



The circular economy, climate change and the role of the public sector

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What we'll cover

- Importance of CE in fighting climate change
- Scotland's workstreams
- Why public sector plays a key part

What is circular economy

LINEAR ECONOMY



RECYCLING ECONOMY



CIRCULAR ECONOMY



How does CE reduce greenhouse gas emissions?

Design out waste and pollution



To reduce GHG emissions

Keep products and materials in use



To retain the embodied energy

Regenerate natural systems

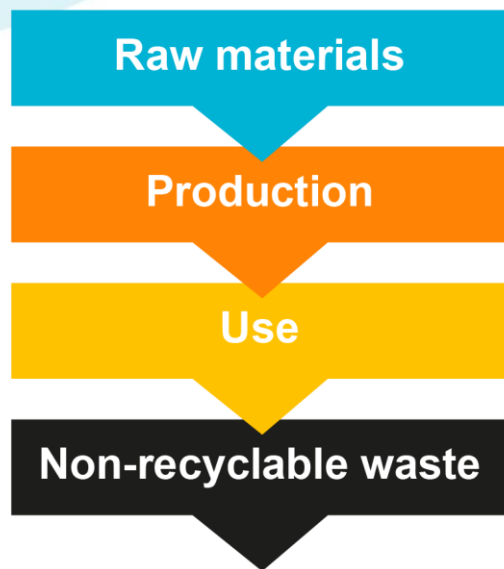


To sequester carbon

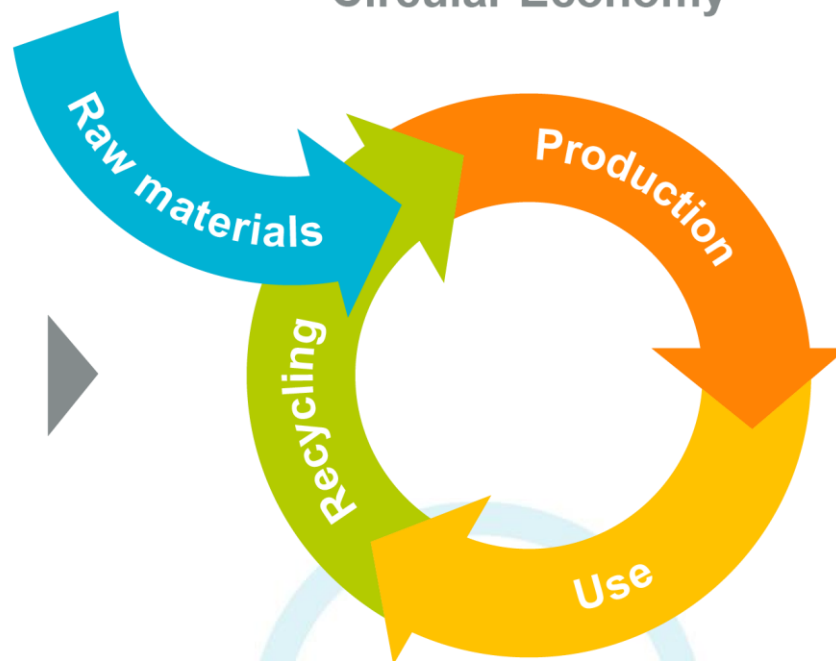
What does that mean?

Move from...

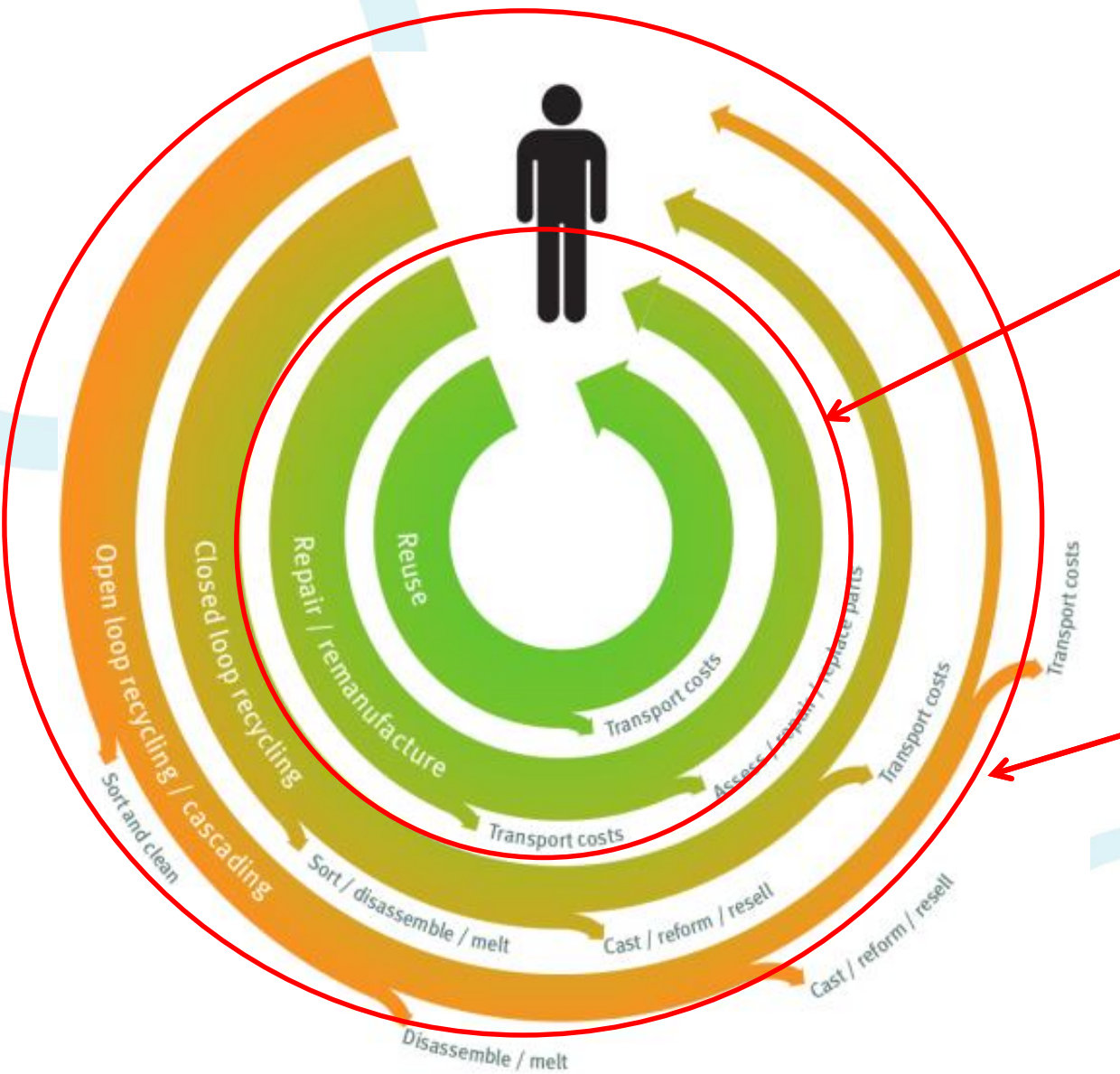
Linear Economy



Circular Economy



...leading to circular procurement



Inner Loop

Re-use
Repair & Remanufacture

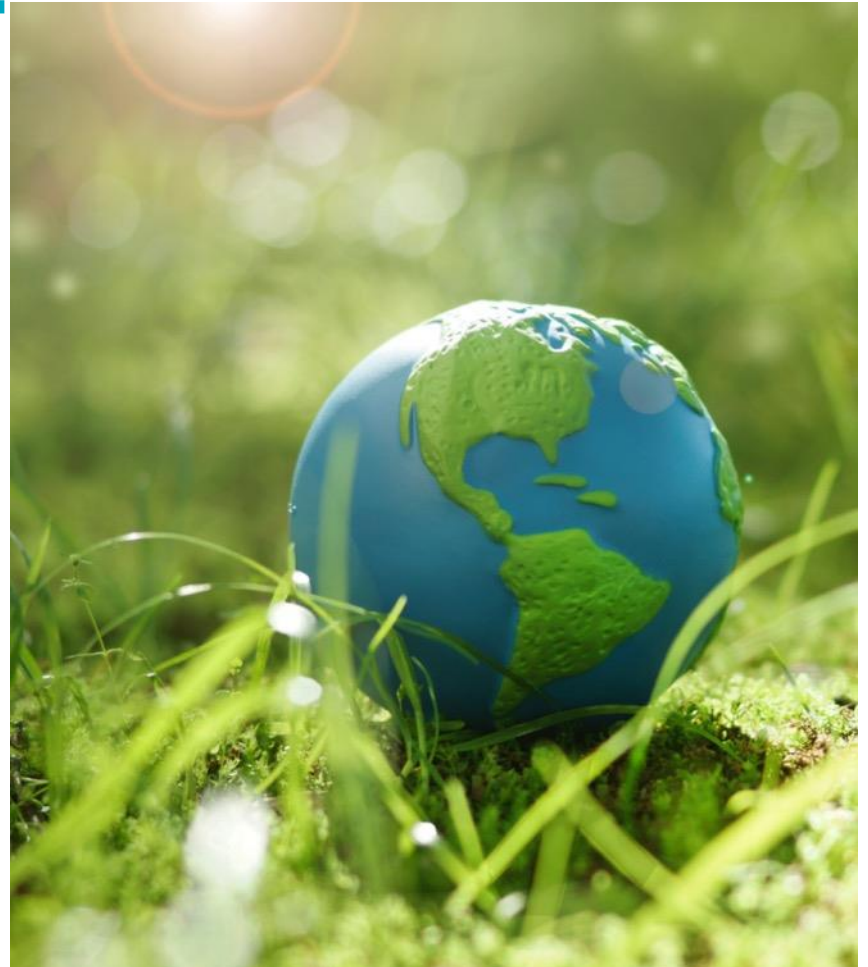
Outer Loop

Material recovery

- waste segregation
- material choice
- valorisation

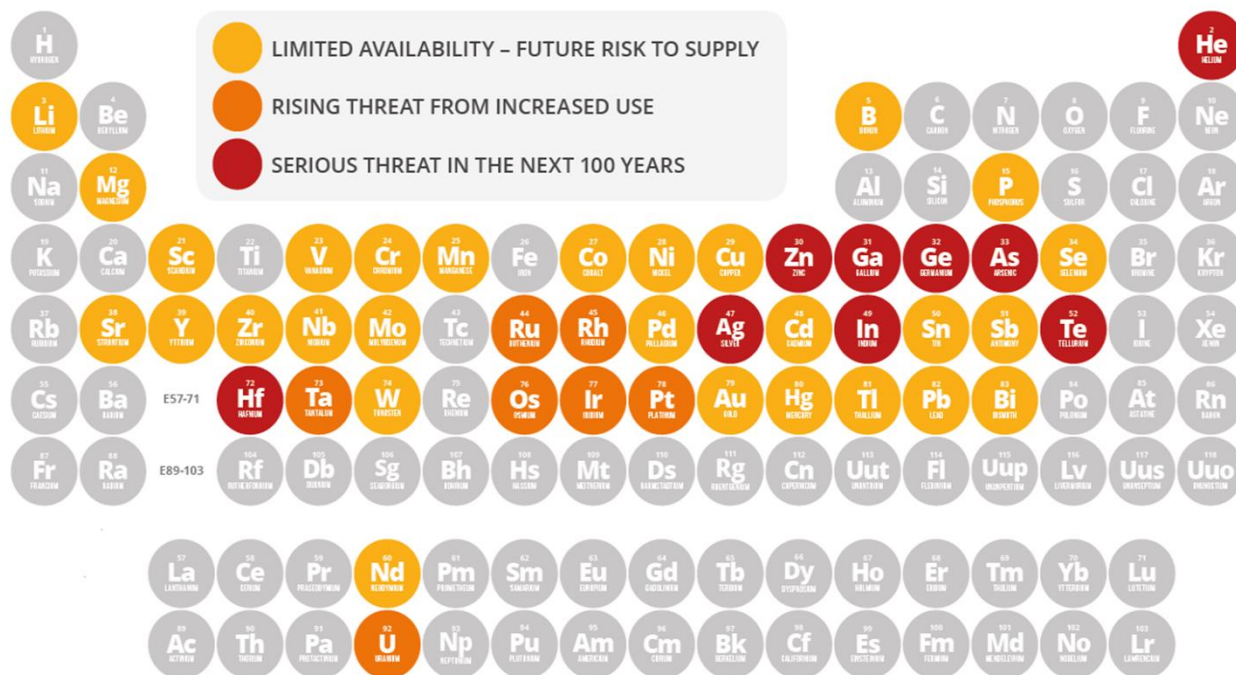
Why is it important?

- climate change
- rising population
- pressure on the world's land, water, energy and raw materials



What does it mean for us?

THE PERIODIC TABLE'S ENDANGERED ELEMENTS



SOURCE: CHEMISTRY INNOVATION KNOWLEDGE TRANSFER NETWORK

VISIBLE COSTS

- Disposal costs (Disposal charges, collection costs, transport costs)

HIDDEN COSTS

- Energy used to prepare and cook food
- Water used to prepare and cook food
- Cost of purchasing food that is discarded
- Labour e.g. associated with preparation and cooking of food
- Administration associated with invoicing of food supplies
- Lost profit

Setting our sights

- Corporate Plan 2019-23
- Lead Scotland to use products and resources responsibly
- Focus on responsible consumption, responsible production, maximising value from waste and energy



Pennotec

From crustacean shells to cosmetics and more.

Seafood produces its own particular type of waste. Pennotec in Edinburgh is extracting chitin from crustacean shell waste. Chitin is a sustainable natural resource that is under-used commercially but can create a strong composite material with bacteriostatic properties. It can be used in cosmetics, surgical stitches and as a food-thickening agent.





Swannay Brewery

Preventing spillage waste while feeding cows.

The Orkney brewery was losing more than 5,000 litres of beer a year during the casking process, which involved filling casks manually by hose. Installing a cask racker has saved the brewery almost £10,000 a year.

When the casks are emptied the last swills of beer are added as a nutritious extra to local cattle feed.



Jaw Brew and Aulds Bakery

**Using brewing magic to
turn bread into beer.**

Jaw Brew in Glasgow recently teamed up with Aulds Bakery to produce a low alcohol blonde beer, Hardtack, from surplus unsold morning rolls – a first for the Scottish craft beer scene.





Ogilvy Spirits

Top quality vodka from low-grade potatoes.

A few years ago, the family run Ogilvy Farm in Angus wondered what to do with their unwanted, low-grade potatoes. Now they use them to make the top quality Ogilvy Vodka at their on-site distillery.

Importance of public sector

- Direct link to consumers from birth to death
- Schools provide education
- Regulates businesses
- Facilities use valuable resources



Public Sector Activity

- Waste mapping and action planning at City of Edinburgh Council headquarters
- Smart-measurement and action plan development at City of Edinburgh Schools from 2020
- Trial with six Fife schools smart v manual measurement for 4 weeks in January 2020
- Pilot ambience measures with students in a Fife school on amounts of food eaten

Public Sector Activity

- Test changes to three tranche lunchtime eat/play times in a Dundee joint-campus school
- Flower and Food Festival waste baseline reporting to create goals for next year's event
- Support for NHSS on minimisation of single use items

Thank you.

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