



# BEHAVIOUR CHANGE FOR NET ZERO

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and **Social Transformations**

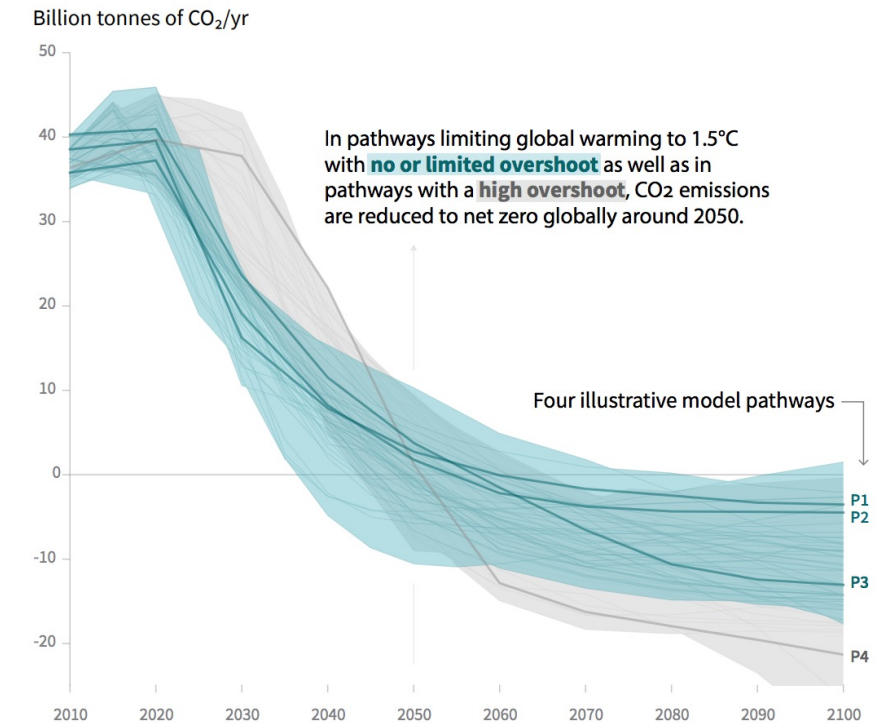
# Tackling climate change > societal transformation

Societal **transformation** is required to reach 'net zero' emissions by 2050 (IPCC, 2018)

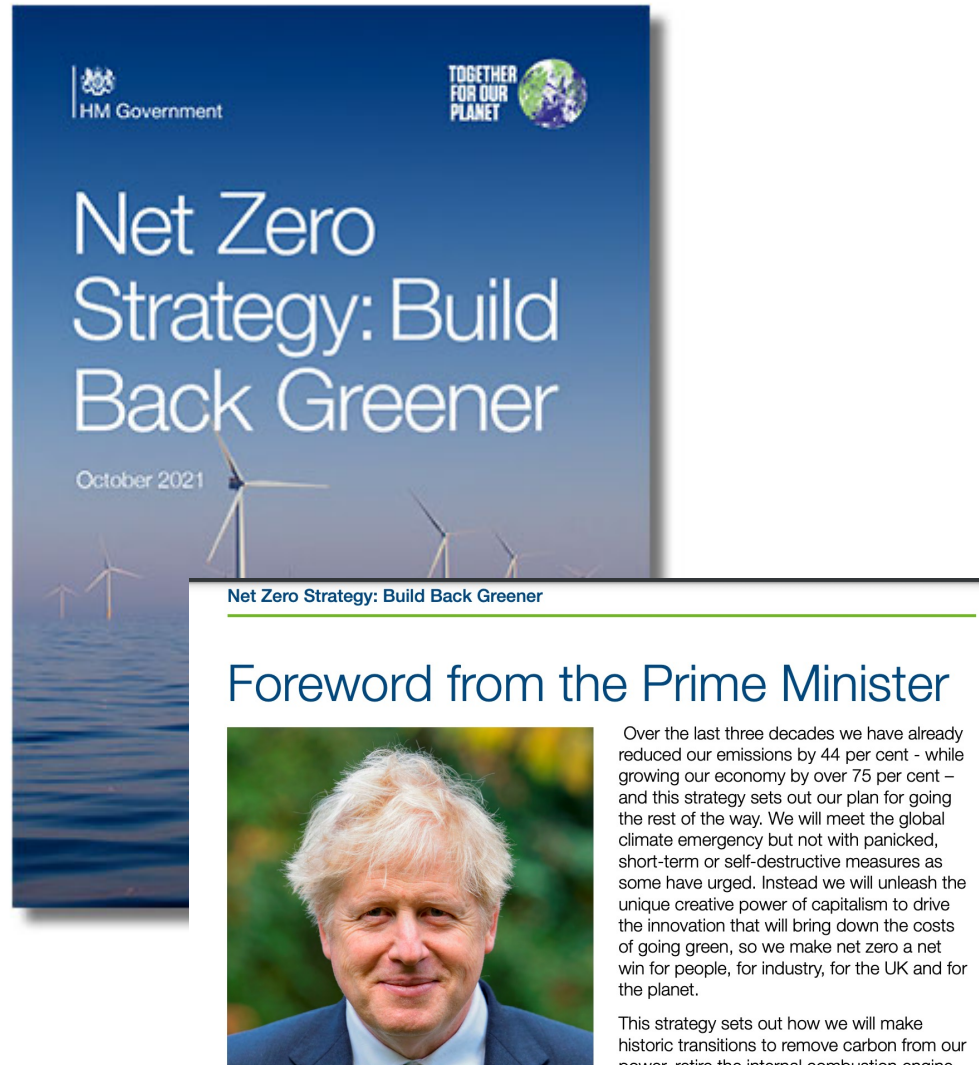
*"...systemic change involving alterations in the overall configuration of transport, energy, and agri-food systems, which entail **technology, policy, markets, consumer practices, infrastructure, cultural meaning and scientific knowledge**"*  
(Geels, 2011)

**We're not on track...** CO<sub>2</sub> emissions have been cut from energy supply but hardly from demand

Need to cut our emissions by **78% by 2035** in the UK



# Techno-optimistic climate policy framing (UK)



“For years, going green was inextricably bound up with a sense that we have to **sacrifice** the things we love. But this strategy shows how we can build back greener, **without so much as a hair shirt in sight.**

In 2050, we will still be **driving cars, flying planes and heating our homes**, but our cars will be electric gliding silently around our cities, our planes will be zero emission allowing us to fly **guilt-free**, and our homes will be heated by cheap reliable power drawn from the winds of the North Sea.[...]

We will unleash the unique **creative power of capitalism to drive the innovation** that will bring down the costs of going green.”



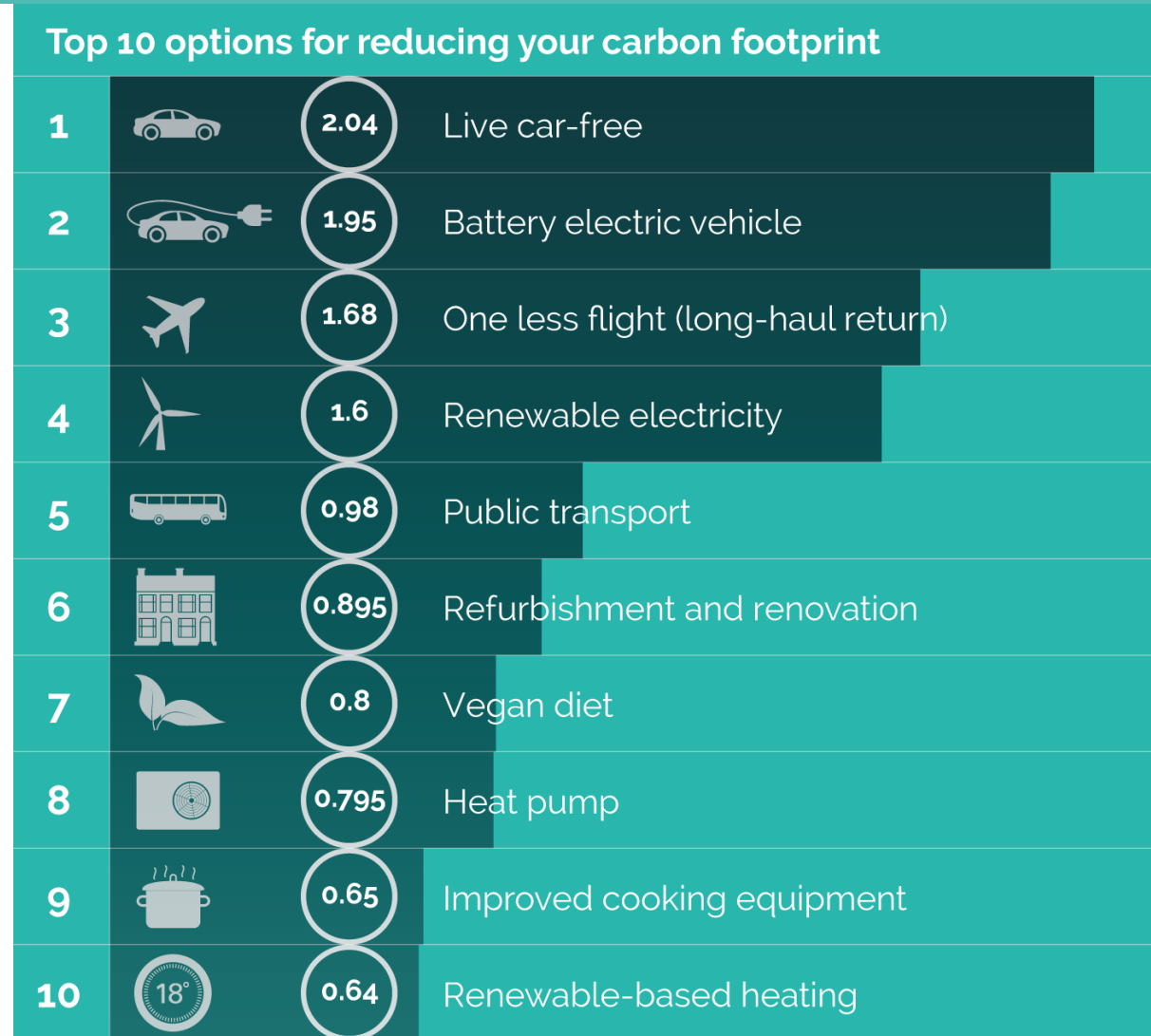
# Behaviour change is critical

## Technological change alone is not enough to reach our carbon targets

- Most measures need some behaviour change (IPCC, 2022)
- One-third of emissions reduction from consumer behaviour change alone (HoL, 2022)

Reduction of average UK carbon footprint by 2030 from **8.5t to 2.5t** CO<sub>2</sub> to stay within 1.5°C warming (Akenji et al., 2021)

Ivanova et al., 2020



Recycling saves **0.01** tCO<sub>2</sub> per year

Median potential reduction (tCO<sub>2</sub>eq/cap)



# People are not only consumers

We have multiple roles, so can be **agents of change** in *lots* of ways

Direct CO<sub>2</sub>  
reduction



Indirect CO<sub>2</sub>  
reduction

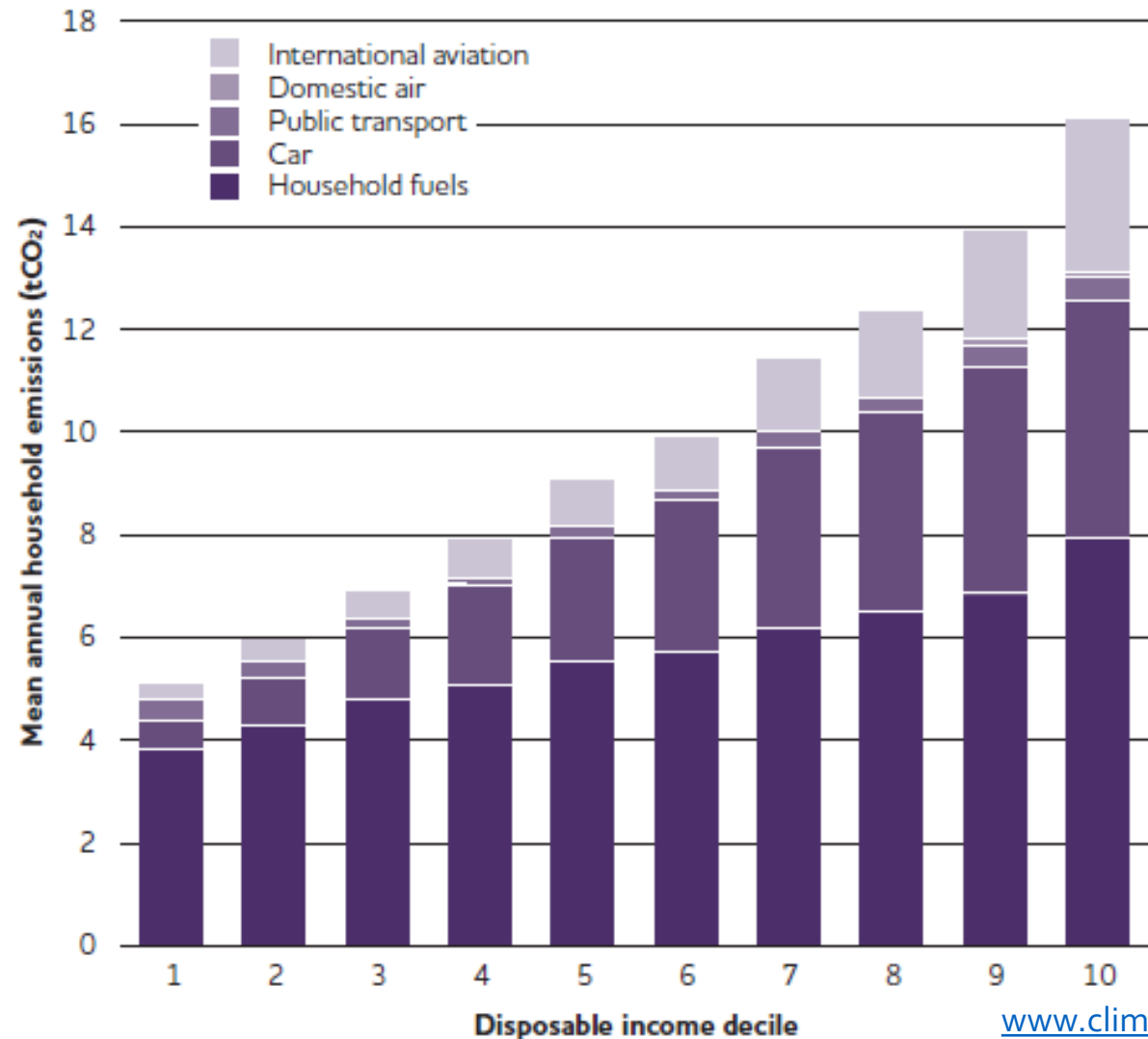


# Whose behaviour needs to change?



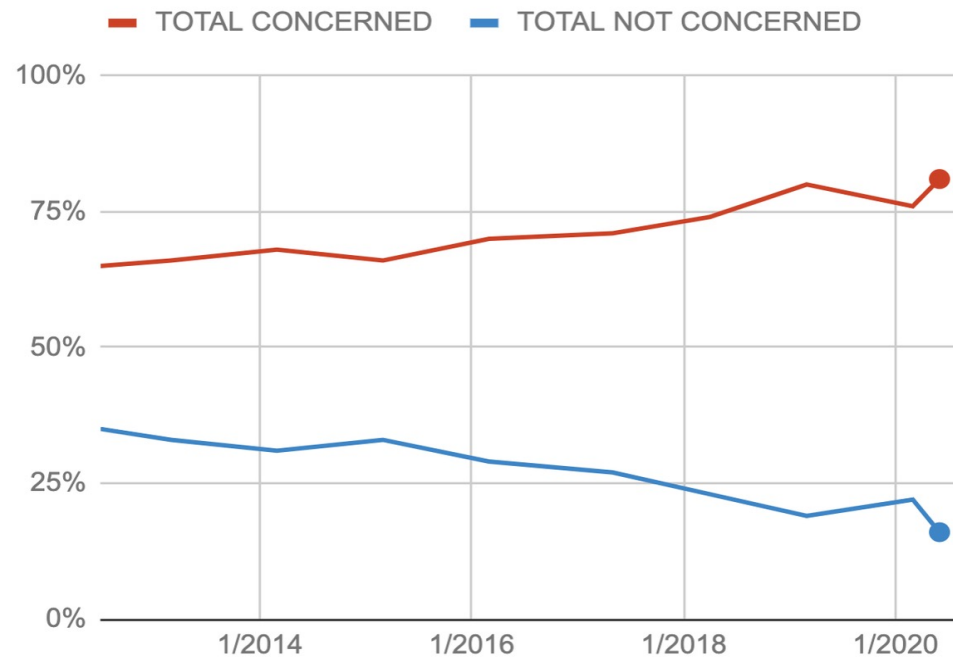
“Not all households will need to—or be able to—adopt behaviour changes to the same extent, and that policies should take into account the needs of **different groups** [*rural, disability, gender, income, etc.*] and fairness.

... The **wealthiest 10%** have a carbon footprint more than double the national average and more than **four times** that of people at the lower end of the income distribution”



# The public is worried about climate change

## How concerned are you about climate change?



Oct 22:  
82%

CarbonBrief  
(BEIS data)



- Climate change concern not dented by COVID-19

*April 2021: 73% in UK agree: "If individuals like me do not act now to combat climate change, we will be failing future generations"*

- But behaviour change is lagging – emissions rebounding since COVID



# Why doesn't the public act on climate change?

## Individual barriers

- **Lack of knowledge** about the causes, consequences, potential solutions
- **Competing motivations, values or needs**
- **Psychological barriers** (e.g. temporal discounting)

## Social, economic and structural barriers

- **Lack of action by governments, business, industry**
- **Social norms and expectations** (to consume)
- **Cost of low-carbon alternatives**
- **Lack of enabling initiatives and facilities** (e.g., regular public transport)



# How can we change behaviour?



## Downstream – influencing individuals' choices

- information / advertising (e.g. labels)
- education
- social approaches

2-3%  
effective\*  
(Nisa et al., 2019)

**\*But more effective for political / social change** (Weiss & Tschirhart, 1994)



## Upstream – influencing context/situation of action

- economic measures
- changes to available products and services (nudges, regulation)
- changes to built environment

Up to 100%  
effective



# Giving people information

- We do need to raise awareness about **what is effective** to tackle climate change – incl. dietary choices
- **Target place and time** of action (e.g., light switch, fuel pump)
- Communication is most effective when it targets **what people care about** – e.g., saving money / time, being healthy, helping community / family

**Example:** Higher support for office **car park closure** (and waste and energy efficiency measures) if framed in terms of employees' goals, such as **saving money, encouraging more exercise, and having more time to read**

(Unsworth & McNeil, 2017)

- **Most** things we can do to tackle climate change can **benefit us** in other ways – e.g., walking / cycling and eating less red meat is healthy, can create 'green' jobs (like installing insulation or heat pumps) (IPCC, 2022)

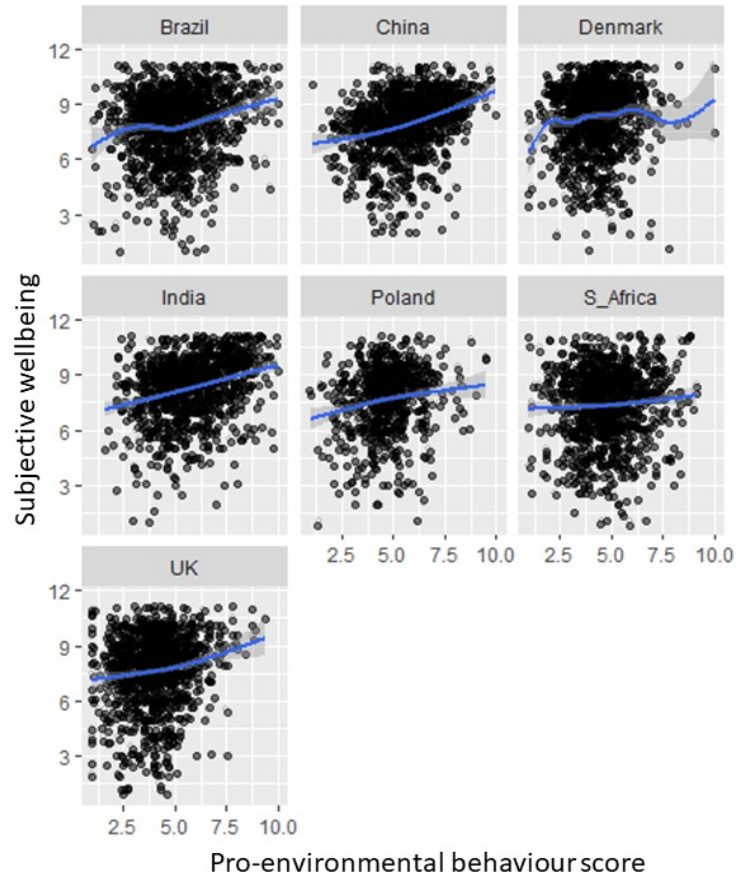
*Sainsbury's, Lidl, M&S, etc.  
trialing climate labels*

ECO-SCORE





# Climate action improves wellbeing



- Materialism negatively affects wellbeing (Dittmar et al., 2014)
- Those with 'green' lifestyles tend to have higher wellbeing (Capstick et al., 2022)
- **Going green is not about 'sacrifice' – far from it; it improves quality of life**
- Spending time in nature improves wellbeing – and motivation to be green (White et al., 2020)

# Example: 'Pen portraits' for car use reduction

Working with Scottish Government, CAST used desk research, focus groups and surveys to develop and test 6 'pen portraits' reflecting different Scottish public segments and highlighting that car use reduction is **possible** and **desirable**:

- Mary and Jonathan, an older couple living in a rural area
- Alex, a young adult living in an urban area
- Nia and John, middle-income parents
- Kim, a parent on lower income
- Yasmin, a small business owner
- Mike, a disability rights campaigner



# Social influence



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- People are strongly influenced by other people – they want to do what is 'normal' and 'right'
- We are most influenced by people we care about and who are 'like us' (friends, family, colleagues, neighbours, etc.)
- So, we can help people around us to see climate action as 'normal' when we start taking low-carbon actions (wasting less, walking, eating less meat...)... this can **create new 'norms'**

## Example 'Eco-teams':

- 6-8 households, monthly meetings, share insights and track progress
- Social norms, 'foot in the door', peer-to-peer (trusted) information, tailored and comparative feedback
- Small but durable behaviour change



*'Neighbourhood effects'*



*Norms in other countries*



# The limits to information...



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THE  TIMES

Today's sections ▾

Past six days

Explore ▾

Times Radio

## Climate experts fly more often than other scientists

Ben Webster, Environment Editor

Tuesday October 20 2020, 12.01am,  
The Times



Climate scientists take about five flights a year on average for work  
TARO HAMA-E-KAMAKURA/GETTY IMAGES

- Climate change experts took median **2-3 flights** per year; non-experts took **two** flights per year
- Both groups took similar no. of personal flights (1-2 per year)
- Climate change professors fly the most!
- **Knowledge doesn't lead to behaviour change**

Whitmarsh et al., 2020

# Changing the context of action



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**Downstream interventions (labels, feedback, norms, goal-setting, etc.) = 2-3% effective**

**Nudges (changing choice architecture) = ~25% effective**

Nisa et al., 2019



**Doubling vegetarian options in UK canteens  
– from one in four to two in four – increased  
plant-based sales by 40-80%**

Garnett et al (2019)

**Using green energy as default tariff by  
Swiss energy co. with almost quarter  
million customers increased uptake from  
3% to 80-90%, lasting 4+ years**

Liebe et al (2021)



# Changing the context of action



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## Germany eases cost of living crisis with €9 a month public transport ticket

Millions set for summer of cheap travel on all modes of transport



A regional train passes through fields in Wehrheim, near Frankfurt, Germany. Photograph: Michael Probst/AP

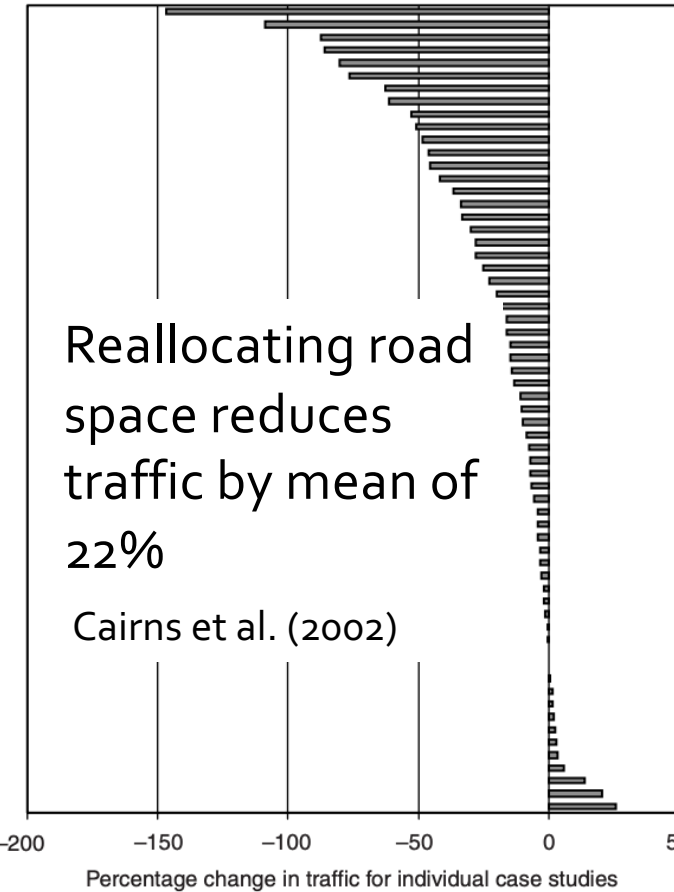


## Changing infrastructure (e.g. built environment)



## Using economic (dis)incentives

- Congestion charging is most effective at cutting car use (up to **33%**, London; Kuss & Nicholas, 2022)





# Get the timing right...

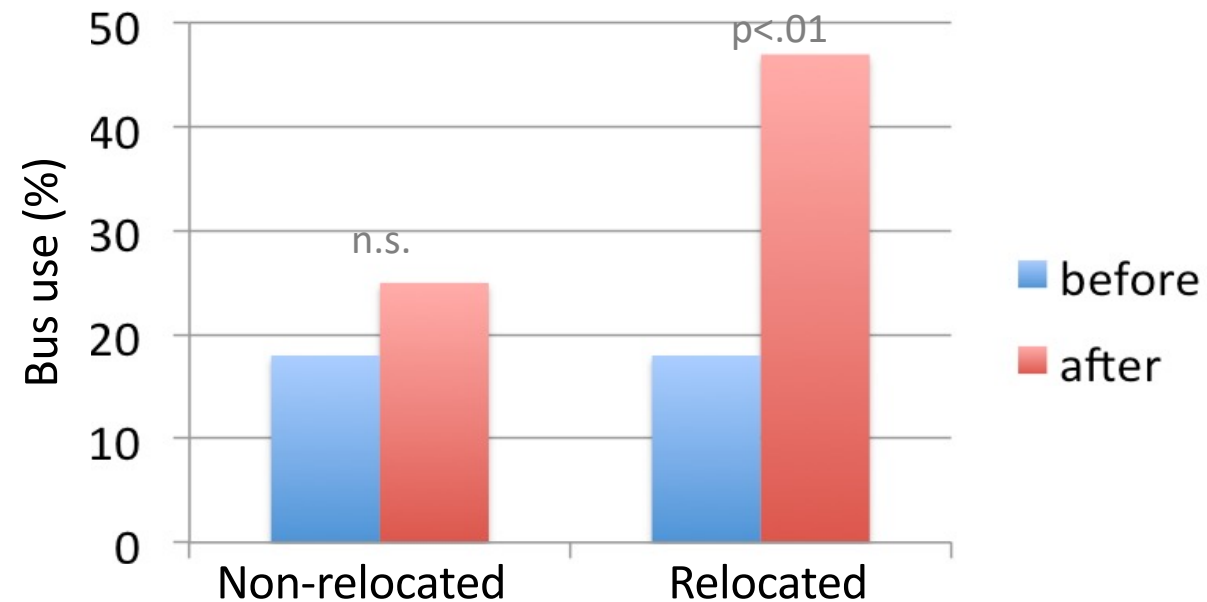


Bamberg, 2006

## Habits are a major barrier to lifestyle change

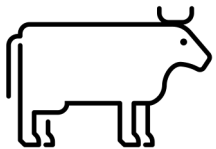
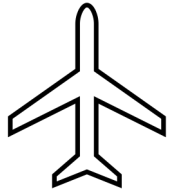
### Habits are weaker during 'moments of change' (e.g. moving house)

- Tailored bus info and 1-day pass to promote bus use given 6-weeks post-relocation was more effective (inc. from 18% to 47%) than when given to those not relocating

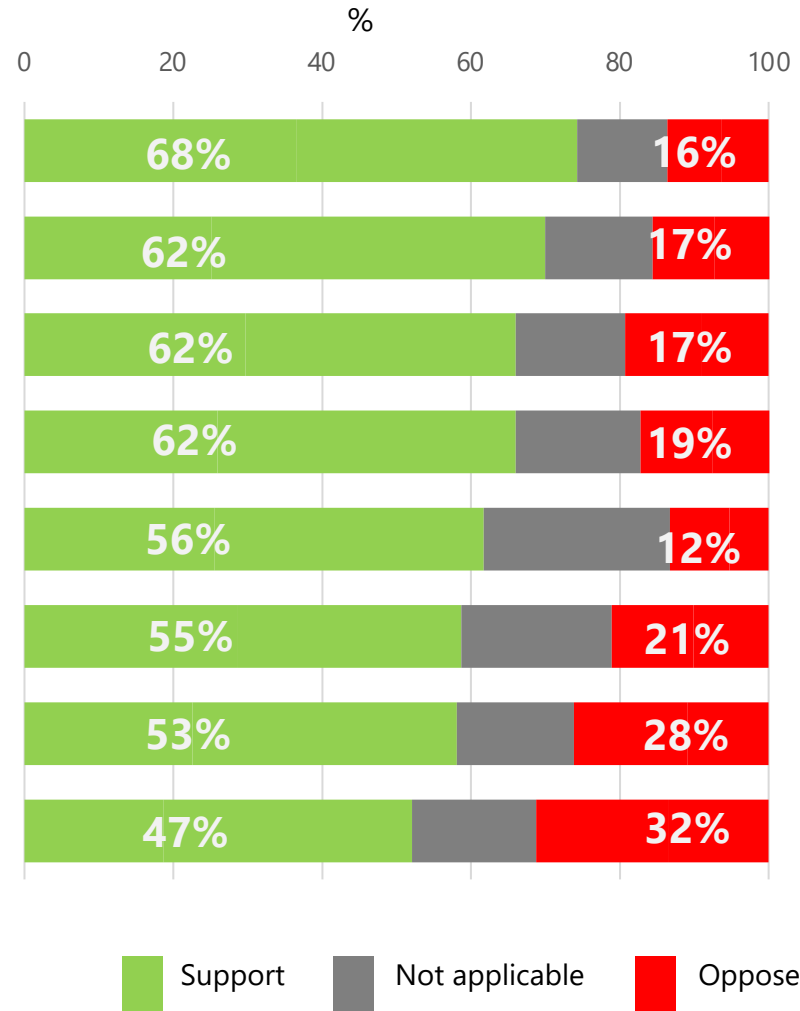


# There is broad support for net zero policies

## Policy support

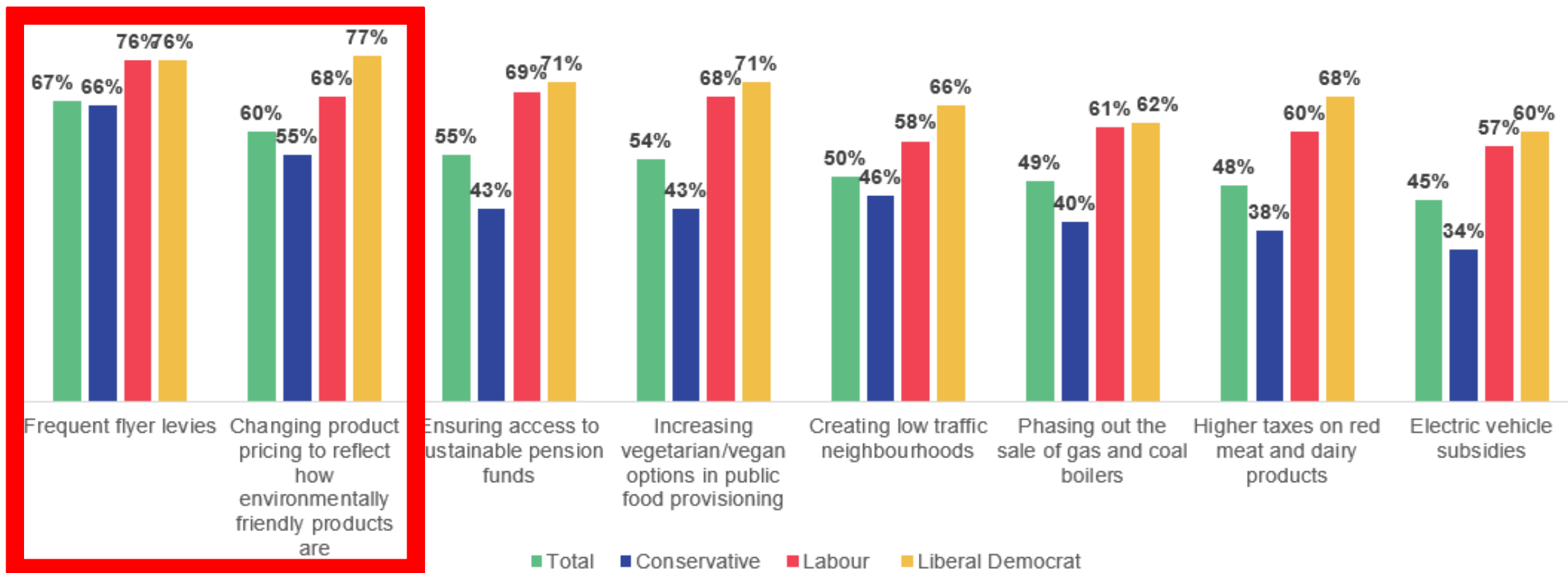


- Frequent flyer levies
- Changing product pricing ...
- Phasing out gas and coal boilers
- Electric vehicle subsidies
- Increasing veggie/vegan options
- Access to sustainable pension funds
- Creating low traffic neighbourhoods
- Higher taxes on red meat and dairy



- Online survey of UK public conducted by Ipsos in August 2021
- N=5,665 (aged 16+)
- Broadly representative of UK public (slightly older)
- Each participant was randomly presented with 4 policies from a total of 8 and asked about support, co-benefits, trade-offs and fairness
- Replicated in summer 2022 (similar levels of support)

# Some policies are less divisive than others



Base: 2022 - 16,160 UK adults aged 16+ per policy, 27 Oct – 2 Nov 2022.

Q: To what extent would you support or oppose this?



# Predictors of policy support

	Low-traffic n'hoods	Frequent flyer levy	EV subsidies	Veg/vegan provisioning	Meat/ dairy tax	Env. pricing	Phase out gas boilers	Sustainable pensions
	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>
Gender (M=1, F=2)	-.001	.014	-.021	<b>.053**</b>	.018	<b>.07***</b>	-.009	.02
Age	<b>.059**</b>	<b>.098***</b>	-.012	.018	.005	.038	.007	-.026
Econ. deprivation (IMD quintile)	-.004	-.01	<b>.048*</b>	<b>.061**</b>	.028	<b>.06**</b>	.008	<b>-.042*</b>
Rurality	<b>.047*</b>	.013	-.026	.008	.008	<b>.057**</b>	.013	.024
Political orientation (L-R)	-.021	<b>-.101***</b>	-.034	<b>-.064**</b>	-.046	-.03	-.027	<b>-.093***</b>
Communitarian (1) vs individualistic (2)	<b>-.095***</b>	-.048	<b>-.123***</b>	<b>-.119***</b>	<b>-.114***</b>	<b>-.089***</b>	<b>-.131***</b>	<b>-.131***</b>
Climate worry	<b>.249***</b>	<b>.261***</b>	<b>.307***</b>	<b>.276***</b>	<b>.327***</b>	<b>.379***</b>	<b>.333***</b>	<b>.295***</b>
<b>Policy fairness</b>	<b>.446***</b>	<b>.356***</b>	<b>.369***</b>	<b>.426***</b>	<b>.433***</b>	<b>.326***</b>	<b>.382***</b>	<b>.329***</b>
R <sup>2</sup>	.37	.29	.37	.45	.46	.38	.40	.39

# How can we make climate policies fairer?



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Disruption to lifestyles and society mean **engaging with the public** is critical for acceptance (& effective policy design)

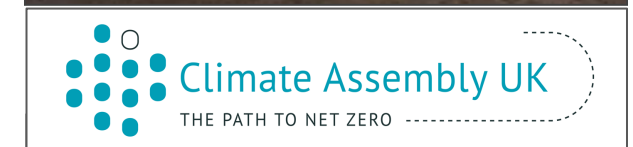
**Perceived fairness is often strongest predictor of policy support:**

- Fairness is **more important than effectiveness** of policies (Sweetman & Whitmarsh, 2015; Bergquist et al., 2022)
- **Procedural**, as well as **distributional**, justice (Jagers et al., 2010)

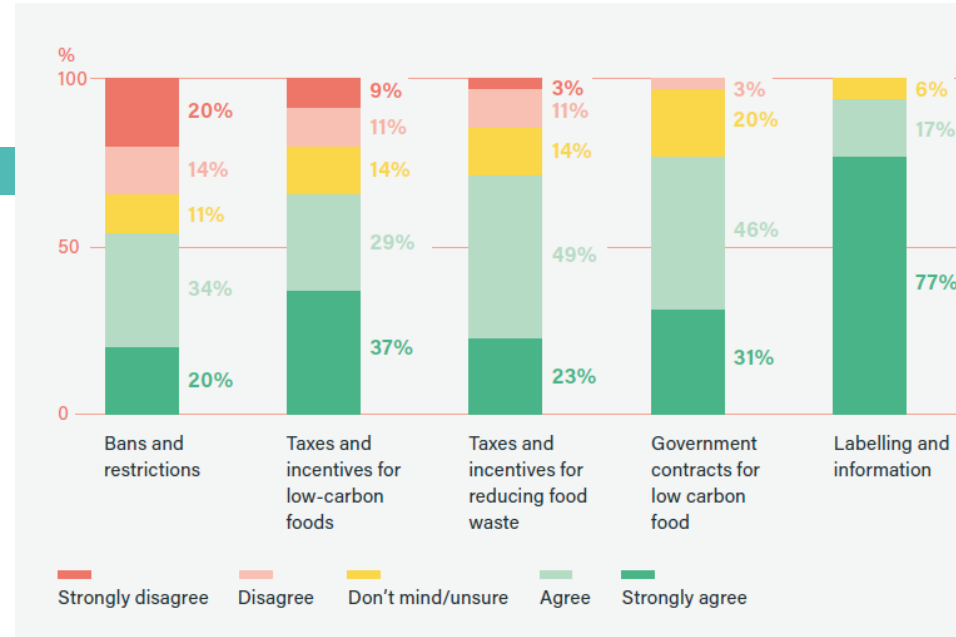
**Participatory policy-making leads to better and fairer outcomes** (instrumental rationale: Fiorini, 1990)

**Citizen engagement is vital for building political mandate** (e.g., citizens assemblies and juries)

Howarth et al., 2020



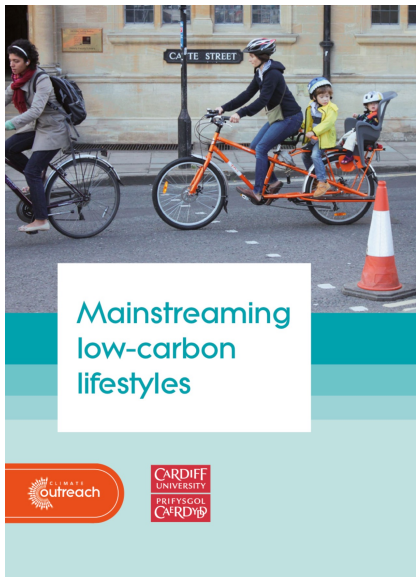
- Climate Assembly UK was **first UK citizens' assembly on climate change**
- Commissioned by six Select Committees of the House of Commons to look at **how the UK should reach its legally-binding target of net zero emissions by 2050**
- **108** assembly members were **representative** of UK population in terms of demographics, geography and levels of climate concern
- Spent 6 weekends in Jan-May **2020** learning about climate change and net zero policies, deliberating and making recommendations
- Covered **range of topics** inc. energy supply, food, travel, heating, consumption
- **Strong support** for various net zero policies



## Principles for net zero policies:

- **Fairness** (regions, incomes, sectors, preferences);
- Taking advantage of **co-benefits** for local high streets, health and the economy;
- Maintaining **freedom and choice** where possible;
- Much better **information and education**;
- **Strong leadership from government** and a **cross-party approach to change**.





## Radical social and behavioural change essential for reaching net zero and increasing resilience to climate change impacts

### How can we achieve this?

1. **Focus on high-impact behaviours** – mobility, food, energy – not only consumer actions, but also professional, political & community actions
2. **Co-design interventions with communities/publics, which achieve co-benefits** – e.g., health benefits of active travel – and frame information around audience values/needs, as well as changing norms
3. **Implement upstream *and* downstream interventions** – e.g., social norms, pricing, city design – due to multiple influences on behaviour
4. **Get the timing right** – target interventions to when habits are disrupted



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