

# Climate Change and reaching Net Zero

Planning and building for future standards a  
brief overview

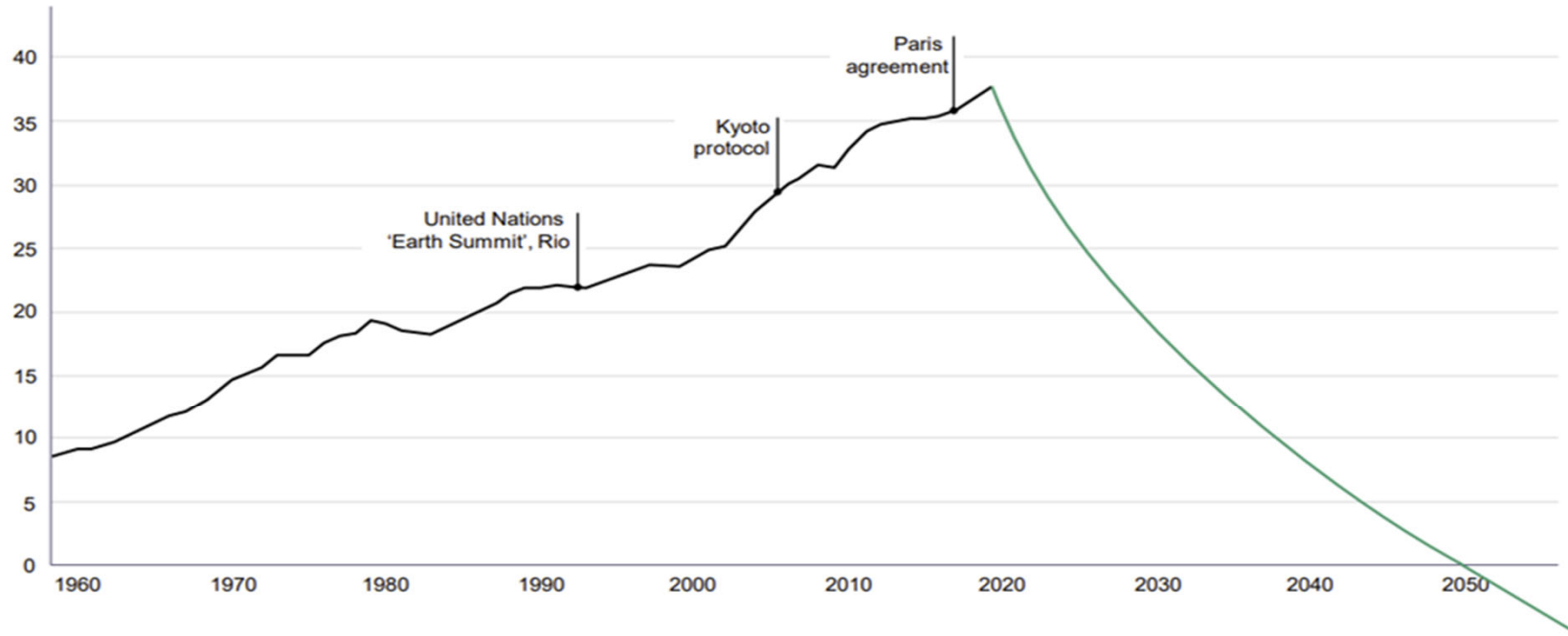
# Carbon Reduction – Global Warming – Construction+ Two Other Very Serious Issues \*\*



# How are we Doing?

## Global Carbon Emissions

Billion tonnes CO<sub>2</sub> emitted each year



Flooding

1.0°C

**today**

(increase over pre-industrial revolution  
average temperatures)

1.5°C

**100% increase**  
in flood risk



# Temperature increase

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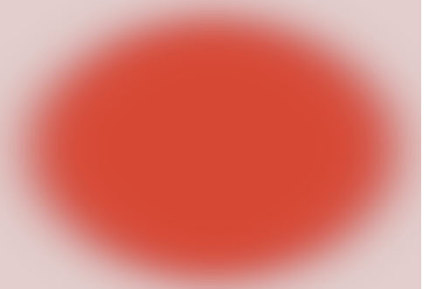
2°C

**170% increase**  
in flood risk

And on land: -

2°C

**2 billion people**  
exposed to severe heat waves  
once every 20 years

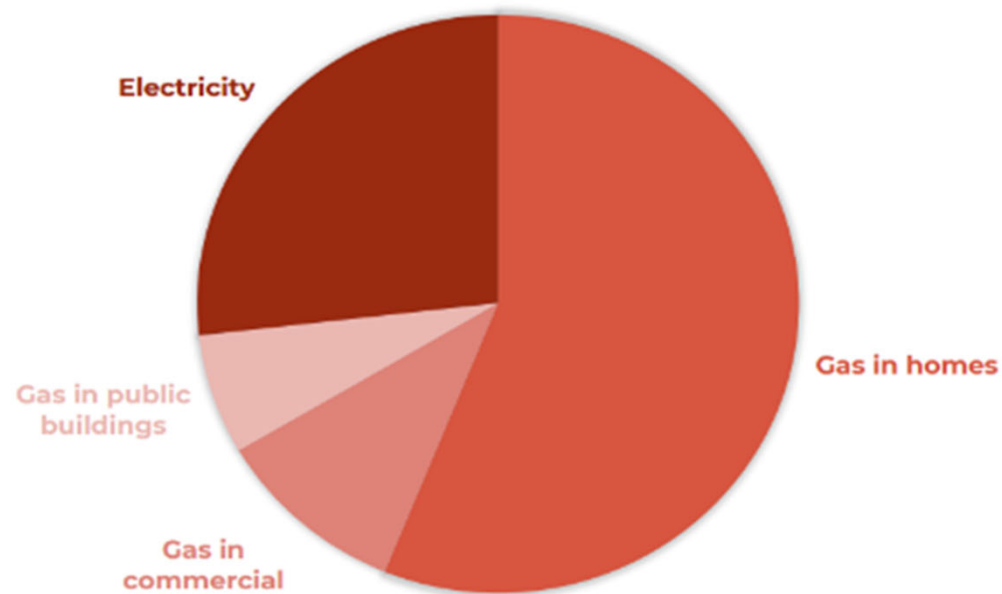


# Our built environment

Buildings account for around a quarter of UK greenhouse gases

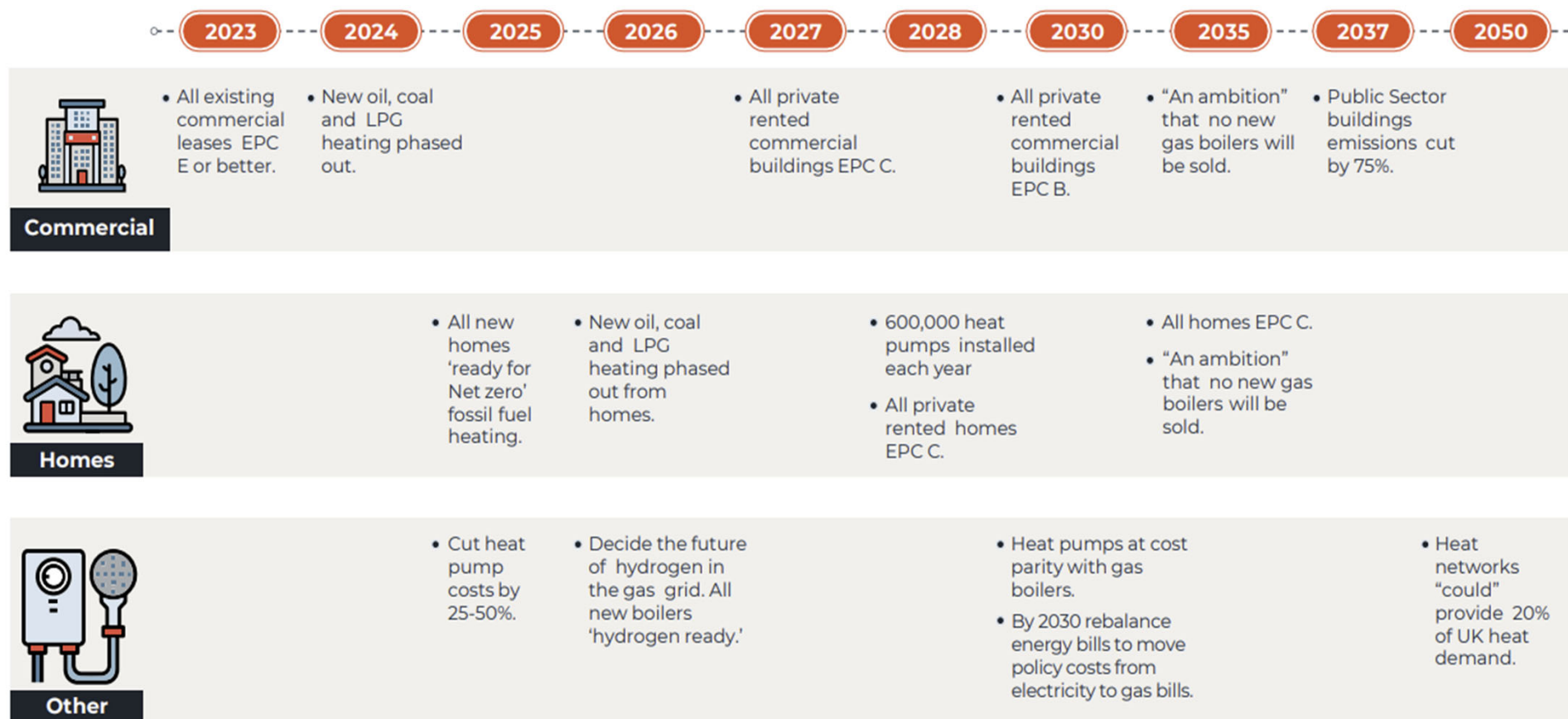
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CO<sub>2</sub>E EMISSIONS FROM BUILDING OPERATIONS



# Building Regulations Future Homes standard comes in - 2025, big changes

## Building decarbonisation – key dates





# A brief comparison

Scale of impact

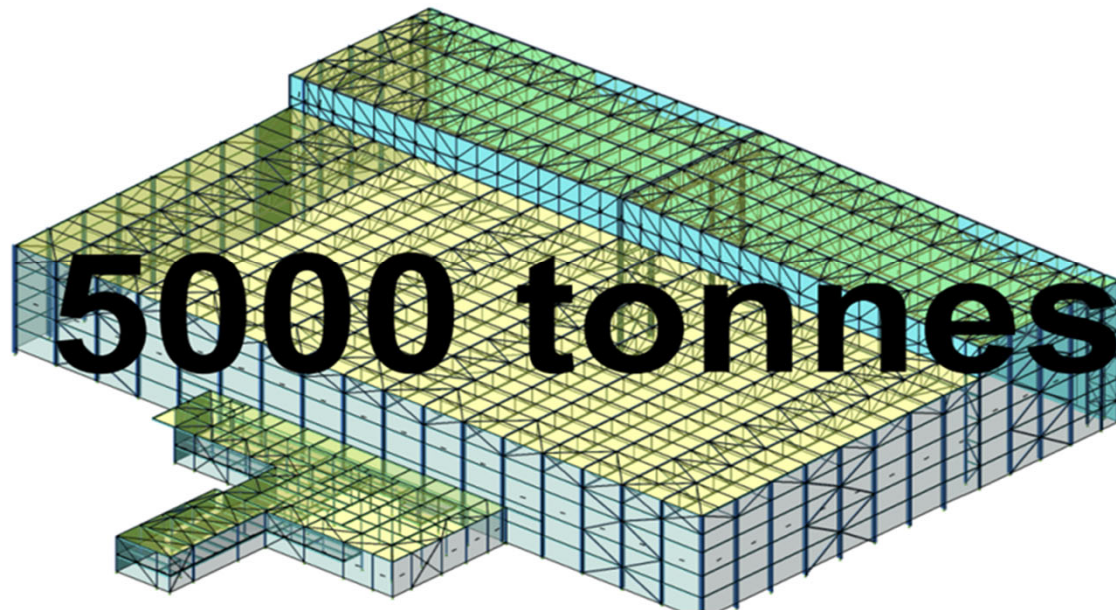


London to New York  
Single, economy class

**1 tonne CO<sub>2</sub>e**

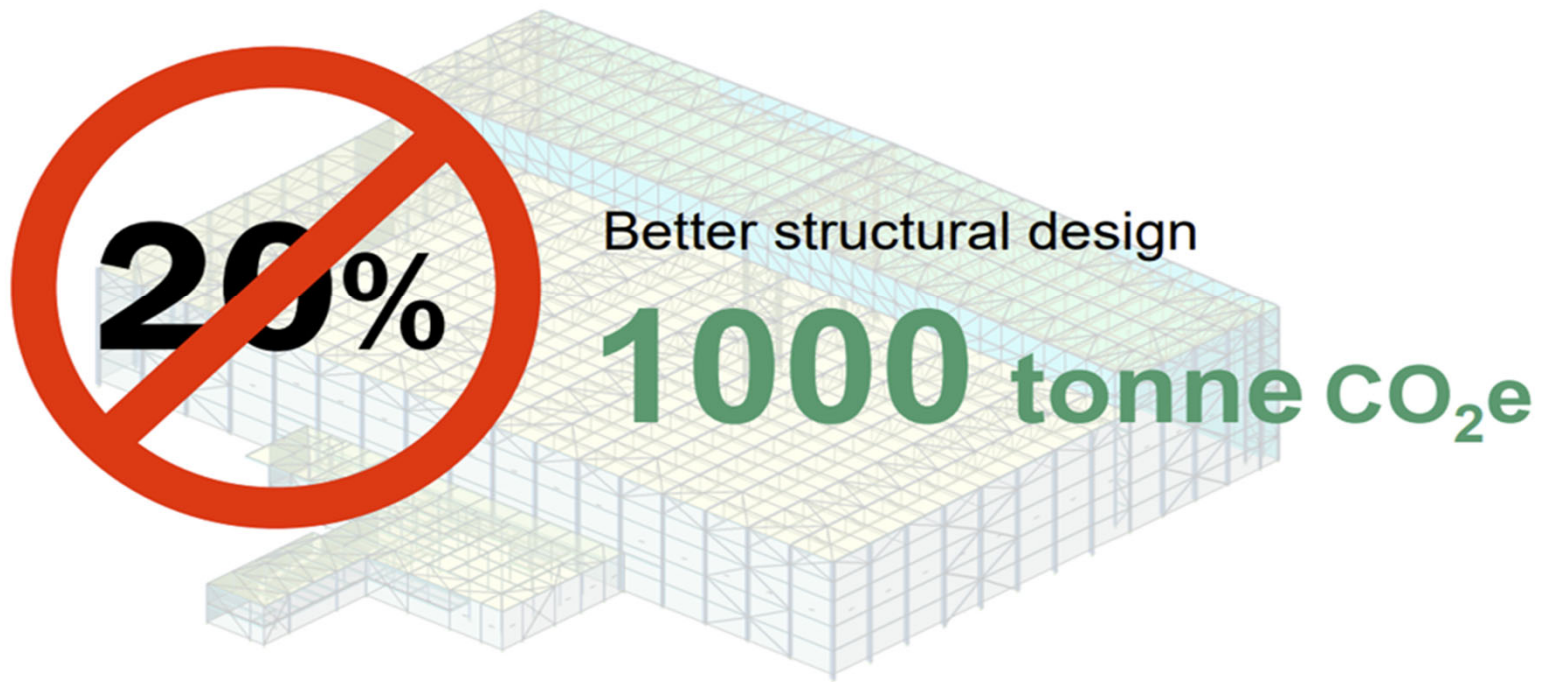
Look at improving our efficiency in the way we design. Greater emphasis on the reuse of materials, design life and flexibility of utility for all buildings.

Scale of Impact



# Better design and easy reuse of recyclable materials

Scale of Impact



Does this equate, fewer air trips would be very effective?

Scale of Impact

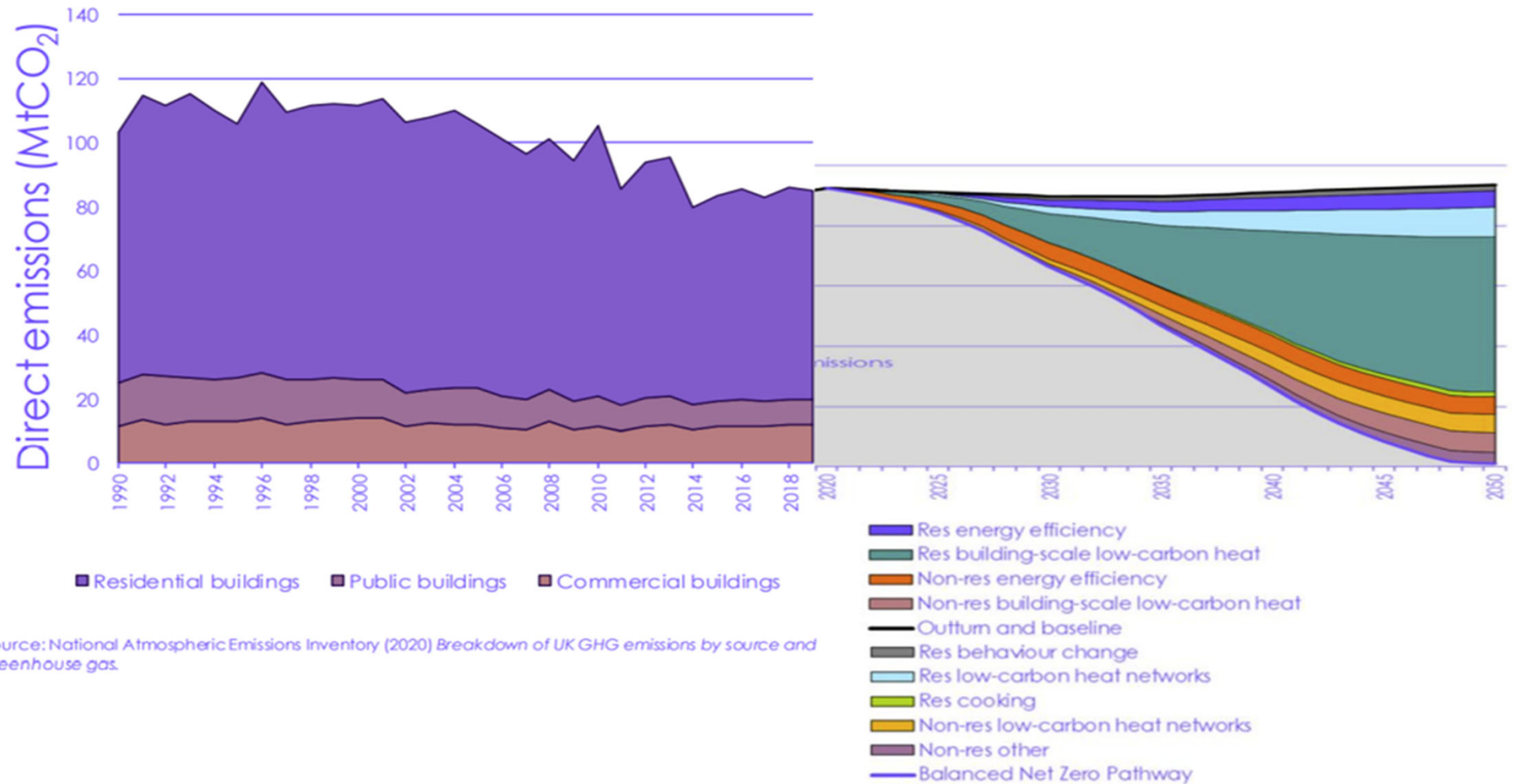


**1 tonne**



**1000 tonnes**

# Reduction where and how quickly?



# Numbers – Existing housing stock rate of improvement from 2023 - 2050

## The Retrofit Challenge...

Improving energy efficiency and decarbonising our energy supplies

28.3 Million homes identified through Council tax register

EPC rating	A	B	C	D	E	F	G	
EPC No's	43,874	2,568,888	6,502,713	8,733,079	3,638,257	935,444	286,979	22,709,234
% of EPC's	0.2	11.3	28.6	38.5	16.0	4.1	1.3	100.0

Estimated **24 Million homes** need retrofitting

**2450 + homes** per day, 7 days a week for the next **27 years**





# The projected costs, at present value

## The Market and Scale

- A multi-billion marketplace that needs collaboration and engagement:
  - **24 million homes** in the UK need retrofitting
  - **£20,000 average retrofit cost**
  - **24m x 20,000 = £480 billion**
- The UK Government target for the UK to reach net zero by 2050
  - **£17.1bn per year market (27 years)**
- Lenders developing green products to fund this market
- **Over 4m** private rented homes will be retrofitted by 2028
- Government likely to look at EPC rating requirements related to private home sales in the future

As well - international risks include Bad Politics and Conflict now facing us when we have all this to sort out

## Global climate and environmental crisis





The phrase 'survival of the fittest' is often incorrectly attributed to Darwin. In fact, it was coined by the philosopher Herbert Spencer in response to reading *Origin of Species*

Darwin used the term 'fit' two ways as I understand it, to denote a species or process which 'fitted' and was strong enough - describing complimentary or co-operational existence with other species. Rather like honey bees collecting nectar and in so doing, performing the task of broadcasting pollination for the plant offering the nectar. This is how civilizations prosper, and so the whole world should work together to do the right thing and care for our environment and work out how we will live together or.....