

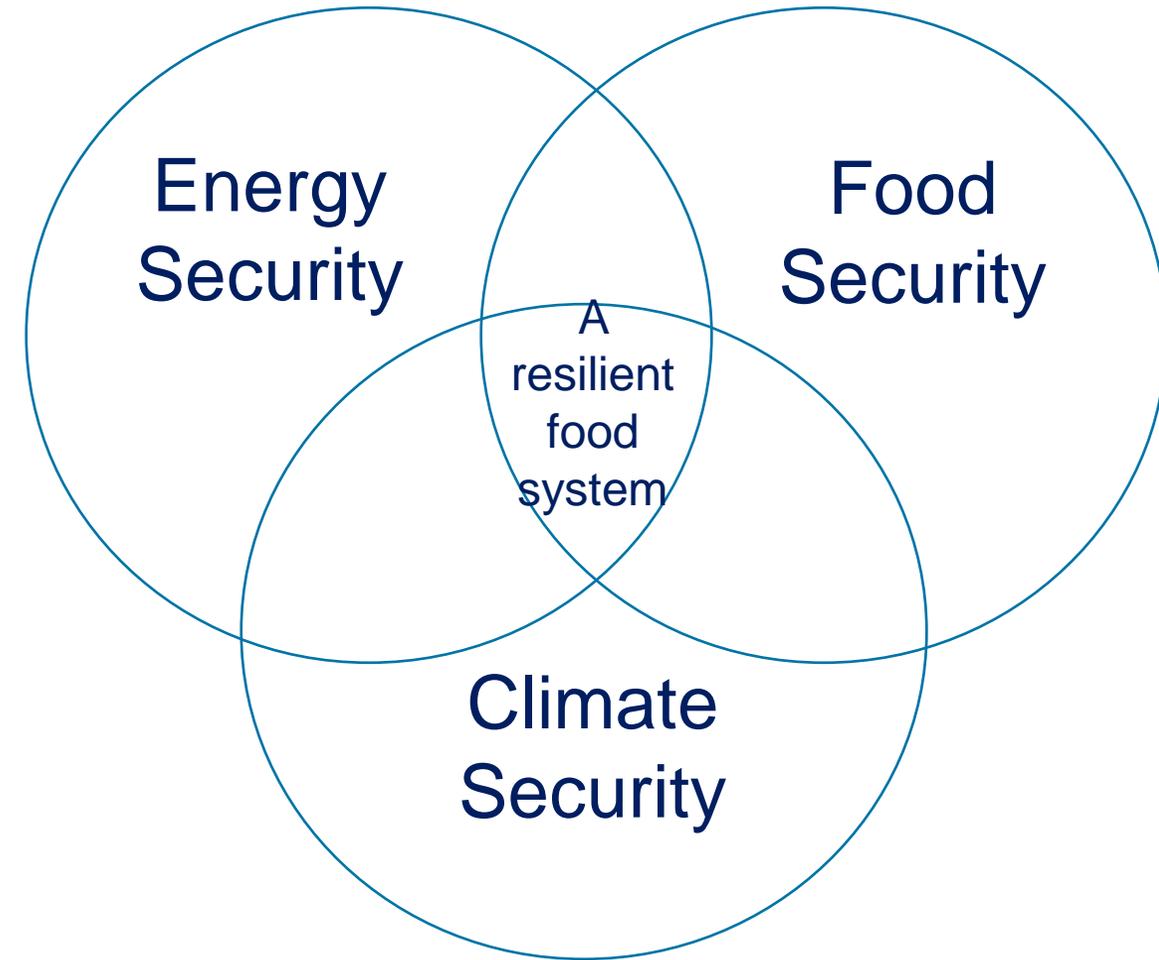
# **Next steps for food & climate policy in the UK**

**Leatherhead Research, 21<sup>st</sup> September 2022**

Emma Piercy, Head of Climate Change & Energy Policy, FDF

- Sustainability & Resiliency
- Environmental impacts
- Cost of living crisis
- FDF activities
- Farm-to-fork Net Zero Ambitions
- Examples of industry collaboration & initiatives
  - WRAP
  - Food & Drink Sector Council – Net Zero
  - Broadway Initiative / Environmental Markets

# Sustainability & Resiliency



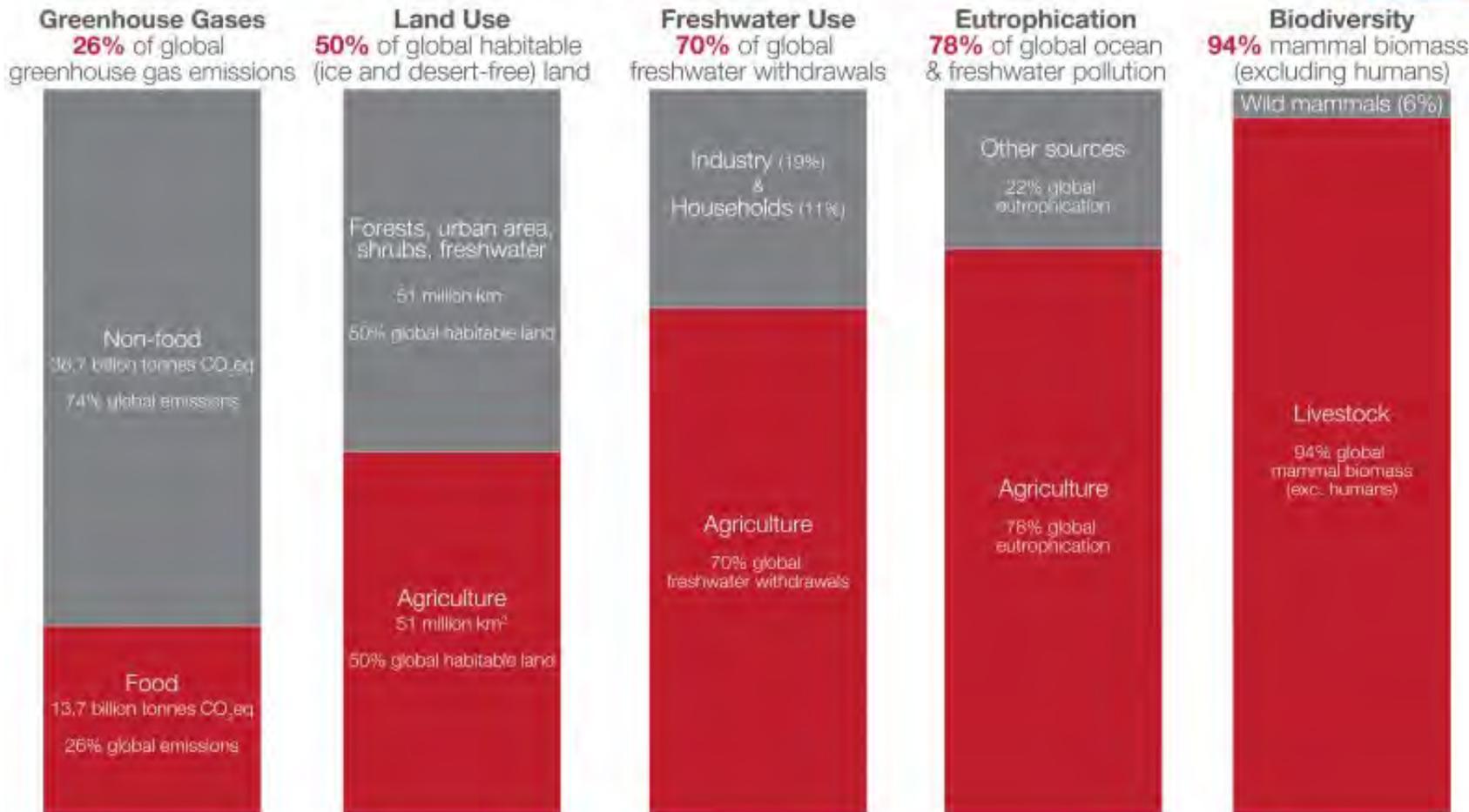
Or the 'triple bottom line' – people, planet, profit!

- Nicholas Stern – 2006 ‘Economics of Climate change’ – costs of inaction are greater than the costs of action
- DEFRA’s 2021 Food Security report – Climate Change biggest medium-term risk to UK food production
- International supply chains and water stress
- Covid and war in Ukraine are bringing societal vulnerabilities to the fore around food and fuel poverty

# Environmental Impacts

What are the environmental impacts of food and agriculture?

Our World  
in Data



- By 2050, planet of 9 billion people, → c. 50% increase in food production
- C. one third food produced is wasted
- Food production & supply chain accounts for c. 30% of global energy.
- Water withdrawals increasing for energy production

# Energy and Carbon Intensity

**UK Ingredients**  
Livestock emissions, fertiliser manufacture & use, imported animal feed, manure management, farm energy use

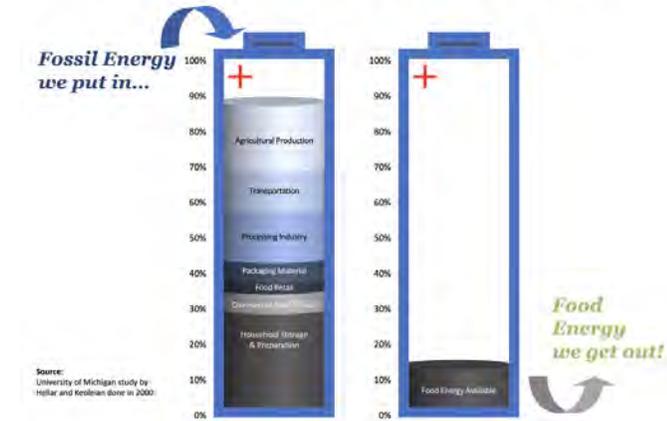


**Imports**  
Production, packaging and transport of imported ingredients and finished products

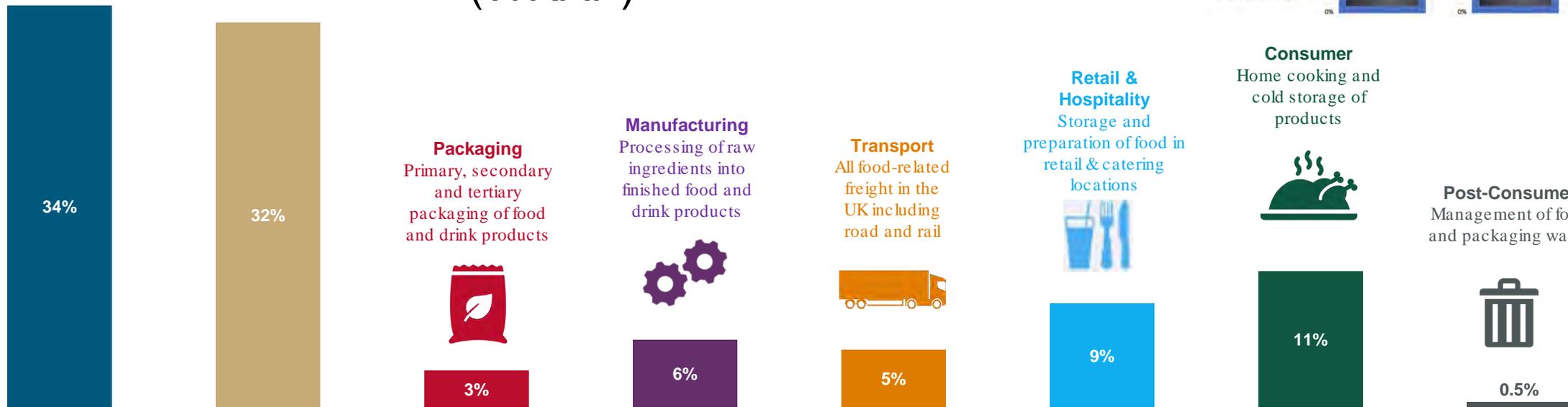


In the UK, most food waste is in the home – c. 70% of UK’s 9.5m tonnes food waste – two thirds of which could have been eaten (WRAP)

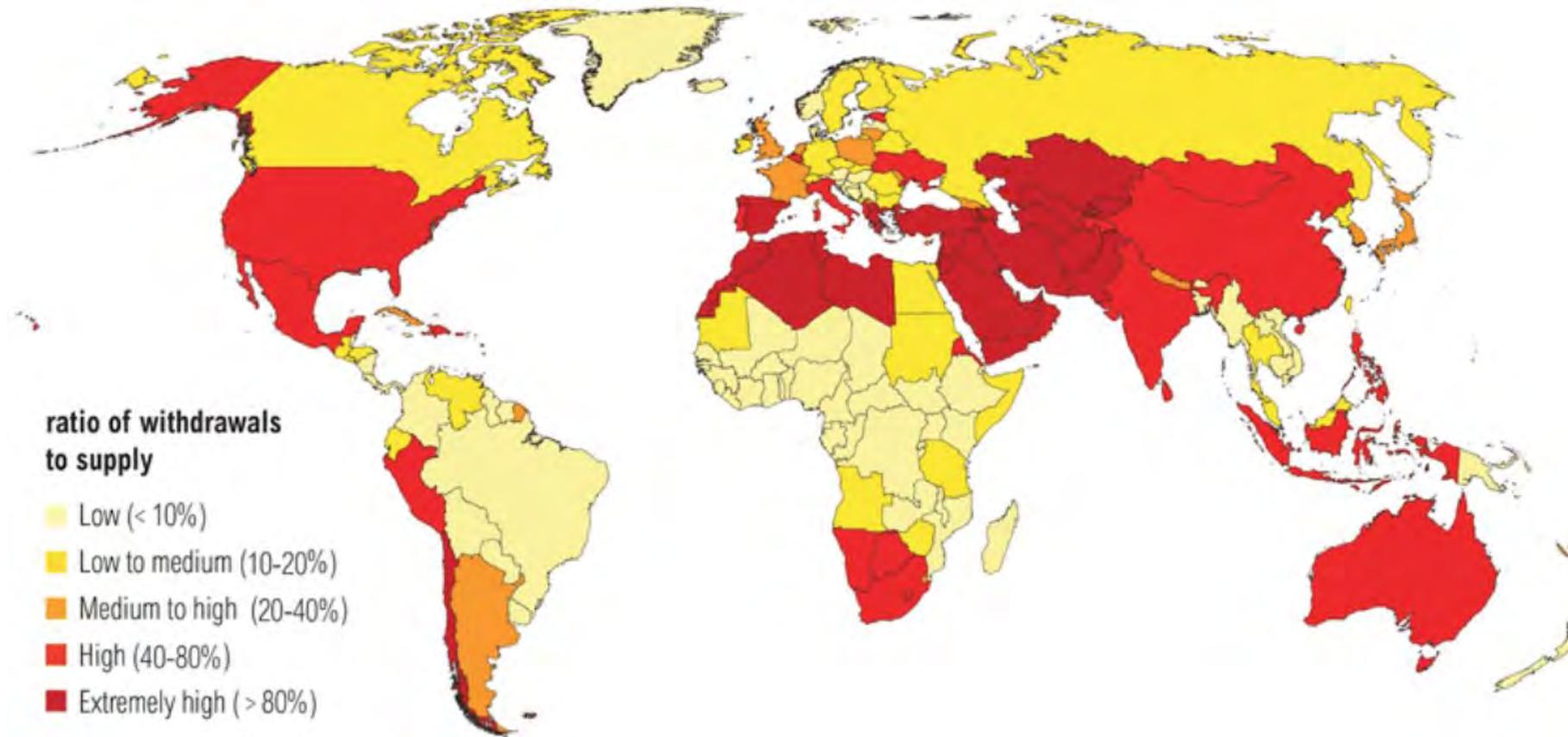
## FOOD PRODUCTION IS ENERGY INTENSIVE



% of UK Food & Drink Emissions



# Water Stress by Country in 2040



- The majority of the fruit and veg consumed in the UK comes from Southern Spain
- Southern Spain is also one of the top ten most at-risk areas in terms of water risk

Source: World Resources Institute, 2015

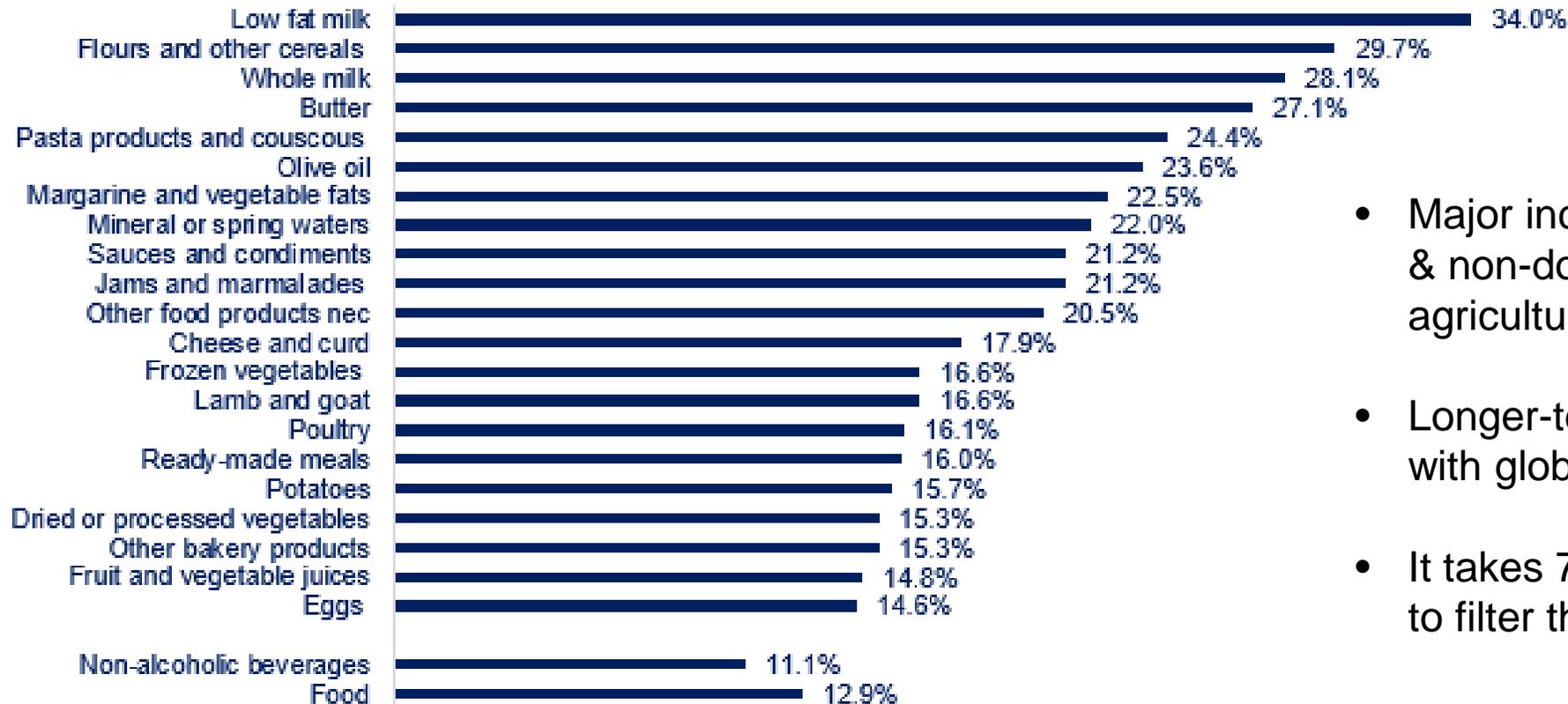
- Increasing water scarcity, future supply disruption and instability in trading conditions

- Covers listed companies and those with > 500 employees and a turnover of > £500m
- Mandate likely to expand in coming years
- Measuring and managing climate related risks & opportunities
- Impacts on a company's strategy and business model
- Organisation's targets and performance to date, and KPIs
- Getting started, data and materiality

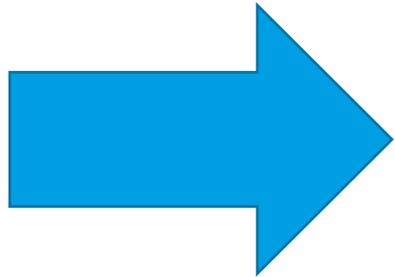
# Cost of Living Crisis

UK inflation has surpassed a 40-year high, with food and non-alcoholic drink inflation at 12.7% in July

July inflation by category, year-on-year



- Major increases in energy bills (domestic & non-domestic) – and in global agricultural commodities e.g. fertilizers
- Longer-term outlook difficult to assess with global inflation and war in Ukraine
- It takes 7-12 months for production costs to filter through to consumer prices



Sustainability increasing in importance for all and there are many questions ....

We have to act, but how?

# Achieving Net Zero: A Handbook For The Food And Drink Sector

Practical guidance for food and drink manufacturers to achieve Net Zero emissions



Launch of Net Zero by 2040 Ambition – [link here](#) in April 2021 and of our [Roadmap Handbook](#) at COP26

Chapter	Page
1. Introduction.....	04
2. Planning for Net Zero .....	09
3. Ingredients.....	12
4. Packaging.....	24
5. Manufacturing.....	32
6. Distribution & storage.....	49
7. Customers & consumers .....	55
8. Carbon offsetting.....	63
9. Summary of actions .....	66
10. References .....	69

## About this Handbook

This Handbook provides guidance for food and drink manufacturers seeking to play their role in achieving Net Zero emissions. It has been released alongside the Roadmap for Net Zero Overview which summarises the business case for climate action, and is aimed at wider stakeholders.

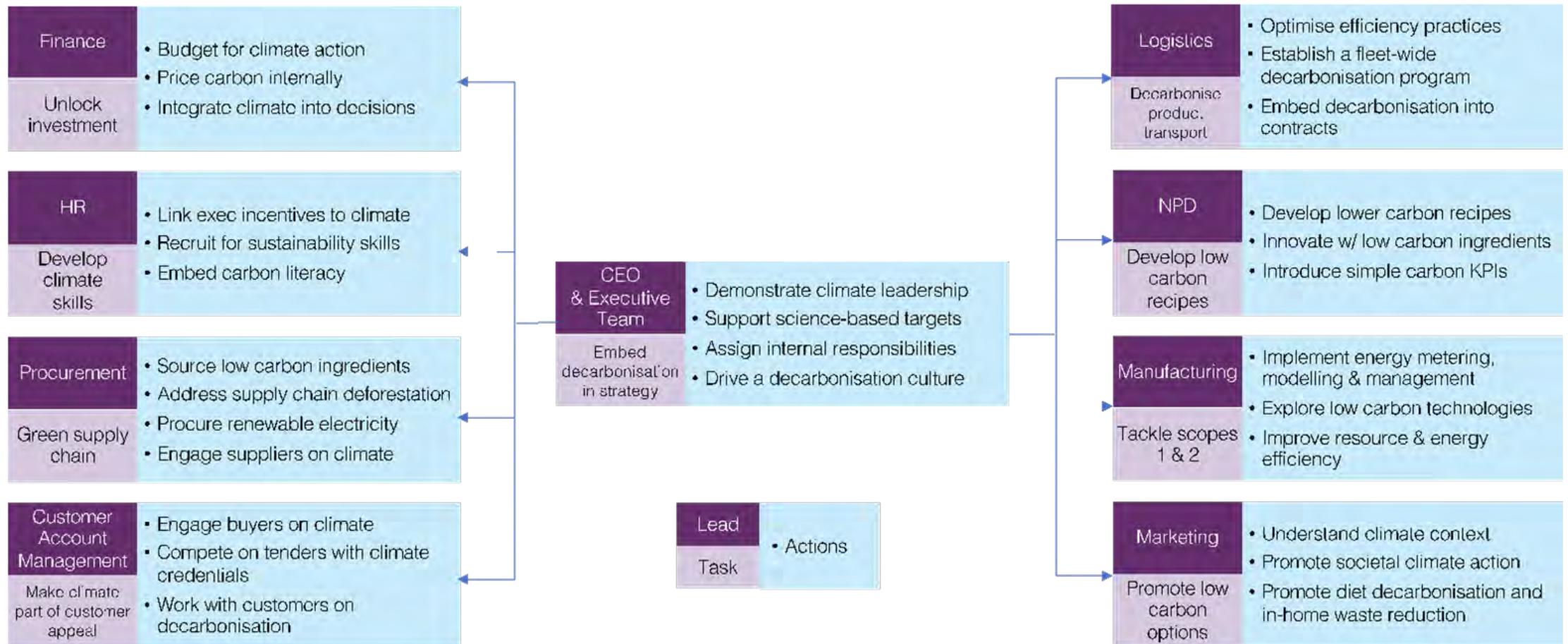
The Handbook has been designed to help all food and drink manufacturers, but particularly those at the early stages of developing their climate strategy.

The core of this handbook on value chain stages presents **practical actions** and information for each stage of the chain from farm to fork. Supporting information for each stage provides the context for action, and signposting to useful further resources available online.

- Chapter 2 covers the strategic framework for the actions.
- Chapters 3, 4, 6 & 7 cover upstream and downstream parts of your value chain with 3 key actions for each area.
- Chapter 5 on manufacturing has a larger number of more detailed actions, as you are likely to have most control over emissions.
- Chapter 8 provides advice on how to use carbon offsets.

# PLANNING FOR NET ZERO INTERNAL ACCOUNTABILITIES

**Achieving Net Zero requires commitments and contributions from across the organisation.** The requirements for Net Zero are often viewed as “technical challenges”, but to be successful, transformation must take place throughout the business and be supported by all staff and employees. This change must be led from the top, and become embedded across the whole organisation - clear internal accountabilities are essential. The chart below shows different functions common to many manufacturers. For each role, the primary task and supporting actions are presented, indicating the importance of colleagues across your organisation.



# SUMMARY OF ACTIONS



## Carbon offsets

Carbon offsets can compensate for unavoidable emissions in the value chain, once all feasible emissions reduction actions have been implemented. Companies should only use high-quality offsets certified by an independent scheme.



## Ingredients & imports\*

- Understand your ingredient emissions
- Procure lower carbon ingredients
- Reformulate products to reduce emissions



## Packaging

- Assign internal responsibility for packaging emissions
- Set company policy on packaging sustainability
- Engage packaging suppliers to find low carbon options



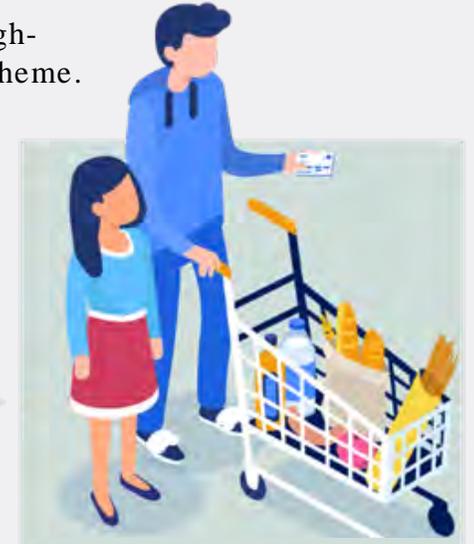
## Manufacturing

- Improve energy efficiency
- Decarbonise electricity
- Decarbonise process heat
- Shift to sustainable refrigerants



## Distribution & Storage

- Embed climate performance into logistics services
- Shift to electric vehicles for light goods vehicles
- Optimise your HGVs

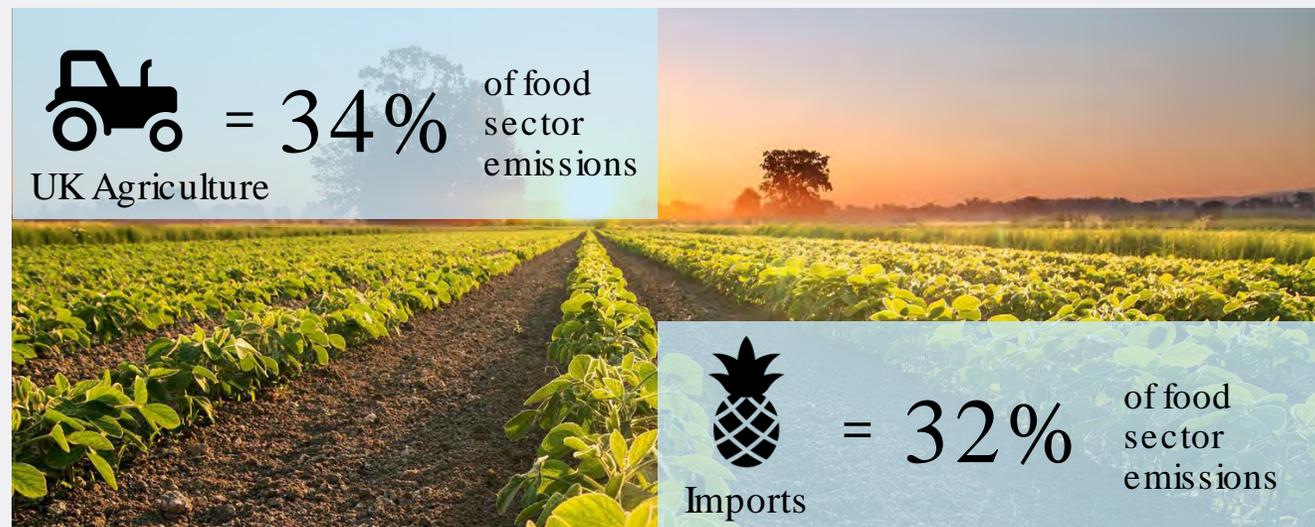


## Customers & Consumers

- Understand customer expectations on climate
- Capitalise on growing demand for lower carbon products
- Engage consumers on climate issues and waste reduction

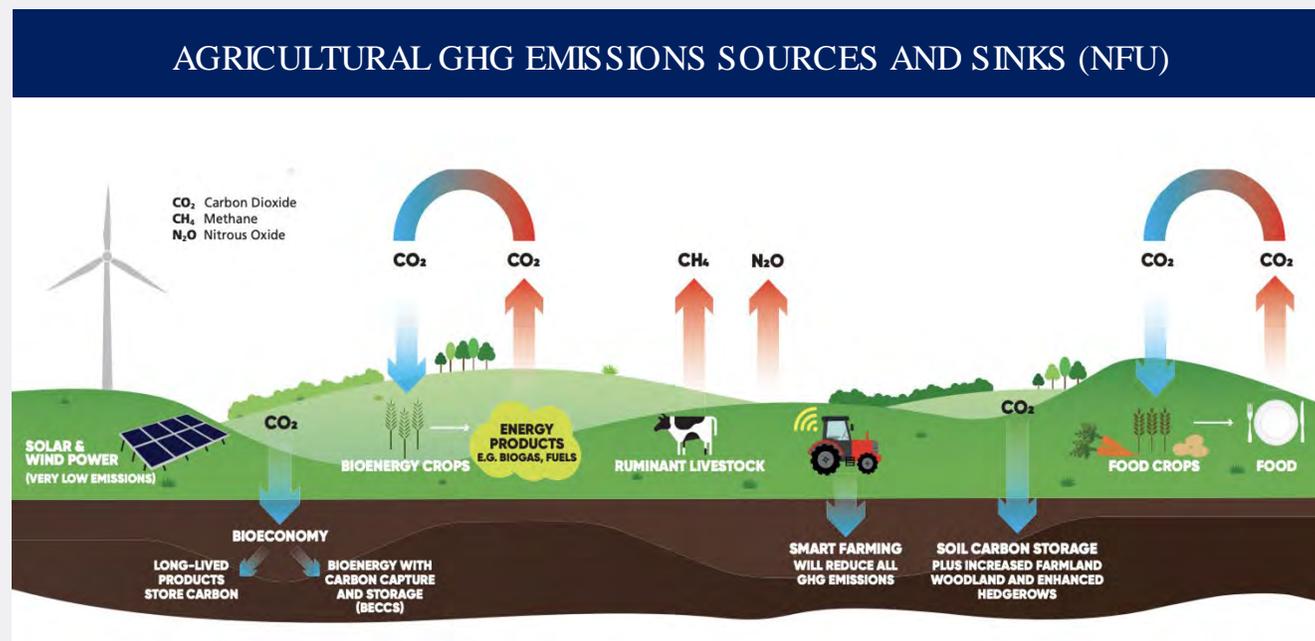
## Section contents

1. Actions
2. UK emissions
3. Overseas emissions
4. Role of farmers
5. Sourcing lower carbon
6. Tackling deforestation
7. Reducing food waste
8. Case studies
9. Initiatives and policies
10. Further information



## Ingredients: A key focus area for emissions reduction

- Ingredients and imports are the largest (66%) source of emissions in the UK food and drink sector.
- Measurement of emissions from ingredients includes agricultural inputs such as fertiliser and feed for livestock, as well as energy for processing.
- The sources of greenhouse gases from agricultural production are increasingly well understood. There is a range of farming techniques that can minimise emissions from different production systems.
- One key source of emissions is deforestation and other changes in land use. These must be identified and tackled as a priority.



## Section contents

1. Actions
2. Customer commitments
3. Dietary choices
4. Waste reduction
5. Case studies
6. Further information



## Customers: retail and hospitality

- Retail and hospitality contributes 9% of emissions from the food & drink supply chain. These emissions relate to cooking, space heating, lighting, refrigeration and food waste.
- All major UK supermarkets aim to achieve Net Zero Scope 1 & 2 emissions by 2040 at the latest. Most also aim to reduce emissions from purchased goods - Scope 3.
- Retailer supporters of [BRC Climate Action Roadmap](#) have committed to Net Zero emissions for Scope 2 (electricity) by 2030, Scope 1 by 2035, and Scope 3 by 2040.



Retail and  
hospitality

= 9%

of food  
sector  
emissions



Consumers

= 11%

of food  
sector  
emissions

## Consumers: facilitating change

- Consumer emissions are from household refrigeration, food preparation and cooking and even transport to stores.
- Food and beverage waste in the home is a major source of emissions, owing to the 'embodied emissions' in uneaten items.
- There is high demand for low carbon consumer lifestyles, with 88% of customers wanting brands to help them live sustainably
- Facilitating sustainable lifestyles requires clear and transparent communication of information, to promote informed choices. It also means offering more sustainable products to help consumers reduce their emissions.

## Section contents

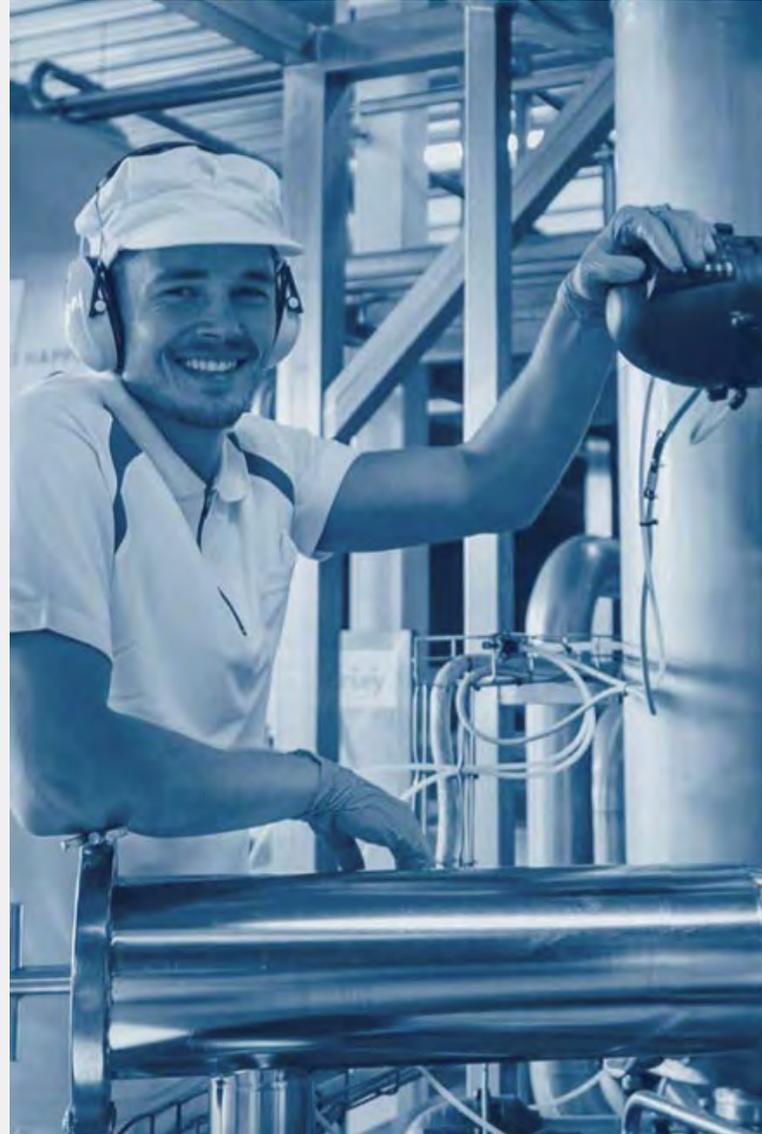
1. Emissions
2. Improving energy efficiency
3. Decarbonising electricity
4. Decarbonising process heat
  - a. Electrification
  - b. Low-carbon fuels
5. Shifting to sustainable refrigerants
6. Initiatives and policies
7. Further information



Manufacturing

= 6%

of food sector emissions

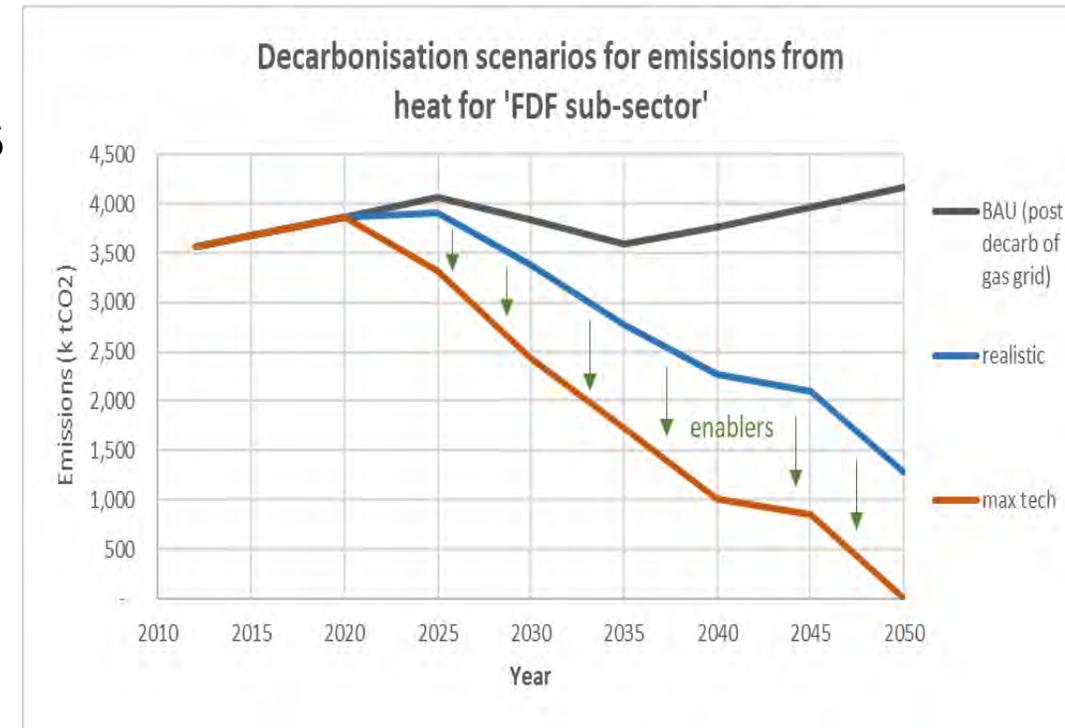


## Manufacturing - emissions under direct control

- For food and drink manufacturers, emissions from manufacturing are the main source of Scope 1 & 2 emissions.
- For producers of a few food products, such as beet sugar, manufacturing is the largest source of emissions.
- Decarbonising manufacturing requires action across operations, including new heating technologies and improvements to processes and efficiency.
- For many companies, improving energy efficiency and switching to renewable electricity could be the most significant short-term actions to reduce emissions.

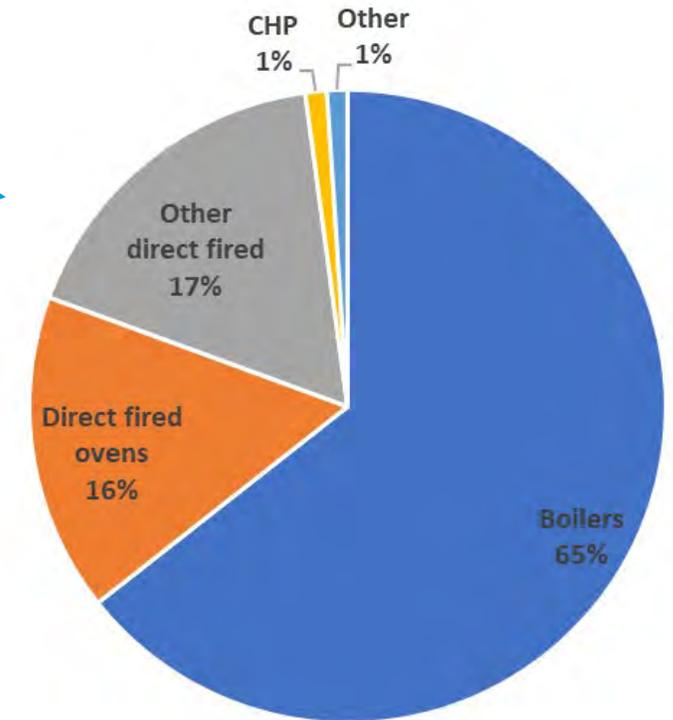
# FDF / SLR Report: June 2020

- FDF / SLR report on decarbonising heat, published 10<sup>th</sup> June 2020: [Final report](#)
- How the sector can decarbonise towards net zero by 2050, and
- Identify what actions are needed to enable the transition.
- Decarbonisation options, barriers and enablers, report recommendations (collaboration, policy development, finance)



# Options to Decarbonise Heat

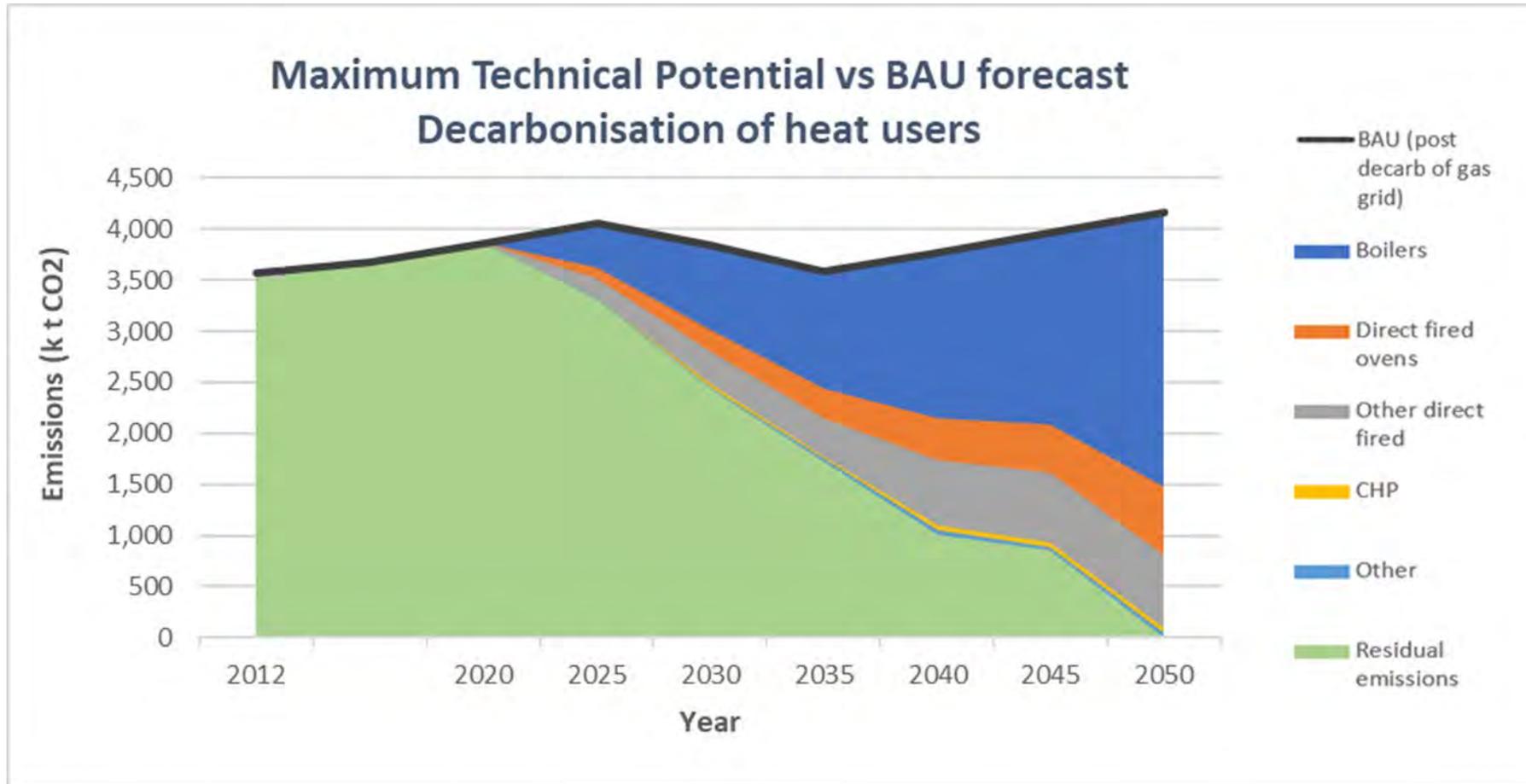
Research undertaken by FDF in 2012 and 2020 identified the equipment and processes that generate and use heat: over 80% comes from boilers and direct fired ovens.



	2020	2025	2030	2035	2040	2045	2050
Boilers	Low carbon fuels: renewables. Electrification (boilers or indirect heat users)			Low carbon fuels for boilers: fully decarbonised gas, hydrogen, renewables. Electrification (boilers or indirect heat users)			
Direct fired ovens	Electrification		Renewables, Electrification	Low carbon fuels: fully decarbonised gas, hydrogen, renewables. Electrification			
Other direct fired	Electrification		Renewables, Electrification	Low carbon fuels: fully decarbonised gas, hydrogen, renewables. Electrification			
CHP	Renewables, Electrification (indirect heat users)			Low carbon fuels: fully decarbonised gas, hydrogen, renewables.			
Other	Electrification		Renewables, Electrification	Low carbon fuels: fully decarbonised gas, hydrogen, renewables. Electrification			

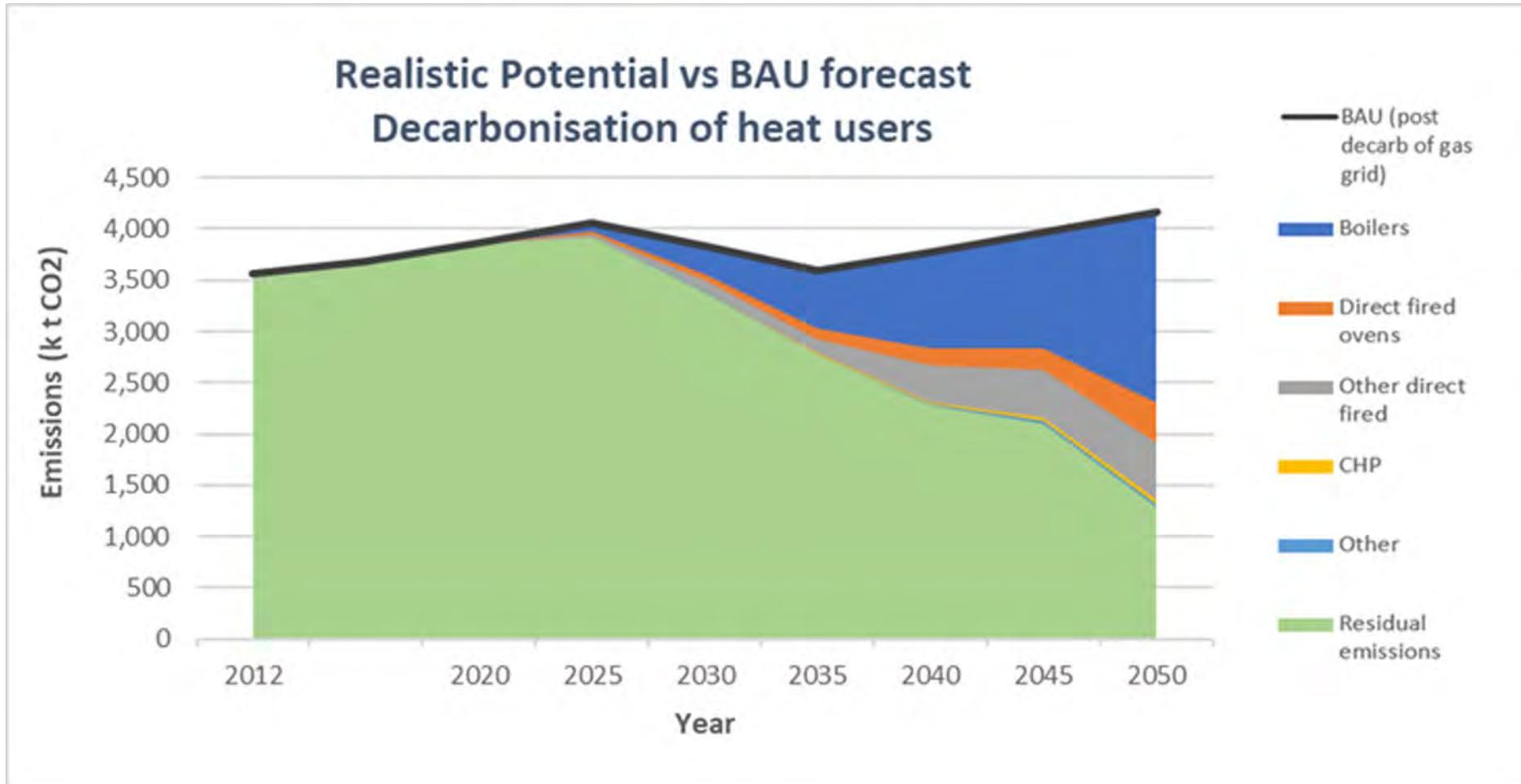
There are a number of technological options for decarbonising heat use from direct and indirect fired users

# Maximum Technical Potential



The maximum technical potential scenario assumes that when any equipment at the end of its life it is replaced with a lower carbon alternative, i.e., the uptake of the decarbonisation measures is 100%

# Realistic Potential



The realistic decarbonisation potential applies the barriers identified whereby only a proportion of equipment at the end of its life is replaced with a lower carbon solution

# How to Achieve 'Maxtech'?

Establishing 'enablers' to address the barriers below will help move the 'realistic' emissions reduction scenario to move towards the 'maxtech' scenario.

Timeframe	Reasoning
2020-2030	<ul style="list-style-type: none"><li>• Cost of alternatives not yet competitive enough and like for like replacements made.</li><li>• Lack of knowledge or confidence in electrification of some processes.</li><li>• Availability of renewable sources.</li><li>• Uncertainty about future energy sources.</li></ul>
2030-2040	<ul style="list-style-type: none"><li>• Cost of alternatives not yet competitive enough and replacement cycles are delayed.</li><li>• Supply of decarbonised gas or hydrogen not yet established.</li><li>• Availability of renewable sources.</li><li>• Lack of knowledge or confidence in new technologies.</li><li>• Product quality compromised with alternatives.</li></ul>
2040-2050	<ul style="list-style-type: none"><li>• Cost of alternatives not yet competitive enough and replacement cycles are delayed.</li><li>• Supply of decarbonised gas or hydrogen not yet established in less populated areas.</li><li>• Product quality compromised with alternatives.</li></ul>

# Net Zero Ambitions



- An F4 event at COP26 in collaboration with the WFO, FACT Dialogue and COP26 Sponsor, Sainsbury's

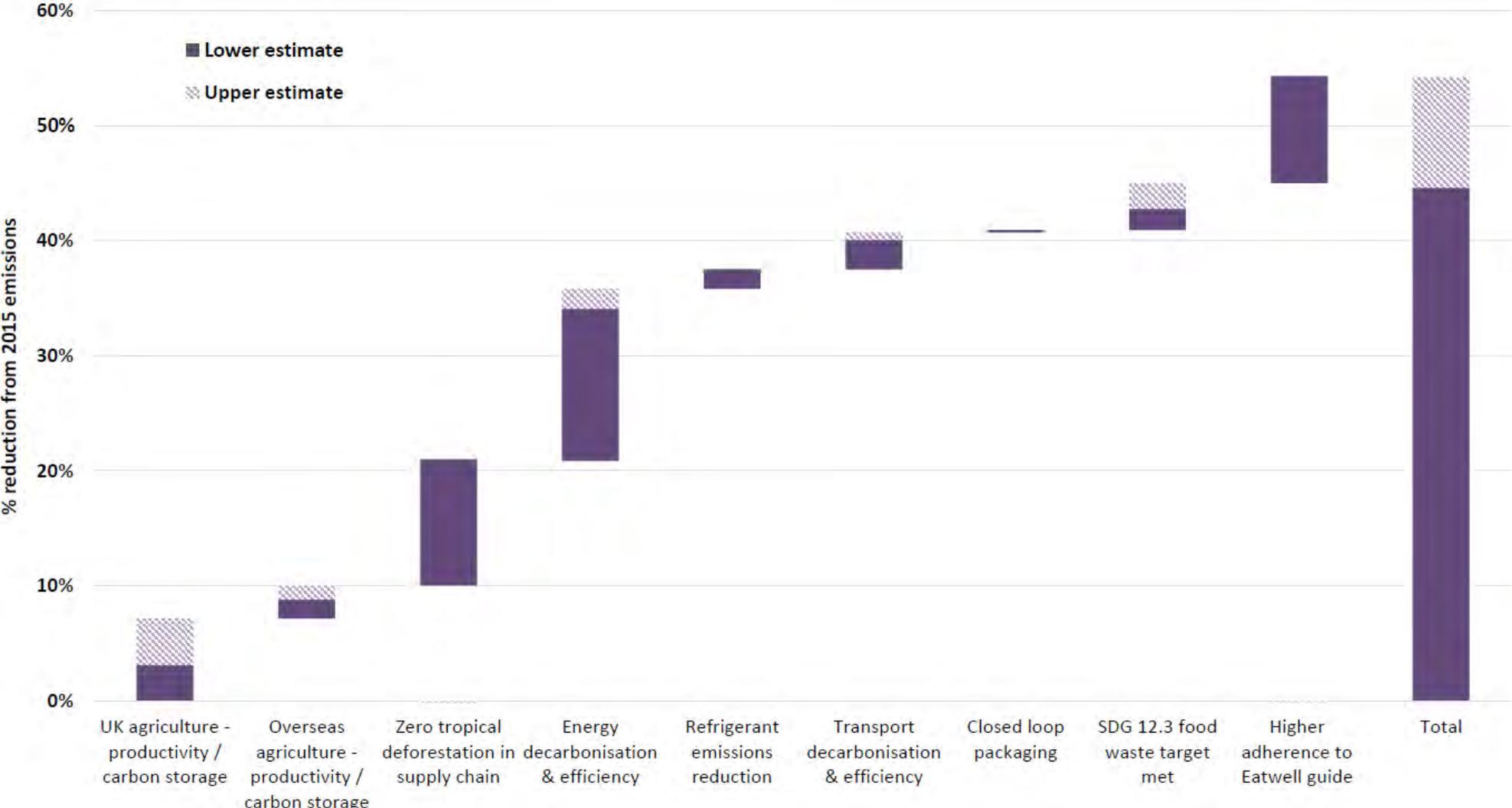


- Industry work with the Waste and Resources Action Programme (WRAP) & Courtauld 2030 commitment
- Food and Drink Sector Council – Net Zero Workstream
- Financing UK Nature coalition

## Courtauld 2030 targets:

- Water: The accompanying Water Roadmap sets out an ambition for signatories to participate in collective action to improve the quality and availability of water in key sourcing areas and aims for *50% of the UK's fresh food to come from areas with sustainable water management.*
- Food waste: to deliver against UN SDG 12.3: *a 50% per capita reduction in food waste* by 2030 vs the UK 2007 baseline (covering manufacture, retail, hospitality and food service, and household)
- CO2 emissions: to deliver *a 50% absolute reduction in GHG emissions* associated with food and drink consumer in the UK by 2030 (against a 2015 baseline)

# WRAP GHG Pathway to 2030



<https://wrap.org.uk/resources/report/uk-food-system-ghg-emissions>

# Food & Drink Sector Council



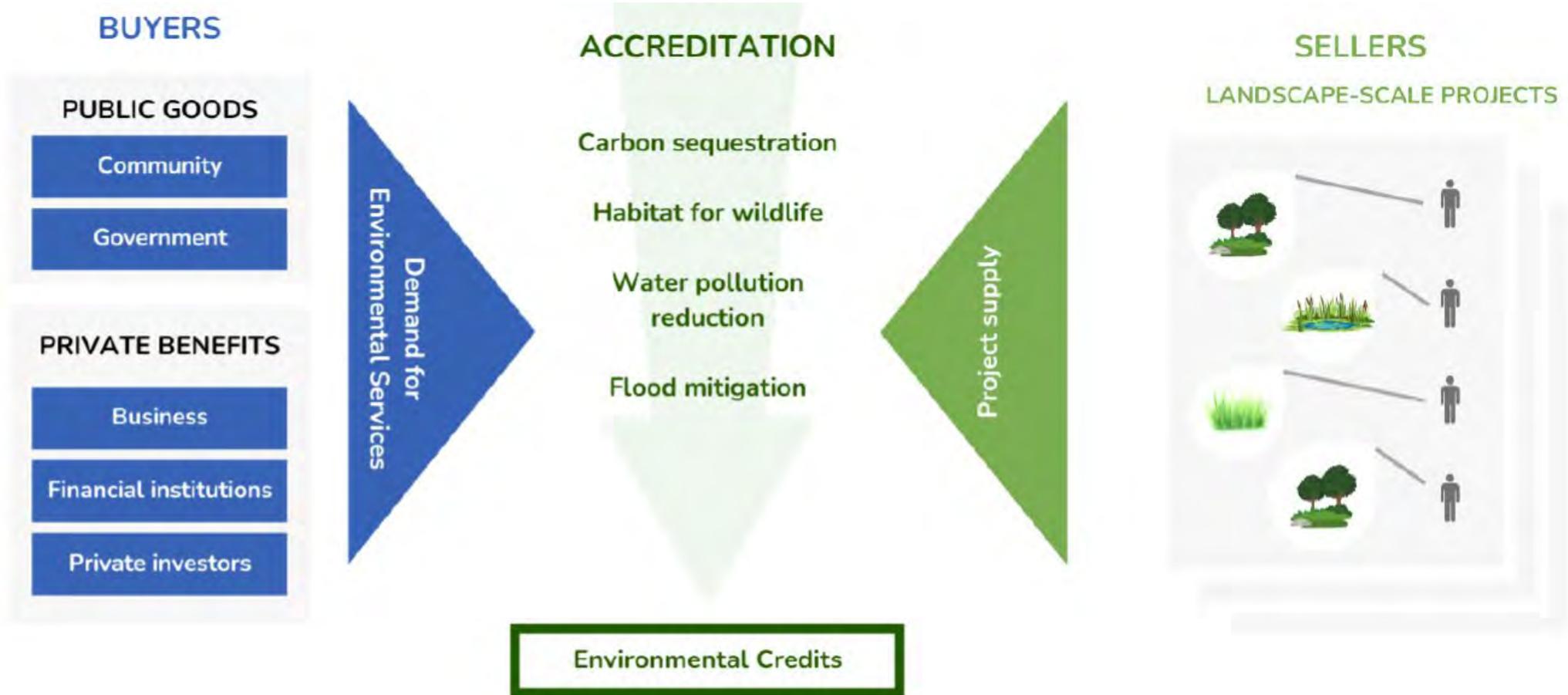
- The FDSC has 4 standing workstreams that are moving forward the long-term priorities of the Council, and are being refreshed to align with the recently published Food Strategy White Paper.
  - Agricultural productivity
  - Innovation
  - Net Zero
  - Workforce and skills
- The FDSC also forms select workstreams for specific priorities
  - The Covid-19 Recovery workstream published a short [report](#) in October 2020
  - The Transition workstream was formed in October 2020, led by Nicholas Saphir (AHDB), and delivered a [report](#).

# Financing Nature Recovery UK



- November 2020 - an initiative launched by the Broadway Initiative, Finance Earth and the Green Finance Institute
- Putting nature recovery onto a sustainable financial footing
- Help businesses deliver on their sustainability commitments
- Vision: Nature-based markets will become a major driver of nature recovery across the UK
- Min. £44 billion over the next 10 years
- Launch of recommendations & roadmap on 7<sup>th</sup> June 2022
- <https://www.financingnaturerecovery.uk/>

# A Market Mechanism in Place by 2030?



Policy work required for efficient and effective market design, governance and operation

# Any Questions?



- Sustainability Networking breakfast tomorrow! Theme is on sustainable procurement, is free to attend and is open to members and non-members.
- Speakers from apetito, WRAP, Nestle, DEFRA and RSK ADAS
- Registration via this link: <https://www.fdf.org.uk/fdf/events-and-meetings/events/events/2022/sustainability-networking-sept-2022/>
- Subsequent one on 30<sup>th</sup> November with theme of water stewardship

Thank you!

[Emma.piercy@fdf.org.uk](mailto:Emma.piercy@fdf.org.uk)