



Making an impact

Dr Ramy Salemdaab, Environmental Analyst



EUROPE & SCOTLAND
European Regional Development Fund
Investing in a Smart, Sustainable and Inclusive Future

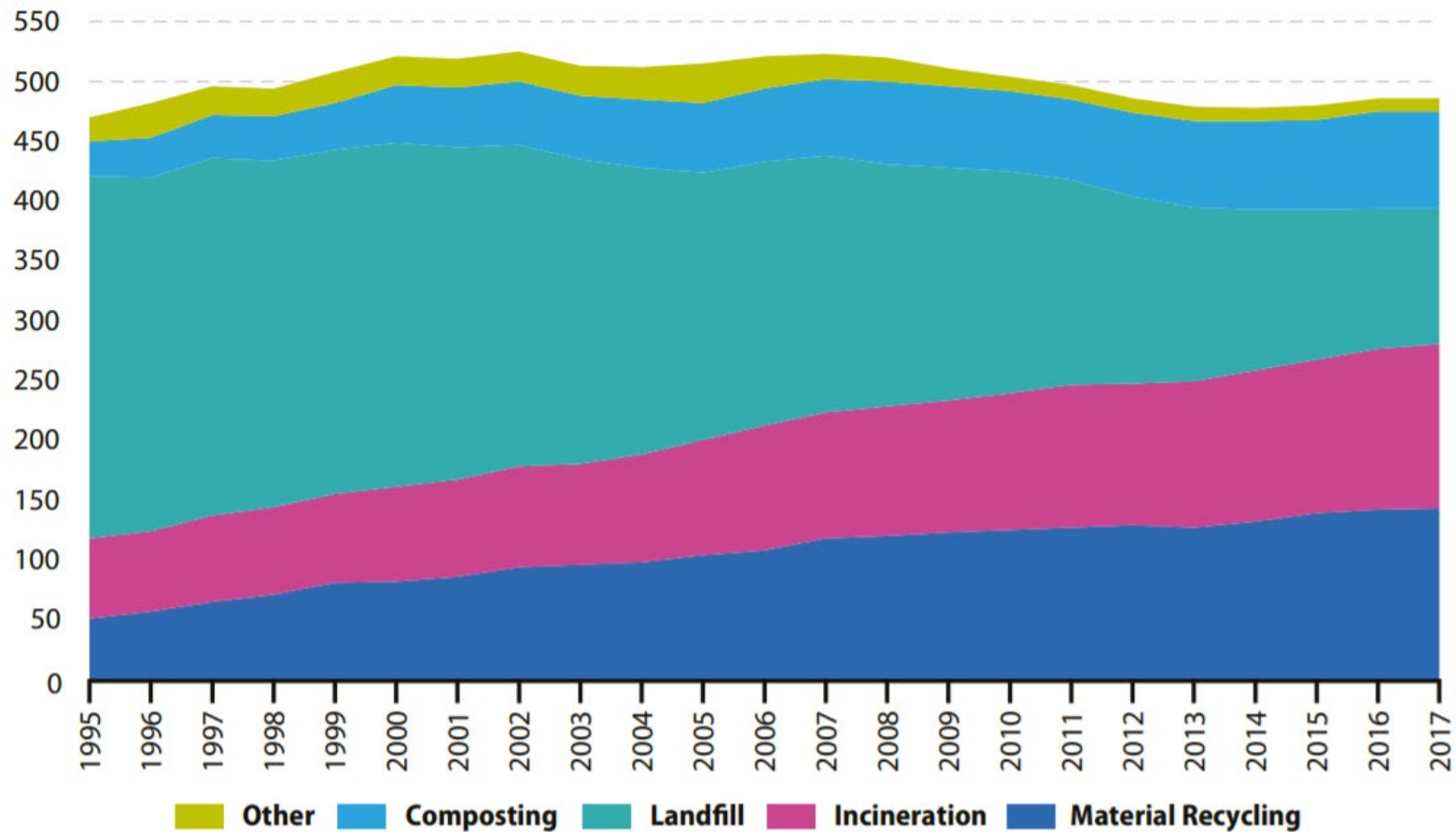


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Our journey so far!

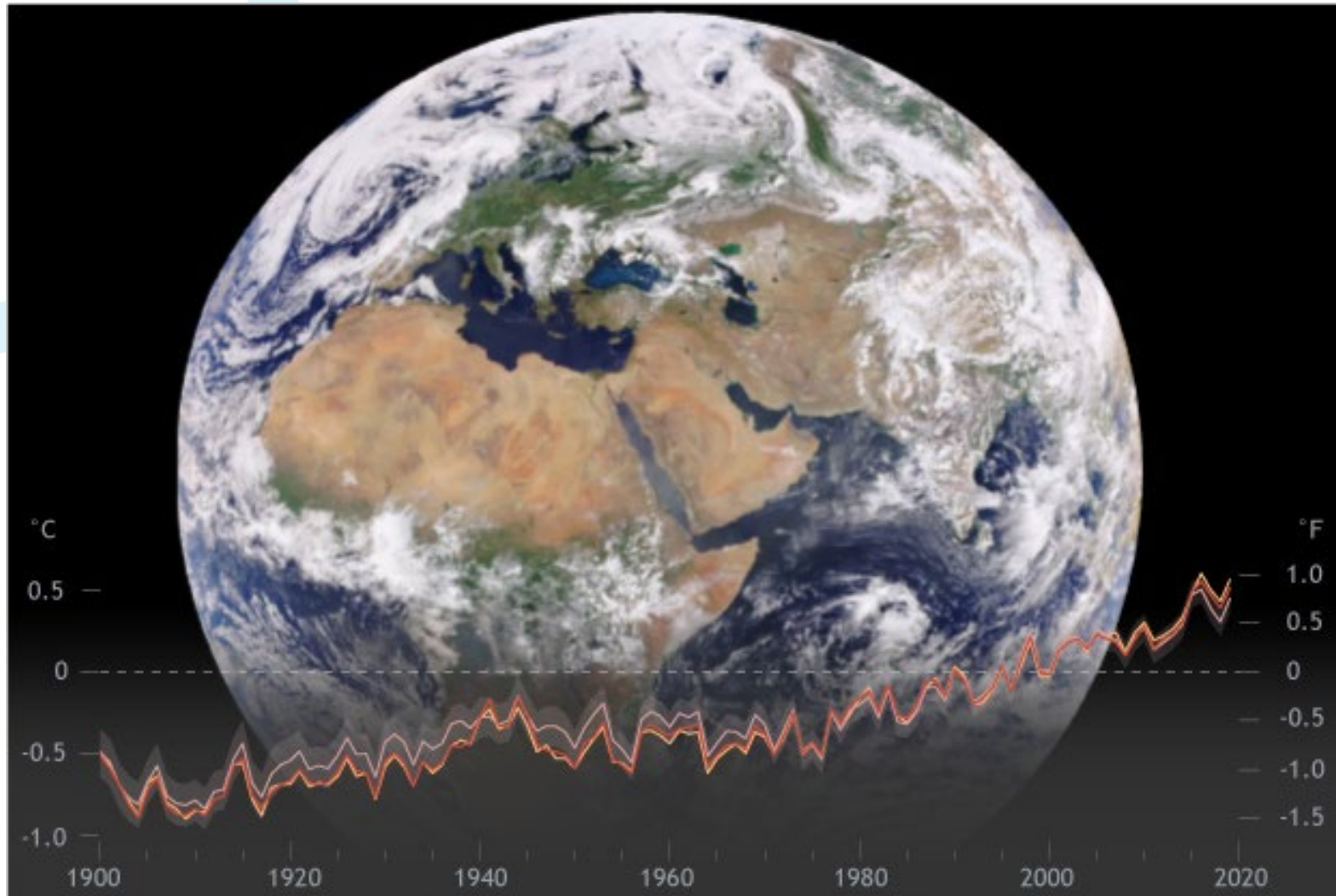


Figure 3.4.3: Municipal waste treatment, EU-28, 1995-2017
(kg per capita)



Source: Eurostat (online data code: env_wasmun))

The climate crisis



NOAA DISCOVER/EPIC
June 24, 2019

— NOAA — Univ. East Anglia (HadCRUT4) — NASA

NOAA Climate.gov
Data: SOTC 2019

From weight-based to impact-based



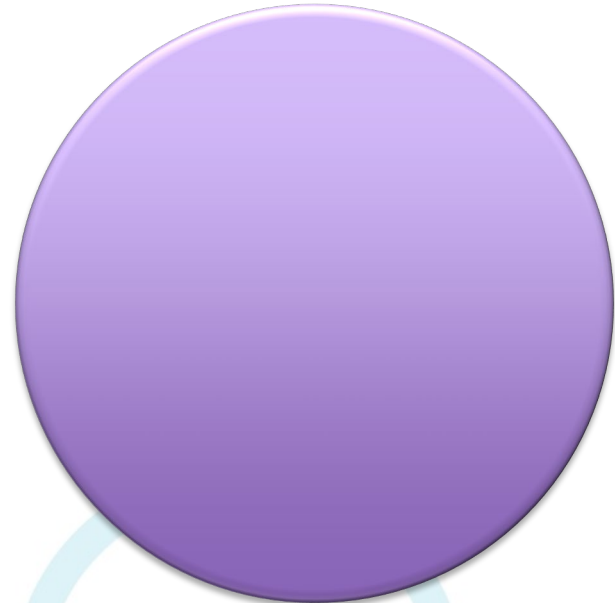
1 tonne
of glass
waste

1 tonne
of food
waste



4 kg CO₂e

Carbon impacts of landfilling
1 tonne of glass waste.



989 kg CO₂e

Carbon impacts of landfilling
1 tonne of food waste.

Carbon impacts of waste: the basics



Whole life-cycle

Upstream (embodied impacts)

Downstream (end-of-life impacts)



Resource extraction



Manufacturing



Transport & retail



Consumption



Waste collection



Recycling



Recycling benefits



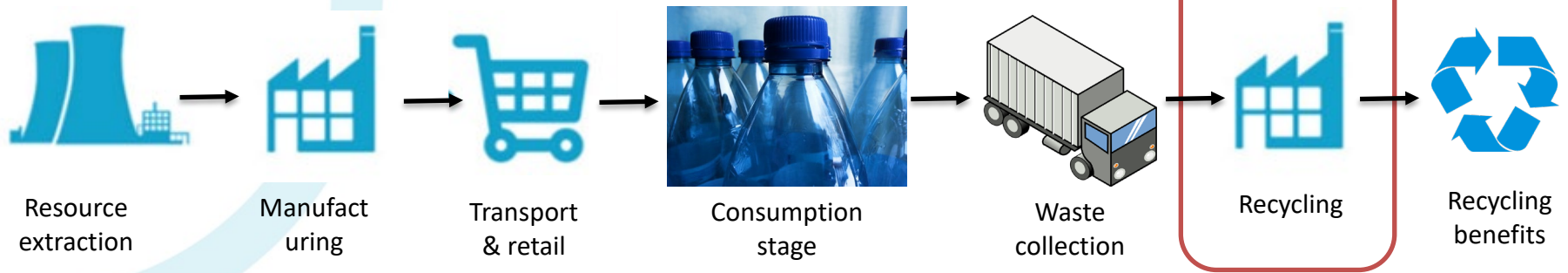
Landfill



Incineration

Carbon impacts of waste

Method 1: Carbon footprint assessment (region level)



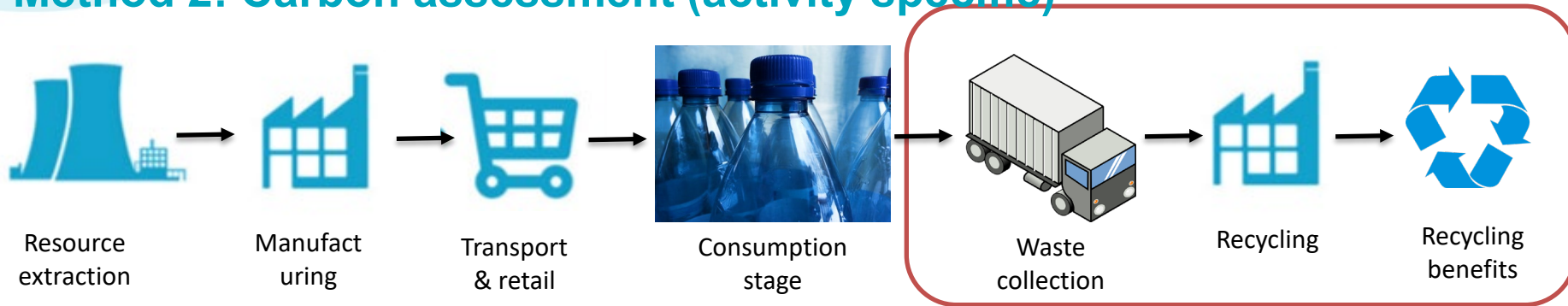
Carbon impacts of waste



Method 1: Carbon footprint assessment (region level)



Method 2: Carbon assessment (activity specific)



Carbon impacts of waste



Method 1: Carbon footprint assessment (region level)



Method 2: Carbon assessment (activity specific)

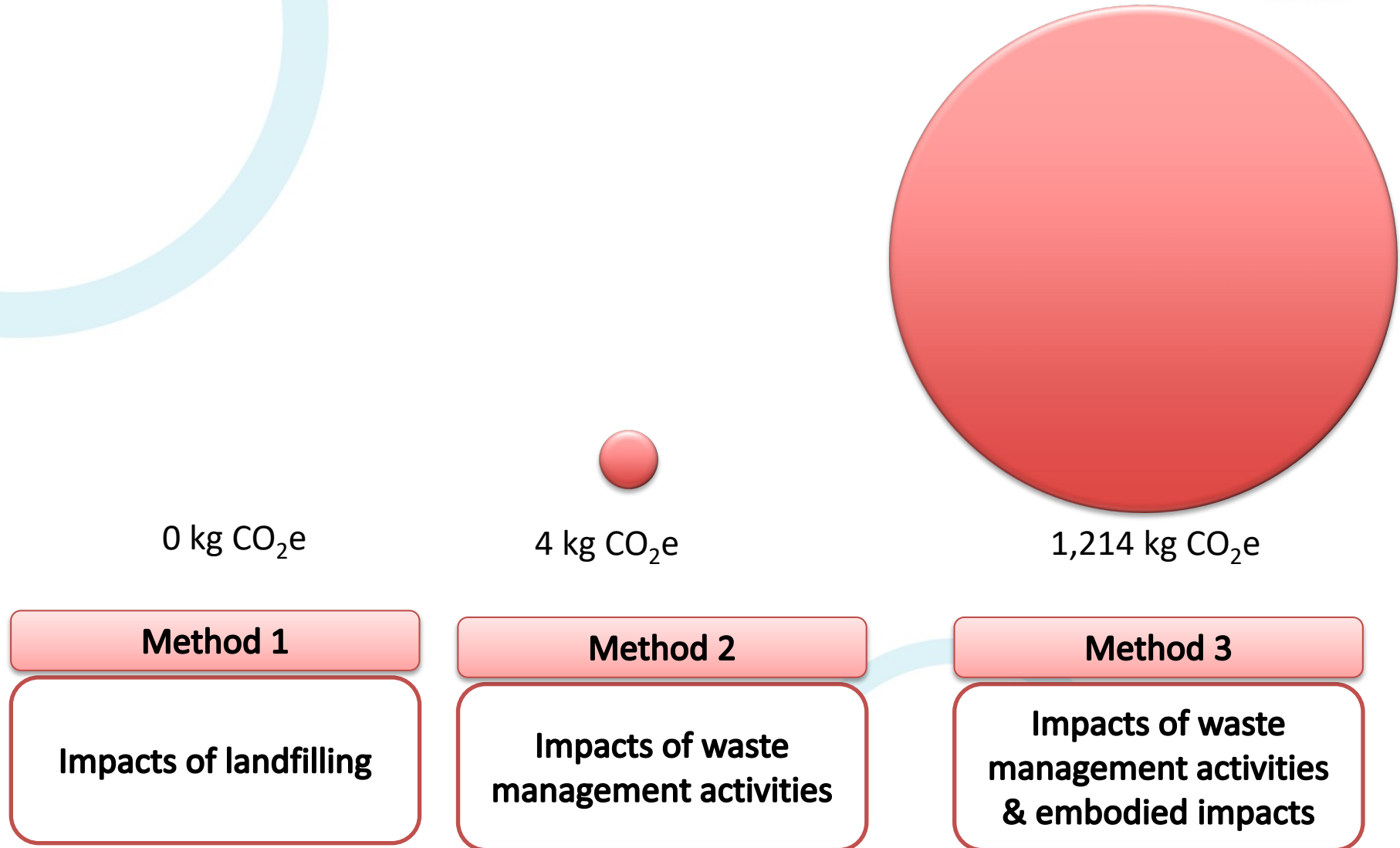


Method 3: Whole life-cycle carbon assessment (Holistic thinking)



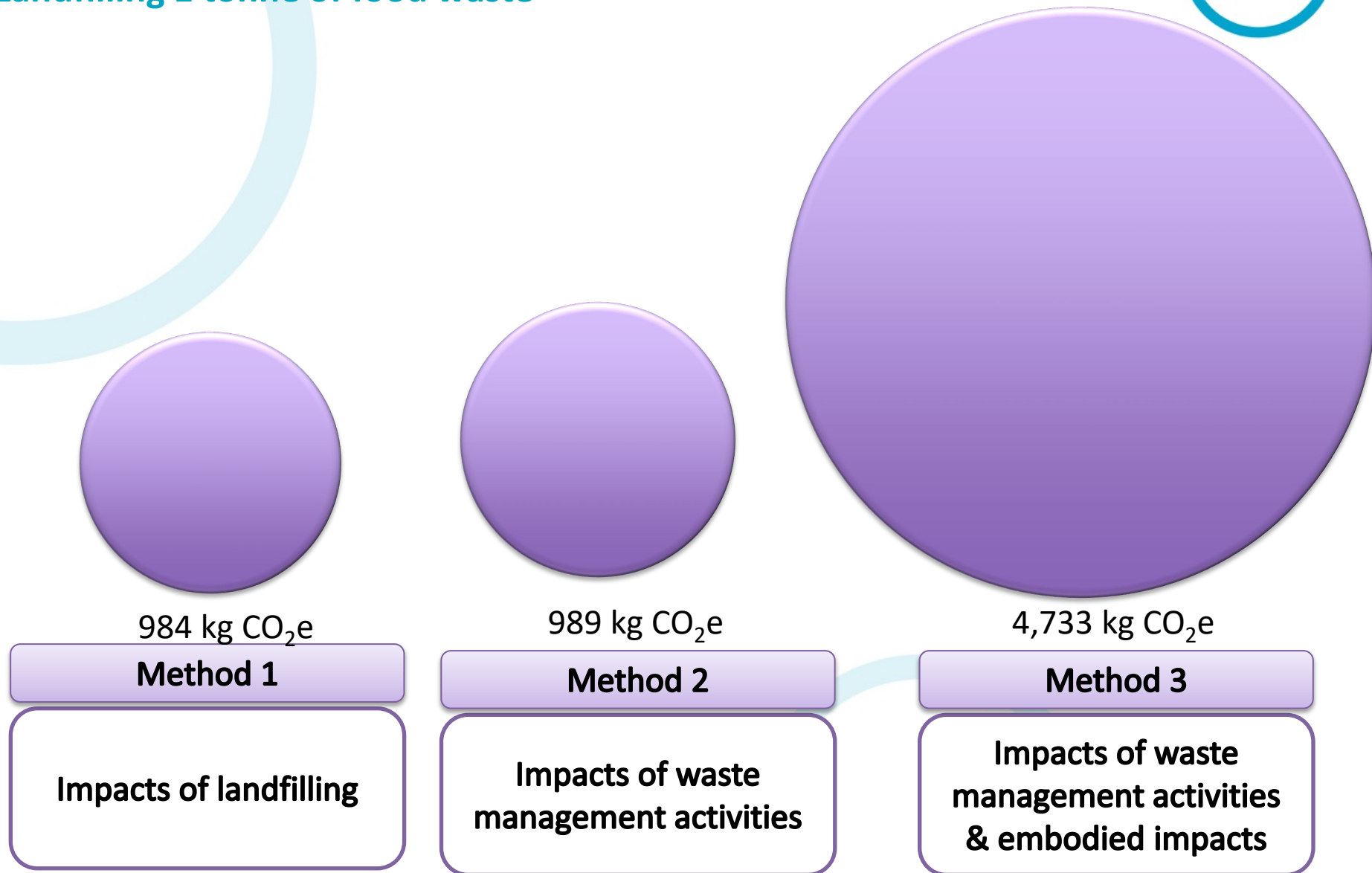
Making an impact!

Landfilling 1 tonne of glass waste

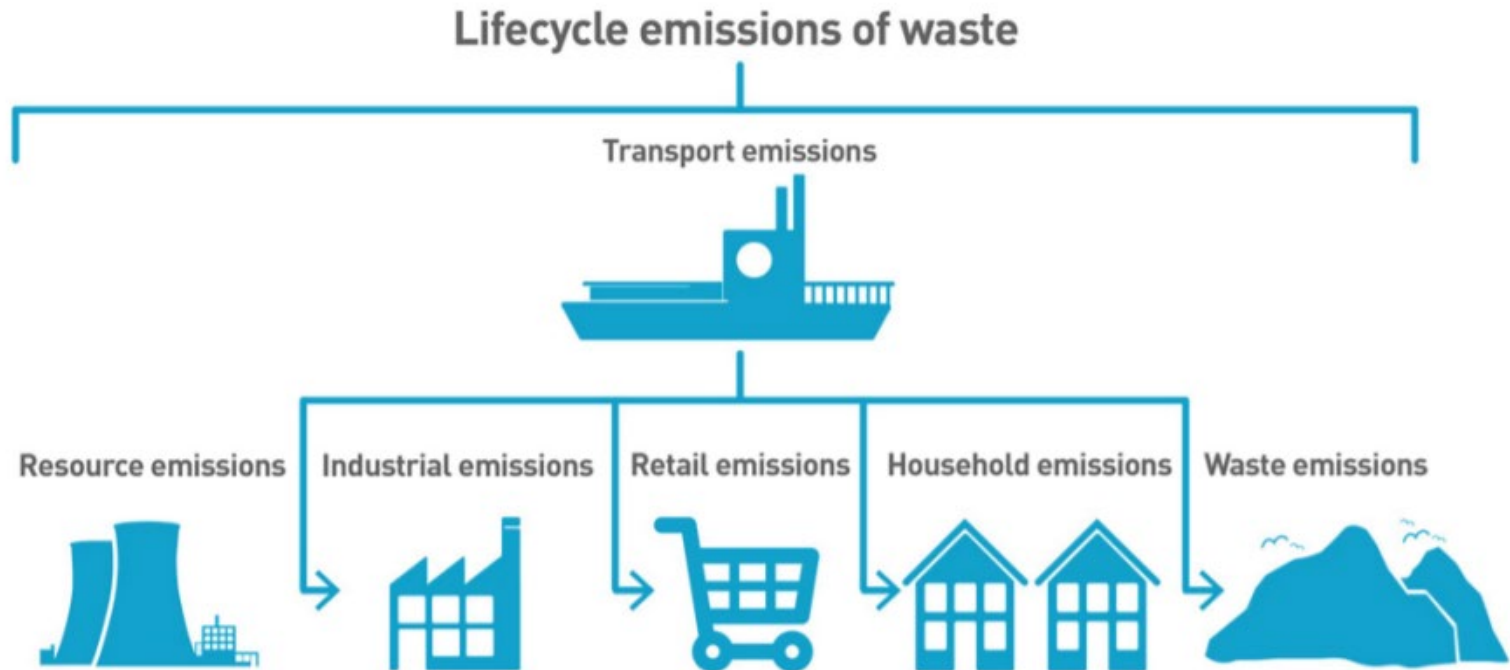


Making an impact!

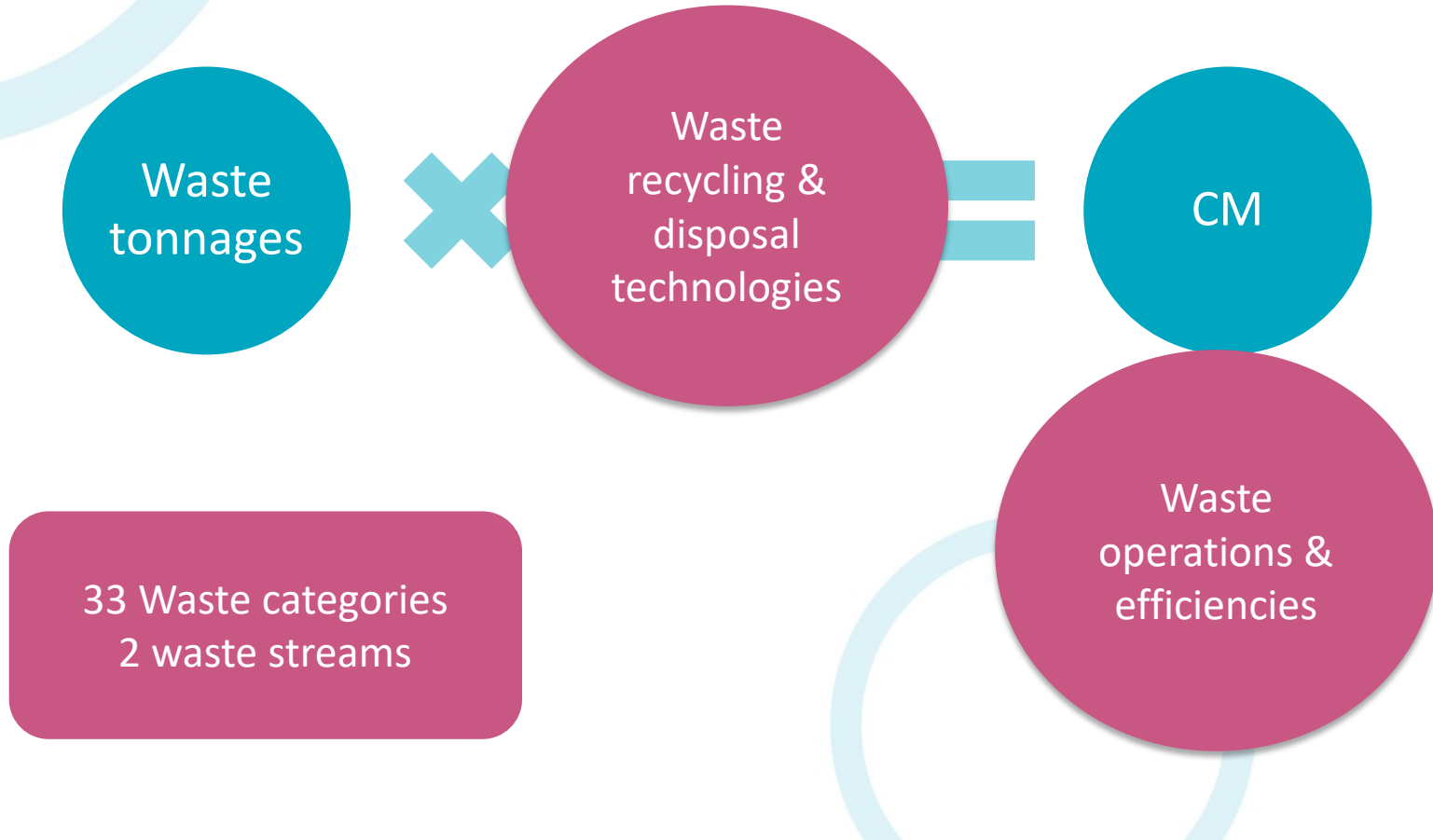
Landfilling 1 tonne of food waste



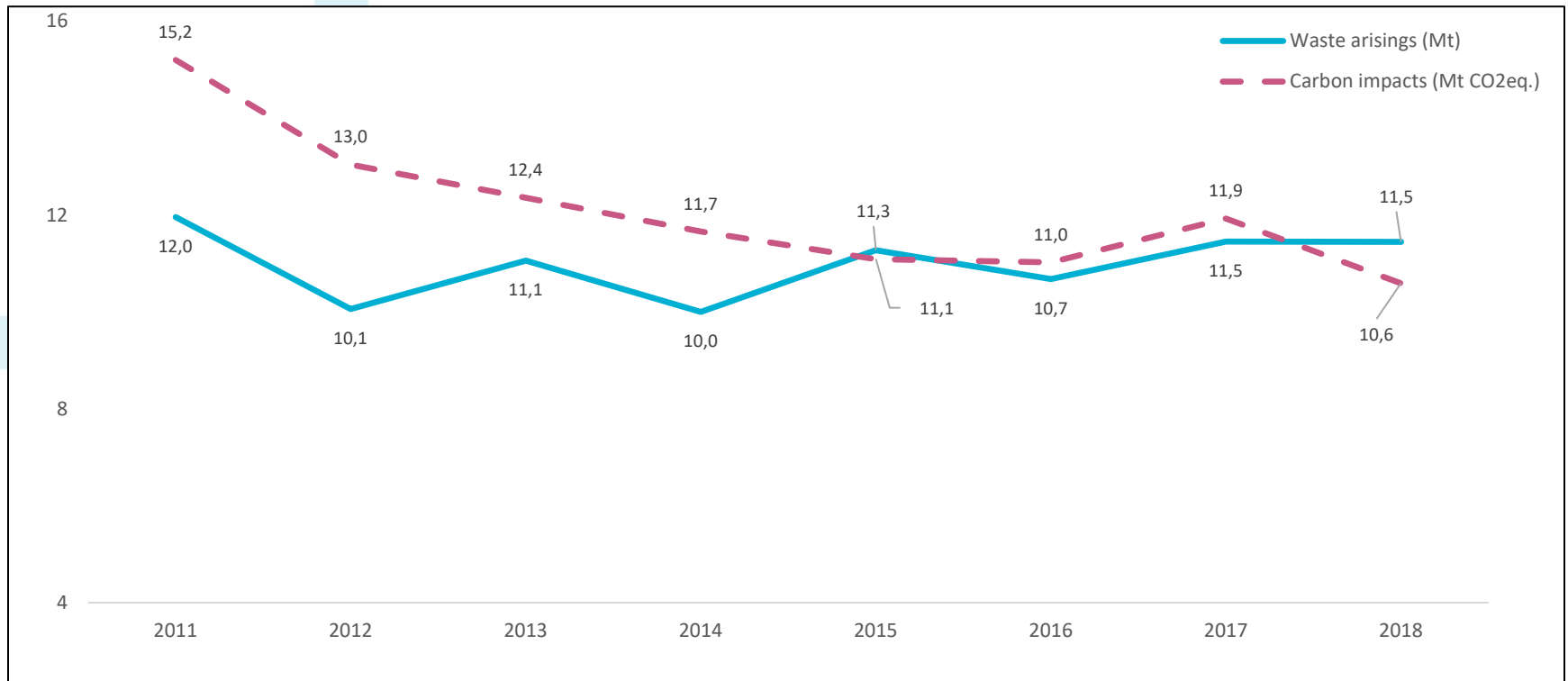
Scotland's carbon metric



Scotland's carbon metric: how does it work?



Scotland's carbon metric: key results



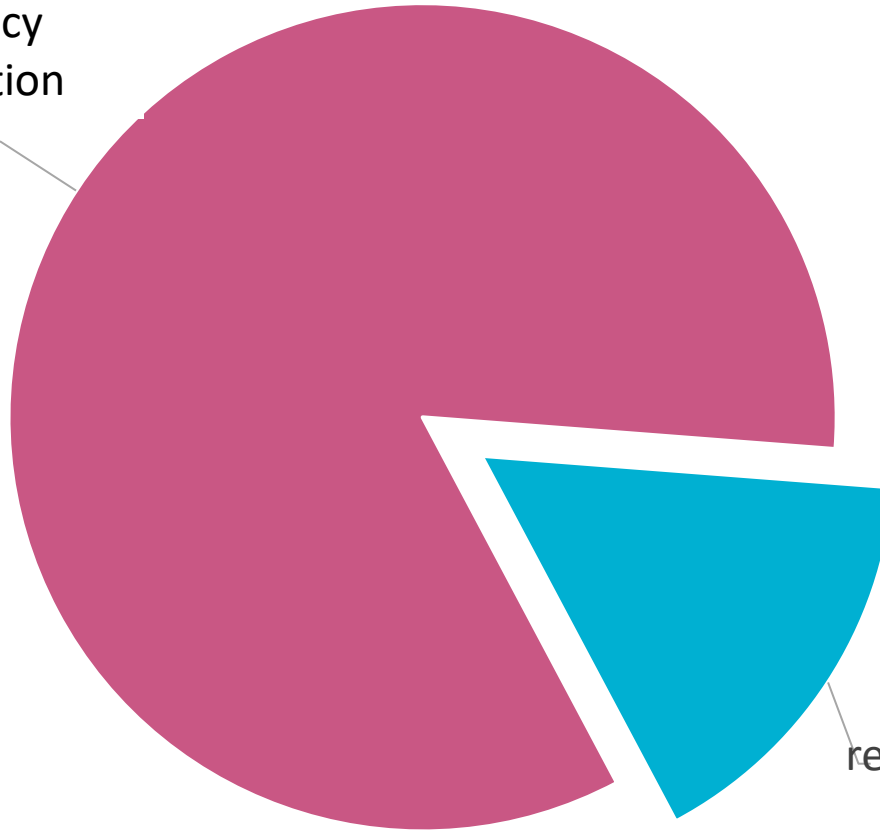
Weight versus whole-life carbon impacts of waste from all sources in Scotland.

Scotland's carbon metric: key results



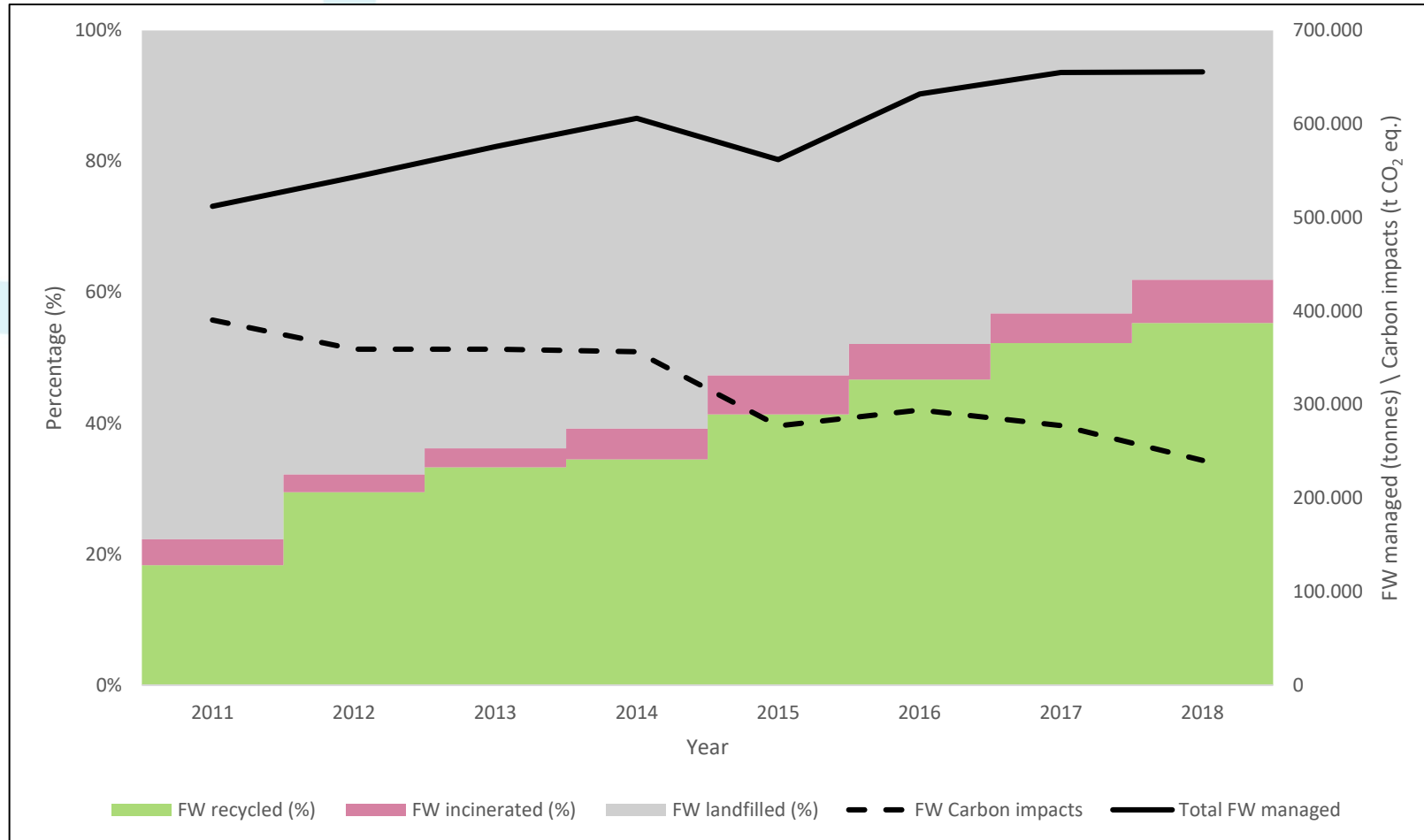
Resource efficiency
and waste reduction

84%



Improving waste
recycling and disposal
activities
16%

Scotland's carbon metric: food waste



Scotland's carbon metric: 2017/18 publication



There are several other outputs from the Carbon Metric which can be accessed on the Zero Waste Scotland website. These include:

- The Carbon Footprint of Scotland's Waste - **Summary** Report - (2017 and 2018)
- The Carbon Footprint of Scotland's Waste - **Technical** Report - (2017 and 2018)
- Zero Waste Scotland Carbon Metric Factors – Spreadsheet - (2011-2018)
- Zero Waste Scotland Total Carbon Impacts - Spreadsheet - (2011-2018)

Scan me!



[Link](#)

OUR WORK

THE LATEST...

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SEARCH

Carbon Metric Publications

Since 2011, Scotland has been measuring the lifecycle impacts of waste - demonstrating how waste reduction and sustainable waste management can play a critical role in the fight against climate change.

As Scotland continues to transition towards a more circular economy, the Carbon Metric is helping to measure our progress.

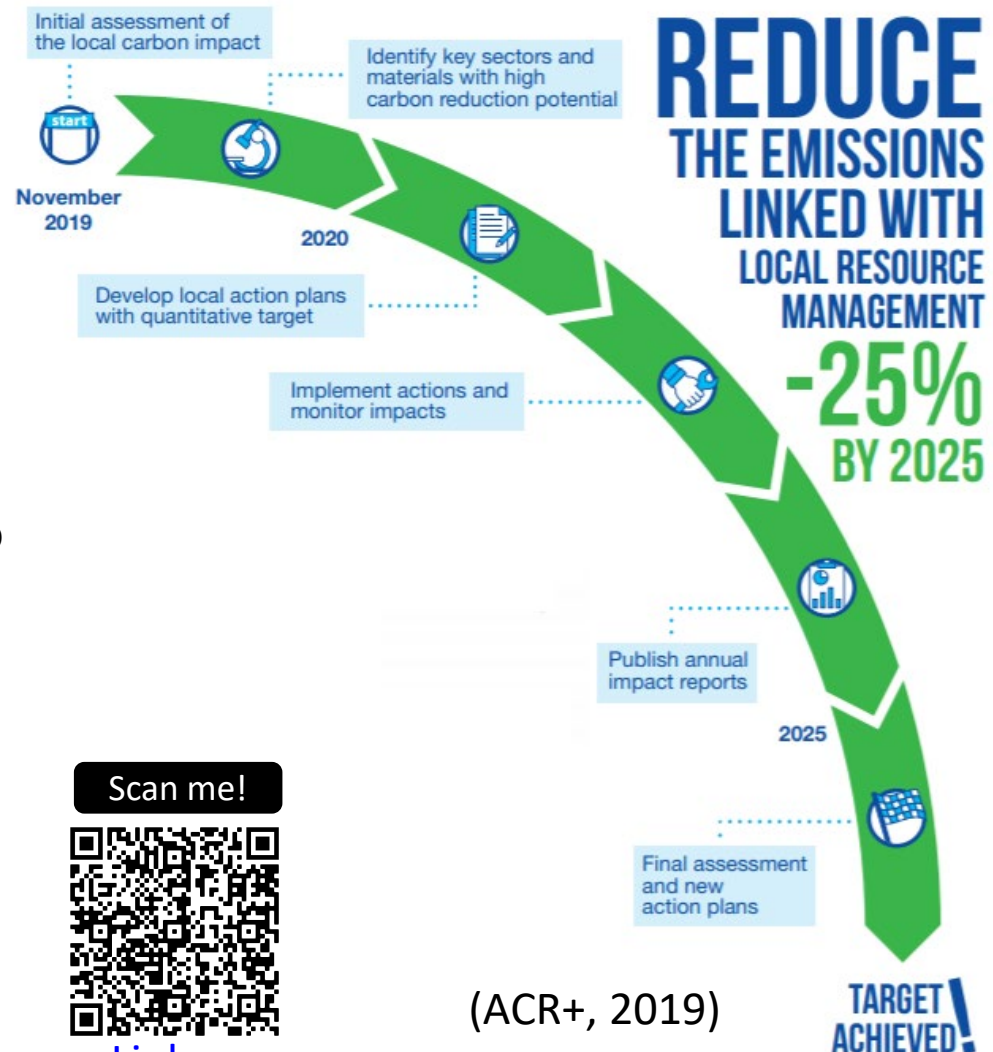
Publication	Reporting Year	Publication Date
The Carbon Footprint of Scotland's Household Waste Summary Report	2018	2019
The Carbon Footprint of Scotland's Household Waste Summary Report	2017	2018
The Carbon Footprint of Scotland's Waste Summary Report	2016	2018
The Carbon Footprint of Scotland's Waste Technical Report	2016	2018
Carbon Metric Factors Table	2016	
Carbon Metric Infographic	2016	

[The Carbon Footprint of Scotland's Waste Summary Report](#)

Carbon metric international



- Support ACR+ in the delivery of their campaign, More Circularity Less Carbon.
- ACR+ members will contribute to the global fight against climate change.
- Join us on **Wednesday 28th October** to learn more about the CM International tool and how it can be used to support you to move away from weight-based indicators.



[Link](#)

Beyond carbon ... Why now?



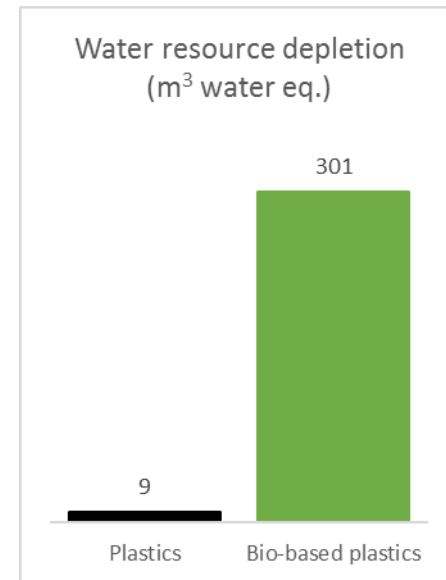
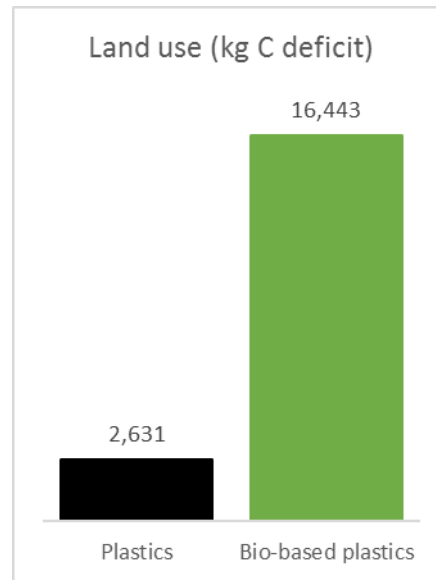
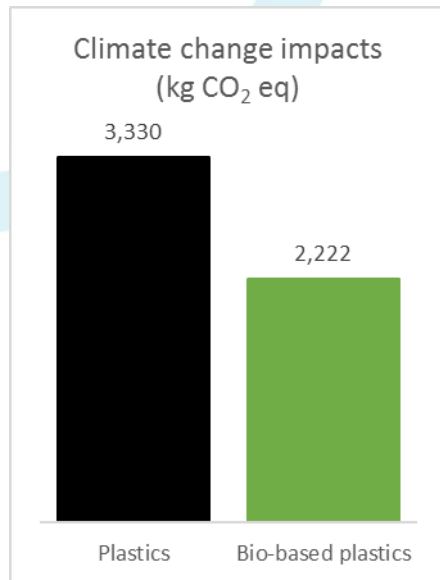
Fossil-based plastics

Vs



Bio-based plastics

fossil-based vs biobased plastics



*Note: Only virgin material is considered in this analysis. The assessment is based on 'Global Market' settings.

Beyond carbon



Making an impact

Zero Waste Scotland has developed a tool, covering new environmental indicators, that offers additional insights into the overall environmental cost of waste and materials. The organisation's Dr Ramy Saleemdeen, and Ruth Saint, of Edinburgh Napier University, explain

Scan me!



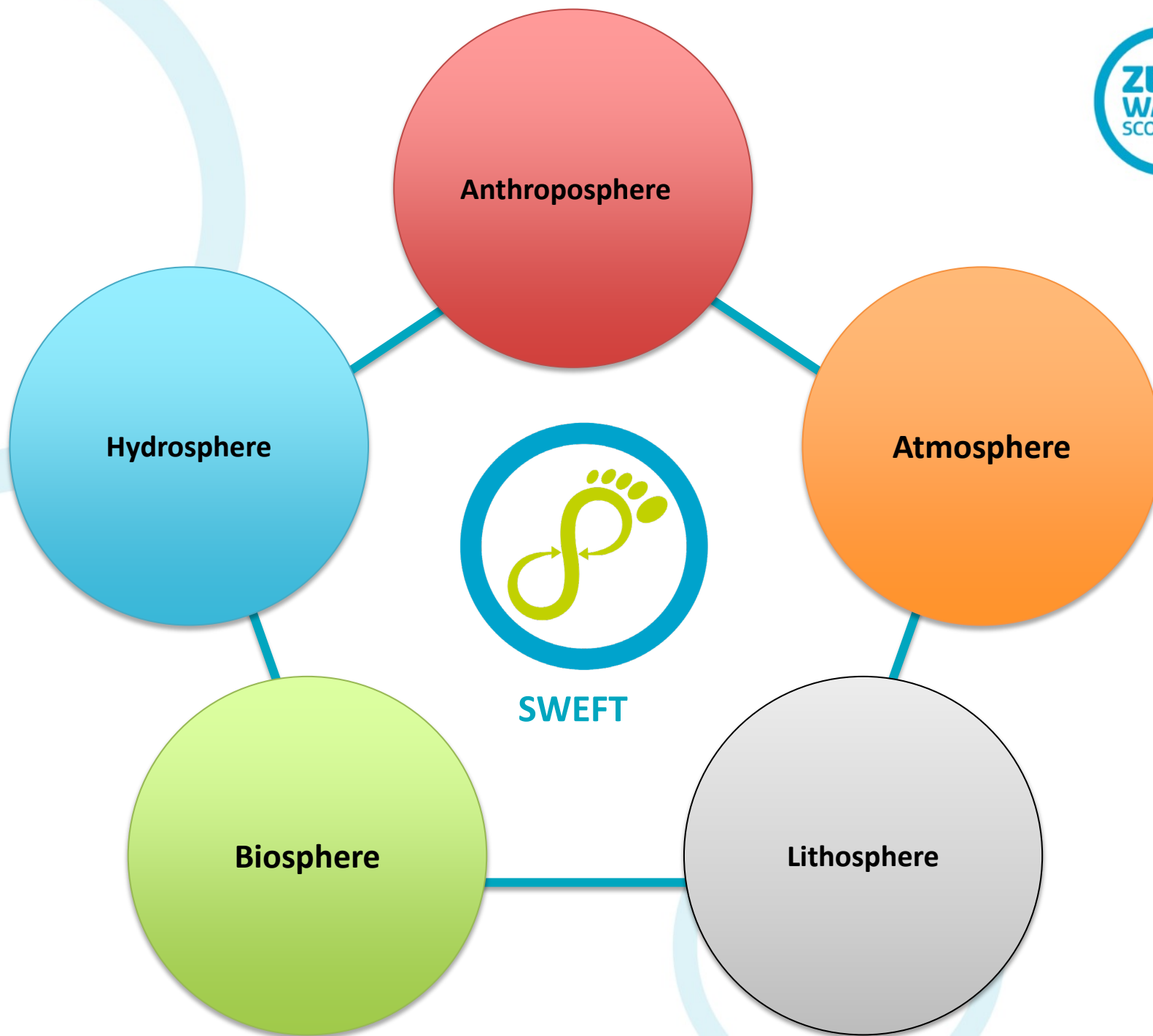
[Link](https://www.circularonline.co.uk/)

<https://www.circularonline.co.uk/>

Beyond carbon: the way forward



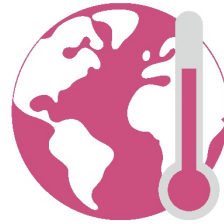
**Scottish Waste
Environmental
Footprint Tool
(SWEFT)**



Key SWEFT indicators



Climate change



Air quality



Material use



SWEFT



Land use



Water scarcity



Takeaway messages



- The resources and waste management sector has a crucial role to play in tackling the global climate crisis.
- It's imperative to consider the whole life-cycle impacts of materials if we want to move up the waste hierarchy and accelerate our transition to a circular economy.
- We live on a finite world with clearly defined boundaries so we should start thinking about the impacts of our actions on the total environment, not only climate change.



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Thank you!

Dr Ramy Salemdeeb, Environmental Analyst

Email: ramy.salemdeeb@zerowastescotland.org.uk