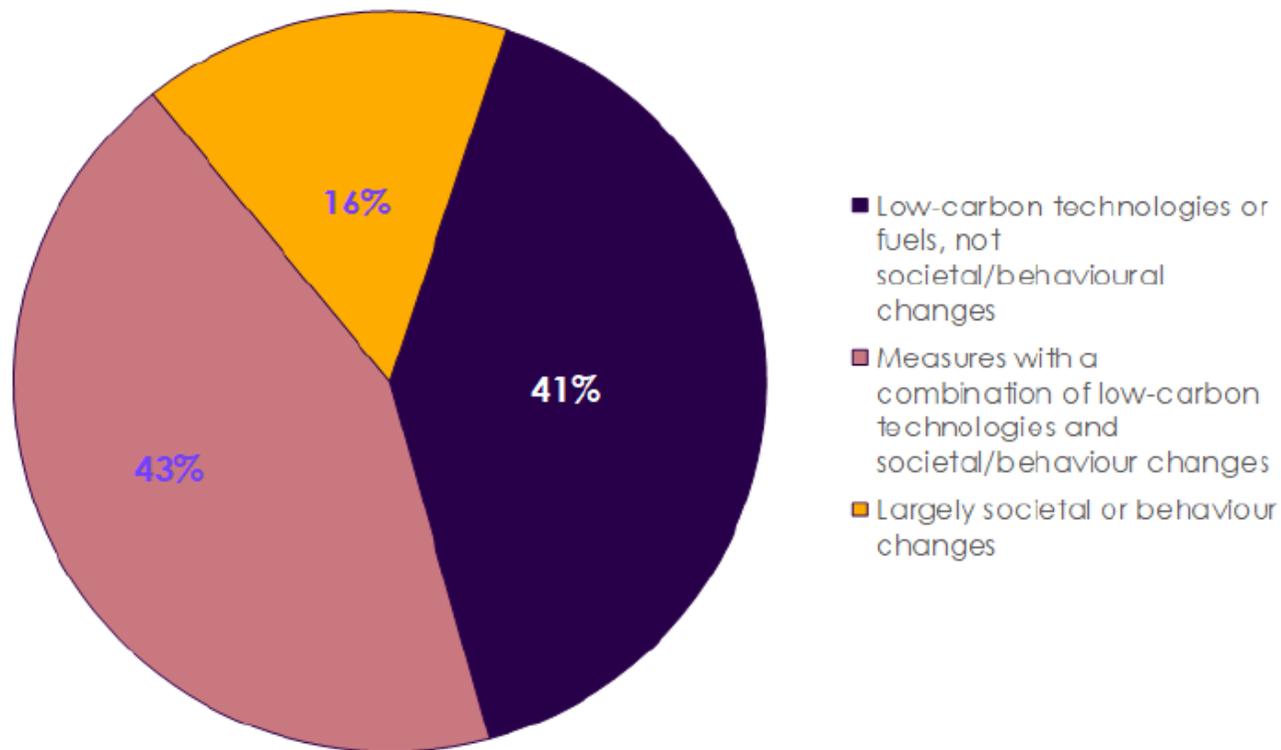


## What can consumers do, and how does it differ from what they think?

- I'm going to use the UK as an example, but a lot will apply elsewhere.
- In terms of how to decarbonise, I'm largely using the UK Climate Change Committee's (CCC)'s 2050 net zero scenario.
- Research shows that many consumers want to act, but are confused.

# Some action from consumers is necessary

Figure B2.2 Role of societal and behavioural changes in the Balanced Net Zero Pathway (2035)



Source: CCC analysis.

# Food (estimates differ wildly, in the UK from 13-36% of emissions)

## Both consumers and producers have significant control

The biggest way to reduce emissions is reduction in ruminant animals.<sup>1</sup>

	Tonnes CO <sub>2</sub> e per year
High meat eaters	2.6
Medium meat eaters	2
Low meat eaters	1.7
Vegetarians	1.39
Vegans	1

## How to decarbonise: the CCC scenario

- 20-50% reduction in consumption of beef, lamb and dairy.
- 1/3 agricultural land is freed up through this and more efficient farming - forested or used for energy crops

## The UK public do not understand the climate-diet link well

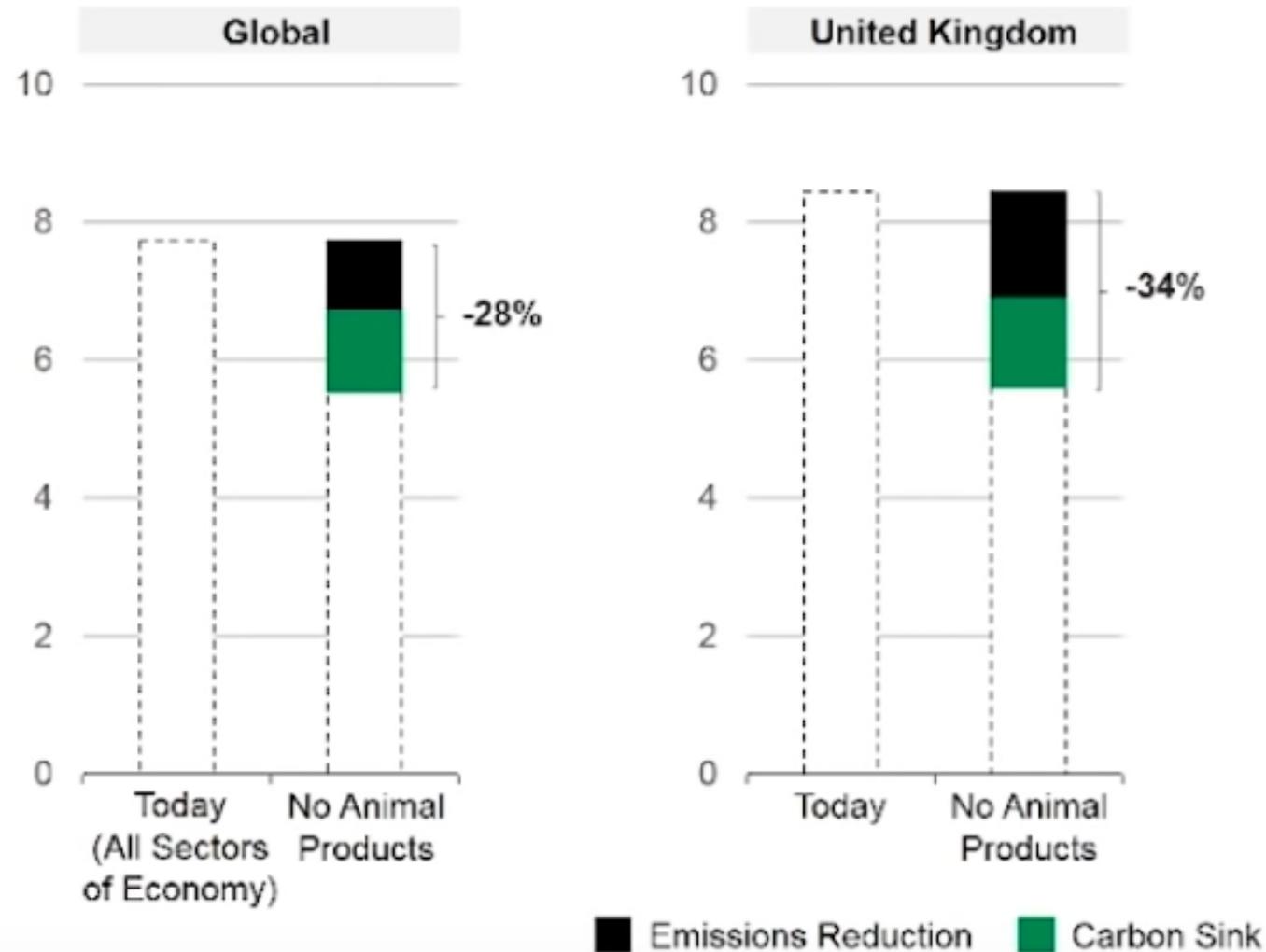
- Only about half link agriculture with climate change.
- When it's explained, 41% would consider a 25% reduction in meat, & 29% in dairy.<sup>2</sup>

1. doi: 10.1007/s10584-014-1169-1

2. BEIS, 2020, Public Attitudes Tracker; Energy Systems Catapult 2020 Net Zero: A Consumer Perspective

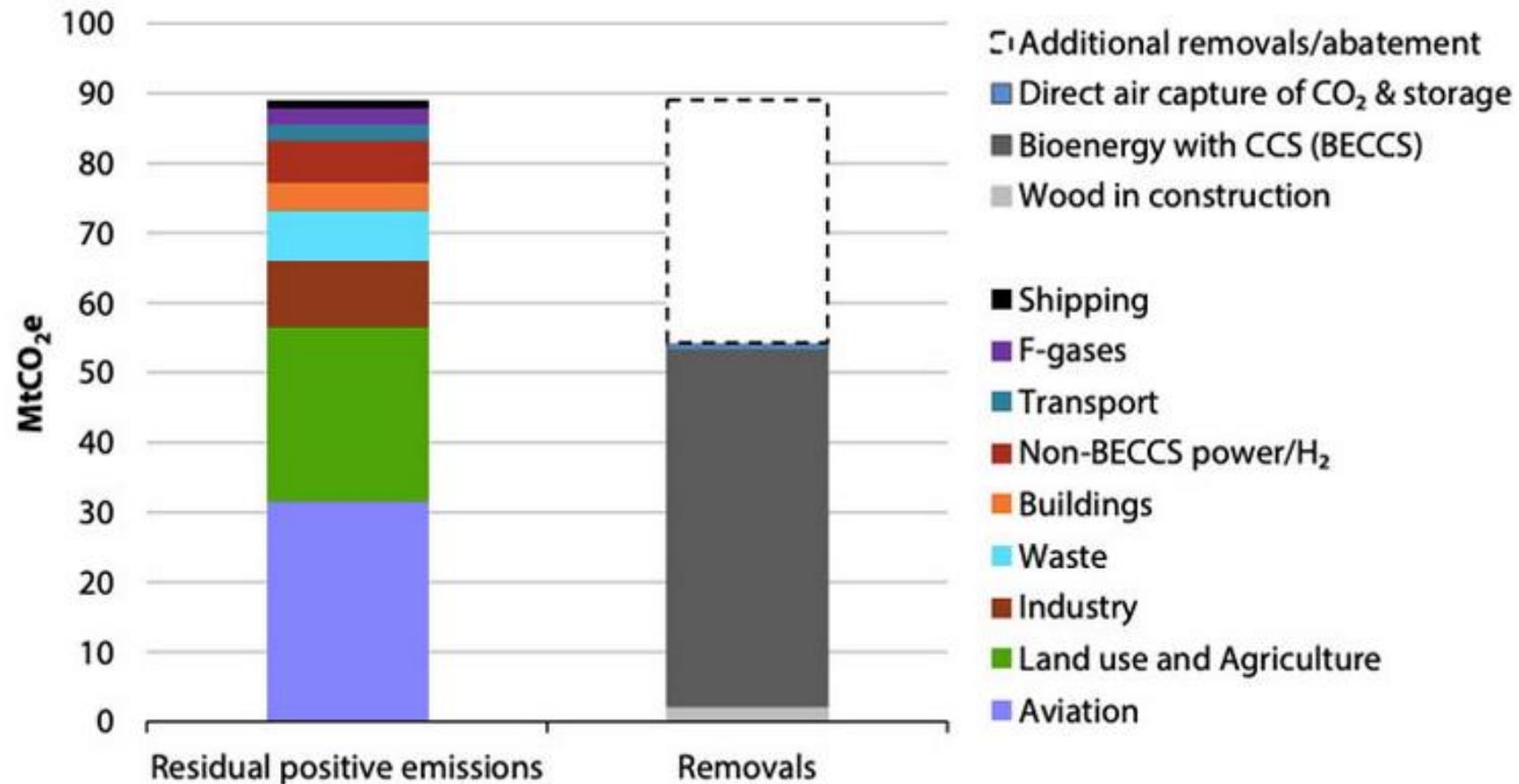
# Carbon sink potential of diet change

Greenhouse Gas Emissions Per Person (tonnes CO<sub>2</sub>eq)



Source: presentation by Joseph Poore "Addressing Climate Through Food", 2019 , available here: <https://www.youtube.com/watch?v=8miQs3mPGu8>

# The NETs in the CCC's scenario



Source: CCC, 2019, Net Zero – Technical Report, <https://www.theccc.org.uk/publication/net-zero-technical-report/>

# Manufactured goods - clothing as an example (c. 2-4% UK emissions)

## **Both consumers and producers have significant control**

Changes in production methods, reduction, reuse, recycling are all needed

### How to decarbonise: the World Economic Forum scenario

- 15% efficiency
- 45% renewable electricity
- 20% renewable heat
- 10% changing from wet to dry production processes
- 10% changes to fibre production such as growing cotton more sustainably
- 2% each through recycling and low carbon transport

2<sup>nd</sup> hand potential: 75% of UK clothing disposed of is in good condition. Yet only about 10% is resold.

### UK consumers are aware but confused

This is exacerbated by the data being poor. Eg. nobody really knows the emissions of the clothing sector. Estimates vary from 2-10%

## Transport (in the UK c. 25% of emissions)

### **Both consumers and producers have significant control.**

Reduction, modal shift, efficiency gains and fuel switch are all needed

#### How to decarbonise: the CCC's scenario

- Amount of travel stagnates.
- Battery-electric vehicles replace all sales of conventional cars, vans, motorbikes and plug-in hybrids by 2030-2032.
- Some efficiency gains
- HGVs use hydrogen or batteries. Ships use ammonia.
- Total emissions from in 2050 fall by 40-60% on 2018 levels. The rest is cancelled with net negatives.

#### UK consumers do realise the transport-climate link

But not always the ways to tackle it

## Heating (in the UK c. 14% of emissions)

### **Consumers have significant control.**

Insulation, reduction and fuel switch are required

### How to decarbonise: the CCC scenario

- Heat demand is cut by 12% through insulation and behaviour change
- Most heating is done with heat pumps.
- In other cases there is hydrogen, normal electric heating, or local heat storage.

### UK consumers are very ignorant

About 50% UK citizens do not realise that residential heating is a source of emissions.<sup>2</sup>

## Consumers need:

1. Education - they are wildly misinformed.
2. Producers need to offer lower carbon options.
3. In some cases they will need financial help.
4. Some cases will require regulation and infrastructure, eg. Charging points for electric vehicles.

## The limits to consumer action

We also need:

- Electricity decarbonisation, which will require government action.
- Carbon capture and storage & hydrogen development
- Changes to production methods
- Changes to infrastructure

Consumers cannot do this.