per capita food waste by 2030. ⁴⁵
	5. Overall recycling rates	5a. Recycling rate municipal waste (%)
		5b. Recycling rate excluding mineral waste (%)
	6. Recycling rates for specific waste streams	6a. Overall packaging (%)
		6b. Plastic packaging (%)
		6c. Wooden packaging (%)
		6d. E-waste (%)
		6e. Bio-waste (%)
		6f. Construction and demolition waste (%)
Secondary raw materials	7. Contribution of recycled materials to raw materials demand	7a. End of life recycling input rates (EOL-RIR) (%)
		7b. Circular material use rate (%)
	8. Trade in recyclable raw materials	Imports from non-EU countries (tonnes)
		Exports to non-EU countries (tonnes)
		Imports from EU countries (tonnes)

*** colour coding explicit targets for the indicator

CEP TARGETS

Recycling rates by 2030

- all packaging (70 per cent)
- plastic (55 per cent), wood (30 per cent)
- ferrous metals (80 per cent)
- aluminium (60 per cent)
- glass (75 per cent)
- paper and cardboard (85 per cent)

Landfill

- all waste suitable for recycling or recovery shall not be sent to landfill by 2030
- by 2035, less than 10% of the total amount of municipal waste generated is sent to landfill.

Extended producer responsibility = efficient waste management'

AT THE BEGINNING.....



1970
SYMBOLIC ACTION

The celebration of the first **Earth Day** in 1970, marked a variety of environmental issues, including the importance of recycling and reuse.

Gary Anderson, a senior at the University of California, won a design competition sponsored by the United States Environmental Protection Agency for an emblem to put on the Earth Day logo. He earned a cash prize of \$2,500. A distinctive green-arrow Möbius strip became the domain as a universally recognizable symbol for recycling.

IT IS an awful lot of rubbish. Since 1960 the amount of municipal waste being collected in America has nearly tripled, reaching 245m tonnes in 2005. According to European Union statistics, the amount of municipal waste produced in western Europe increased by 23% between 1995 and 2003, to reach 577kg per person. (So much for the plan to reduce waste per person to 300kg by 2000.) As the volume of waste has increased, so have recycling efforts. In 1980 America recycled only 9.6% of its municipal rubbish; today the rate stands at 32%. A similar trend can be seen in Europe, where some countries, such as Austria and the Netherlands, now recycle 60% or more of their municipal waste. Britain's recycling rate, at 27%, is low, but it is improving.

RECYCLING, WASTE REDUCTION

Since WWII, 1970s and 1990s

NET ZERO OPERATIONAL CARBON

- TRADE OFF - embodied carbon increases
- Embodied carbon approximately 30 – 40% of the whole life carbon for offices in the UK
- Other building types generally 20 – 50%



Mutual Recognitions

Mutual Recognitions of EPDs

Parallel to its efforts of harmonizing EPDs within Europe at the ECO Platform, IBU fosters the process of mutual recognition on a bilateral level together with selected European and international programme holders according to EN 15804.

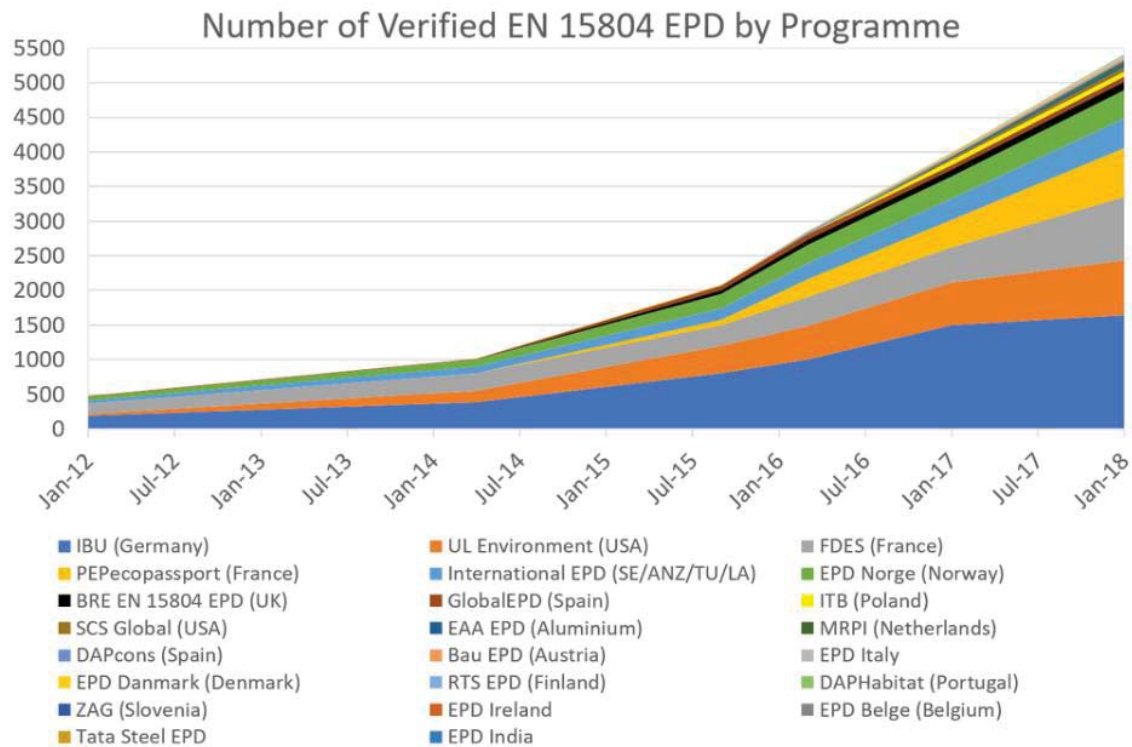
Hereby, IBU intends to save its members money and time when issuing their EPDs with others programme holders.

So far, seven mutual agreements between IBU und other programme holders regarding EPDs were finalized:

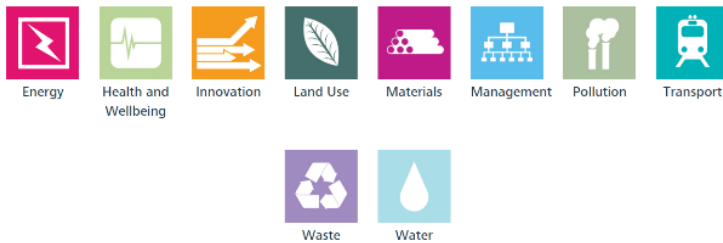
- BRE from Great Britain
- EPD Italy/ICMQ from Italy
- Global EPD/Aenor from Spain
- EPD Danmark (Denmark)
- EPD-Norge from Norway
- UL Environment from North America
- the Swedish programme holder The International EPD System

AENOR **bre**





BREEAM's performance rating and stars



BREEAM®

[like the fish]

BREEAM (Building Research Establishment Environmental Assessment Method)

It recognises and reflects the value in higher performing assets across the built environment lifecycle, from new construction to in-use and refurbishment.

FREE

https://www.breeam.com/filelibrary/BREEAM%20UK%20NC%202014%20Resources/SD5076_DRAFT_BREEAM_UK_New_Construction_2014_Technical_Manual_ISSUE_0.1.pdf





An environmental assessment tool for sustainable fit-outs.

Project teams interested in fitting out spaces in an environmentally sustainable way can use the SKA rating method to:

- Carry out an informal self- assessment of the environmental performance of their fit-out
- Commission a quality-assured assessment and certificate from an RICS-accredited SKA assessor
- Obtain clear guidance on good practice in fit-out and how to implement it
- Benchmark the performance of fit-outs against each other and the rest of the industry



Higher education fit-outs › Find out about SKA HE	Retail fit-outs › Find out about retail fit-outs
Office fit-outs › Find out about office fit-outs	SKA founder › Find out about Skansen who co-founded the tool with RICS and AECOM
Benefits › Why use Ska Rating?	SKA Accredited Assessor › How to become an assessor



LEED

Leadership in Energy and Environmental Design, is the most widely used green building rating system in the world.

Available for virtually all building, community and home project types, LEED provides a framework to create healthy, highly efficient and cost-saving green buildings.

A LEED for every project

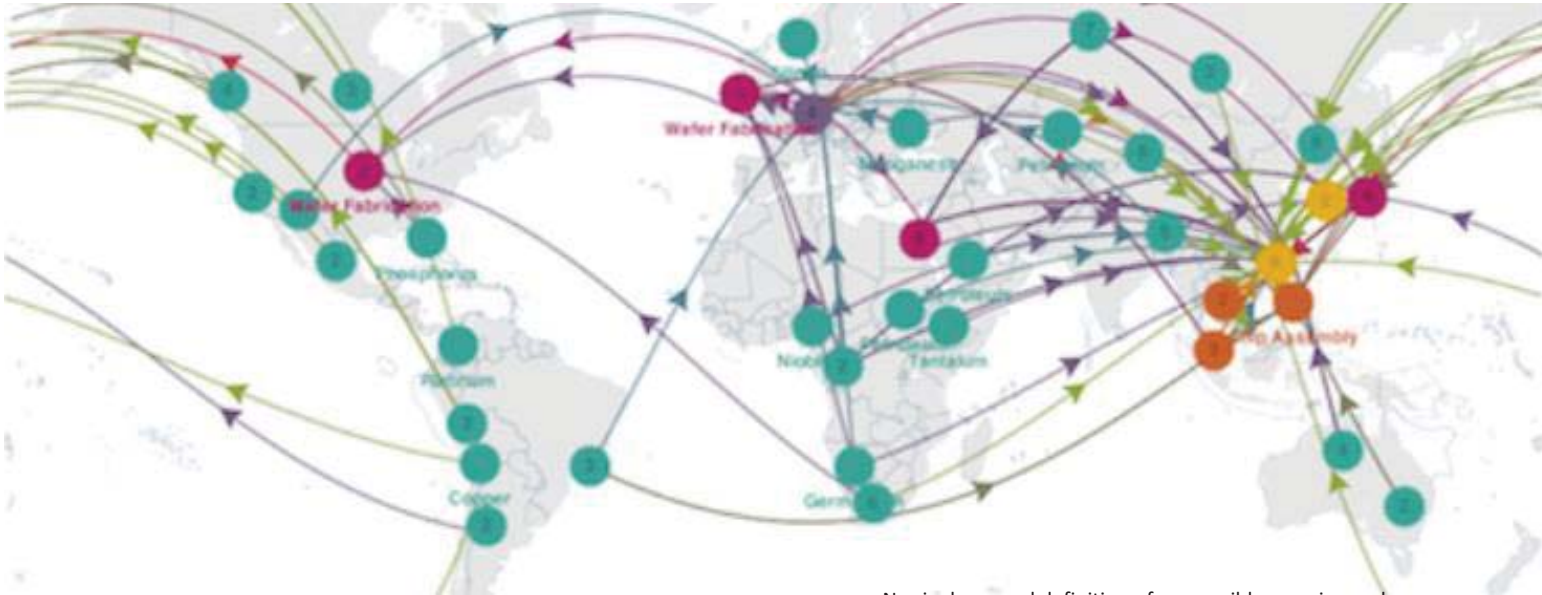
LEED works for all buildings anywhere, regardless of where they are in their life cycle. From hospitals to data centers, from historical buildings to those still in the design phase, there's a LEED for every type of building project.

BD+C Building Design and Construction	Applies to buildings that are being newly constructed or going through a major renovation; includes New Construction, Core & Shell, Schools, Retail, Hospitality, Data Centers, Warehouses & Distribution Centers, and Healthcare. Learn more. LEED v4 BD+C rating system PDF / LEED v4 BD+C scorecard / Reference guide overview
ID+C Interior Design and Construction	Applies to projects that are a complete interior fit-out; includes Commercial Interiors, Retail and Hospitality. Learn more. LEED v4 ID+C rating system PDF / LEED v4 ID+C scorecard / Reference guide overview
ND Neighborhood Development	Applies to new land development projects or redevelopment projects containing residential, commercial, or a mix. Projects can be at any stage of the development process, from conceptual planning to construction; includes Plan and Built Project. Learn more. LEED v4 ND rating system PDF / LEED v4 ND scorecard / Reference guide overview
Homes	Applies to single family homes, low-rise multi-family (one to three stories), or mid-rise multi-family (four to six stories); includes Homes and Multifamily Lowrise and Multifamily Midrise. Learn more. LEED v4 Homes rating system PDF / LEED v4 Homes scorecard / Reference guide overview
Cities and Communities	Applies to entire cities and sub-sections of a city. Using the Arc performance platform, LEED for Cities projects can measure and manage their city's water consumption, energy use, waste, transportation and human experience. Learn more. LEED for Cities Pilot scorecard / Guide to LEED-Certification: Cities and Communities Pilot

Achieve better buildings with LEED

Projects pursuing LEED certification earn points across several categories, including energy use and air quality. Based on the number of points achieved, a project then earns one of four LEED rating levels: Certified, Silver, Gold or Platinum.

Certified 40-49 points earned	Silver 50-59 points earned	Gold 60-79 points earned	Platinum 80+ points earned
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RESPONSIBLE SOURCING IS A CHALLENGING CONCEPT

- No single agreed definition of responsible sourcing and some use Ethical sourcing as a preferred alternative
- Application vary from sector to sector from company to company
- A high degree of collaboration and engagement between all parties is essential

BUSINESS RISK



- Investment
- Shareholders
- Stakeholders
- Business sustainability
- Where sustainability practitioners meet procurement



bre

Certificate of Approval
Certificate Number: RS0008 Issue: 02

Marshall's plc

having complied with the requirements of:
BES 6001: Issue 3.0
Framework Standard for Responsible Sourcing

has achieved a performance rating of: **Very Good** ★★★★★

and is authorised to use the BRE Global Certification Mark in association with the Product(s) listed in this certificate and appendix.

Company Address
Premier Way
Lowfields Business Park
Elland
HX5 9HT
United Kingdom

Production Site(s)
See appendix for details

Signature:  **Derek Hughes** 11 September 2014
Scheme manager Date of this issue

15 July 2011 10 September 2017
Date of first issue Expiry Date

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BES 6001
Responsible Sourcing
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Appendix to Certificate No: RS0008 Issue: 02
Marshall's plc

Scoring Table

Section	Score					Additional Credit
	1	2	3	4	5	
3.2.1 Responsible sourcing policy	C					
3.2.2 Legal compliance	C					
3.2.3 Quality management system	C					
3.2.4 Supplier management system	C					
3.3.1 Material traceability through supply chain	C					
3.3.2 EMS in the supply chain	C					
3.3.3 H&SMS in the supply chain	C					
3.4.1 Greenhouse gas emissions	C					
3.4.2 Energy management	C					
3.4.3 Resource use	C					
3.4.4 Waste prevention and management	C					
3.4.5 Water abstraction	C					
3.4.6 Life Cycle Assessment (LCA)	C					
3.4.7 Ecotoxicity	C					
3.4.8 Transport impacts	C					
3.4.9 Employment and skills	C					
3.4.10 Local community engagement	C					
3.4.11 Business ethics	C					

Key C Compulsory
Points scored
Maximum score available per clause

In accordance with the scheme requirements, you must notify us of any changes in circumstances so that we can amend the Certification details.

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Organisational Management Requirements

- 3.2.1 Responsible sourcing policy
- 3.2.2 Legal compliance
- 3.2.3 Quality management system
- 3.2.4 Supplier management system



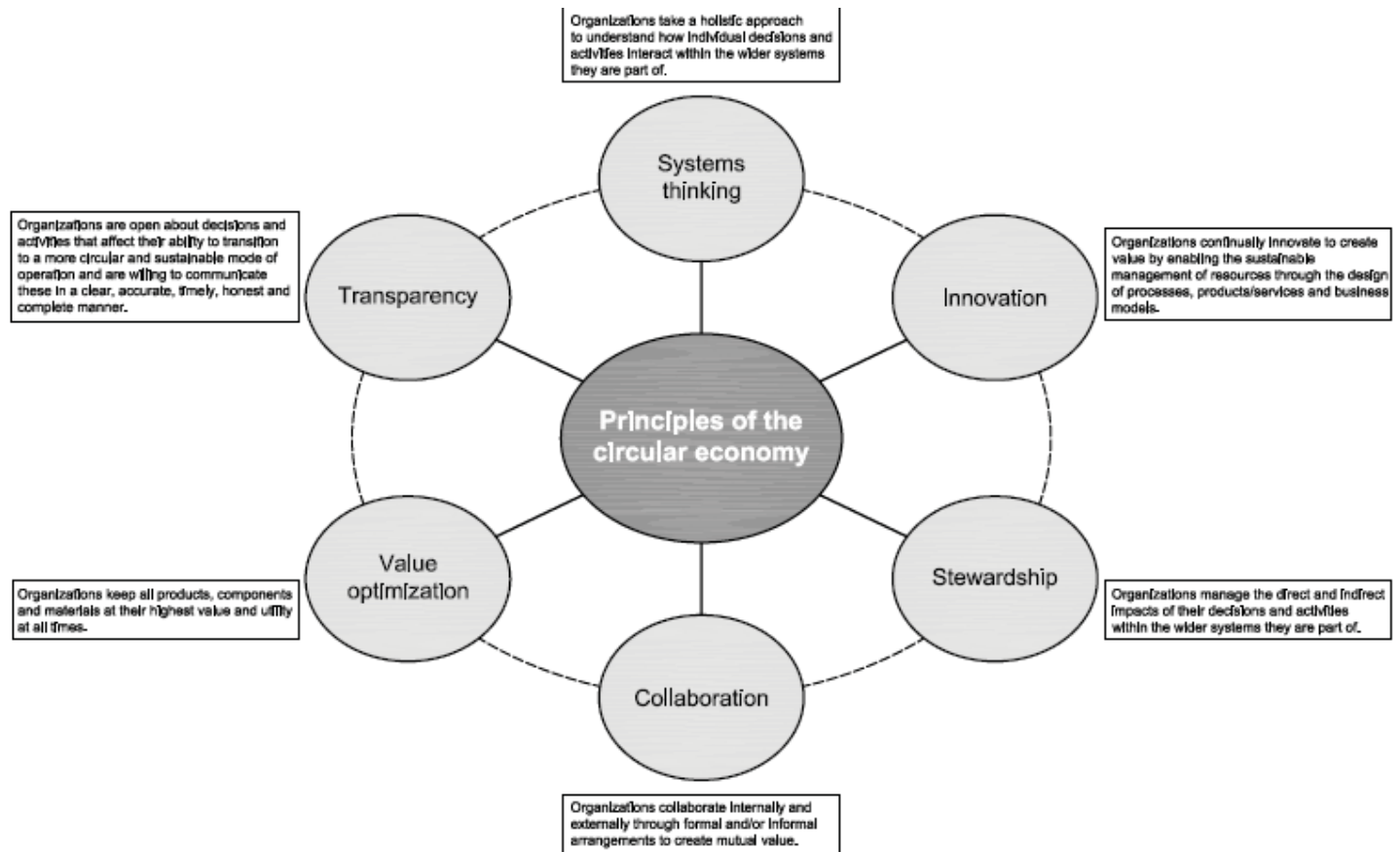
Supply Chain Management Requirements

- 3.3.1 Material traceability through the supply chain
- 3.3.2 Environmental management systems in the supply chain
- 3.3.3 Health and safety management systems in the supply chain



Environmental and Social Requirements

- 3.4.2 Greenhouse gas emissions
- 3.4.3 Resource use
- 3.4.4 Waste management
- 3.4.5 Water extraction
- 3.4.6 Lifecycle assessment
- 3.4.7 Transport impacts
- 3.4.8 Employment and skills
- 3.4.9 Local communities



CIRCULAR ECONOMY IN BUSINESS

- Does your organisation know how the CE may be relevant to your long term future and resilience?
- Do you have a strategic plan and direction for CE activities?
- Have you explored and prioritised a set of ideas or options for how to incorporate CE in your business?
- Do you have a feasibility plan or approach how to test and develop CE ideas?
- Do you have internal resources for the above?
- Have you piloted any ideas to determine viability?
- Have you successfully integrated ideas?
- Do you track and monitor?

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