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Costs in the UK's energy transition

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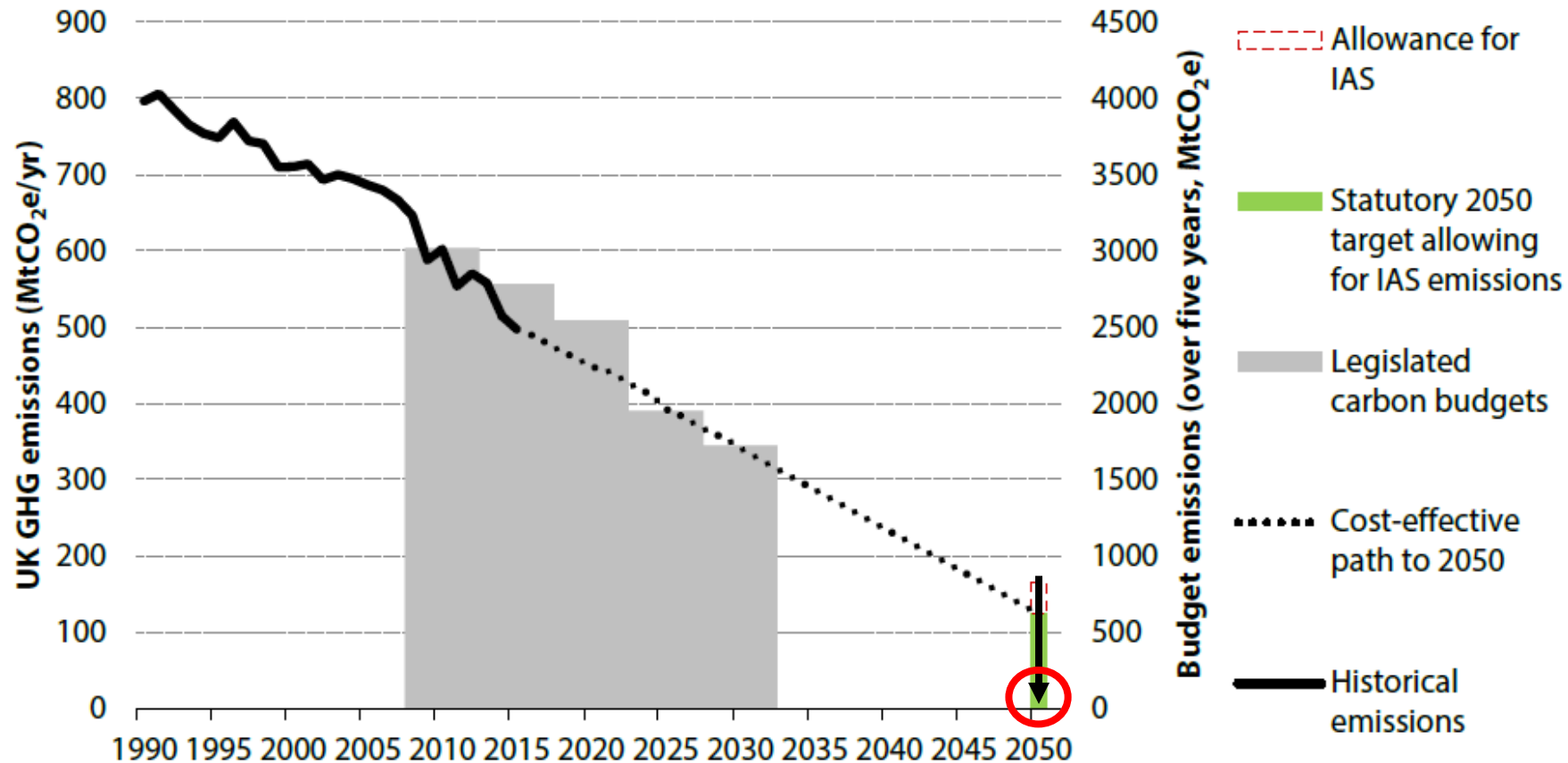


The Climate Change Act 2008

1	A goal	2050 Emissions Target
2	A pathway	Carbon Budgets
3	A toolkit	Requirement that Government brings forward policies
4	A monitoring framework	Committee on Climate Change to monitor progress and suggest changes

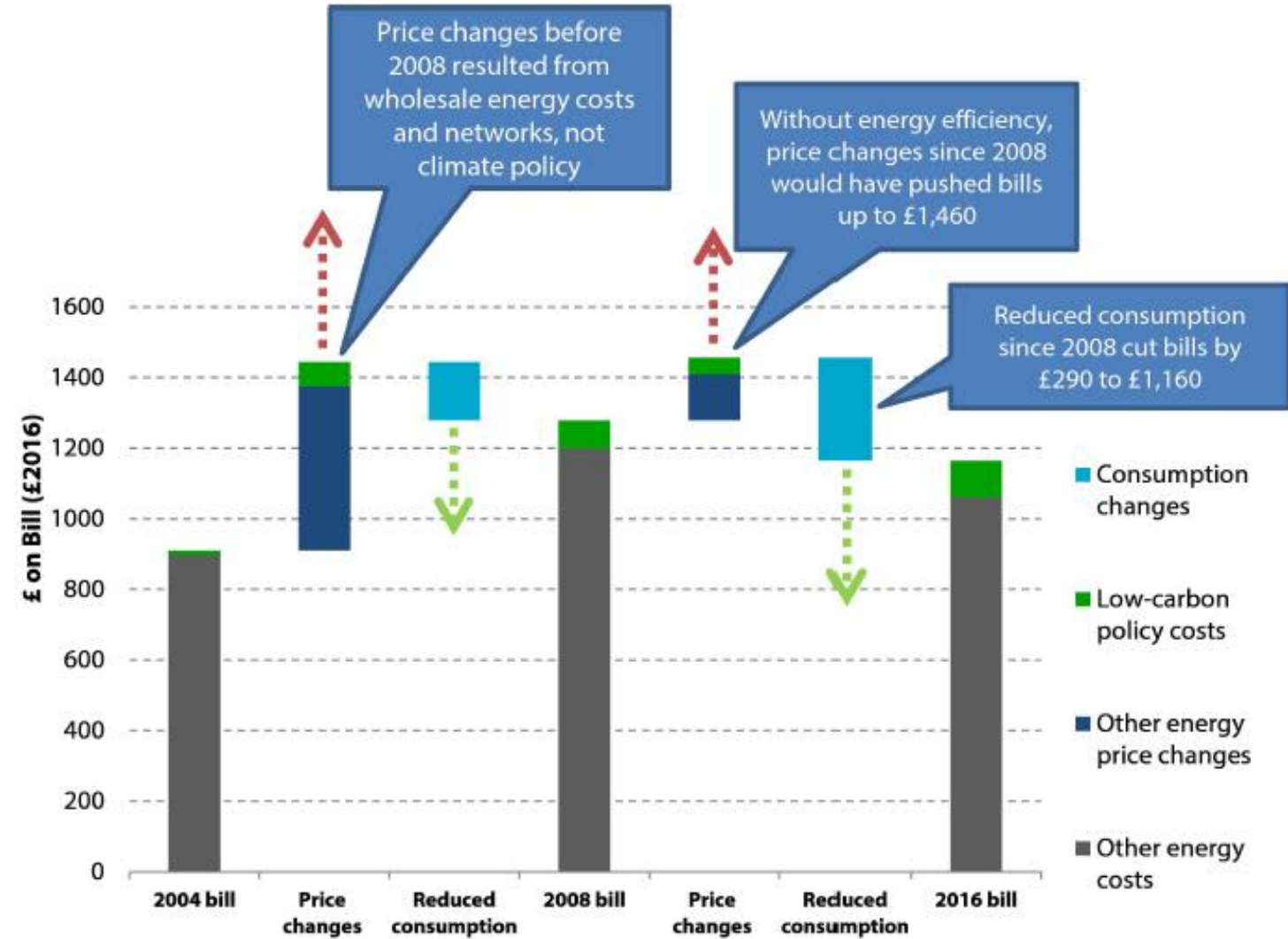
UK has 5 legislated carbon budgets that are stepping stones to the 2050 80% target

Carbon budgets and the cost-effective path to the 2050 target



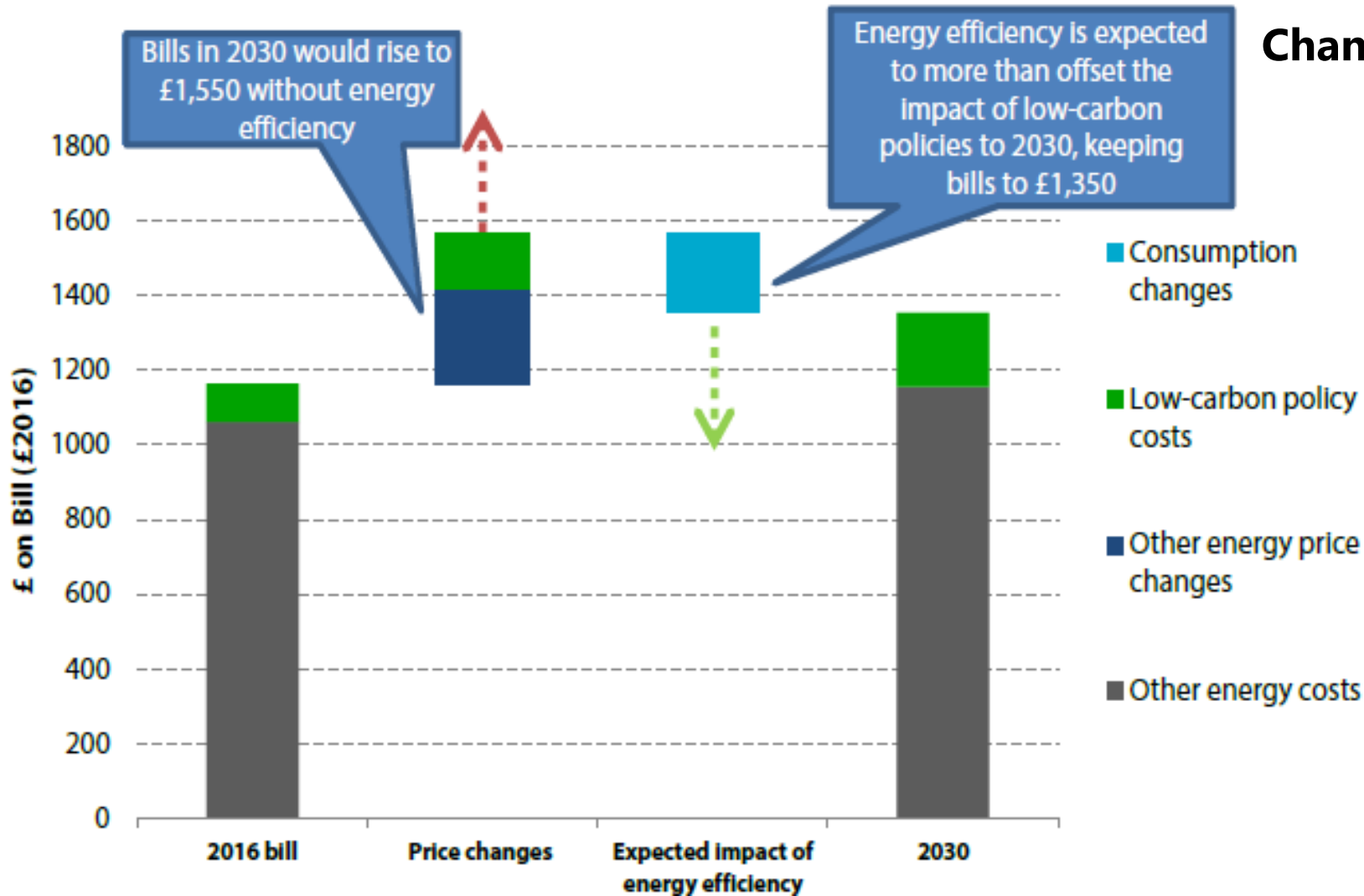
Increases in low-carbon policy costs on household bills have been more than offset by energy efficiency savings since 2004.

Changes in annual household energy bills (2004 to 2008 to 2016)



Source: CCC (2017) *Energy Prices and Bills*

We expect low-carbon costs to rise to 2030, in order to meet the 5th Carbon Budget, but there will be further energy efficiency opportunities.



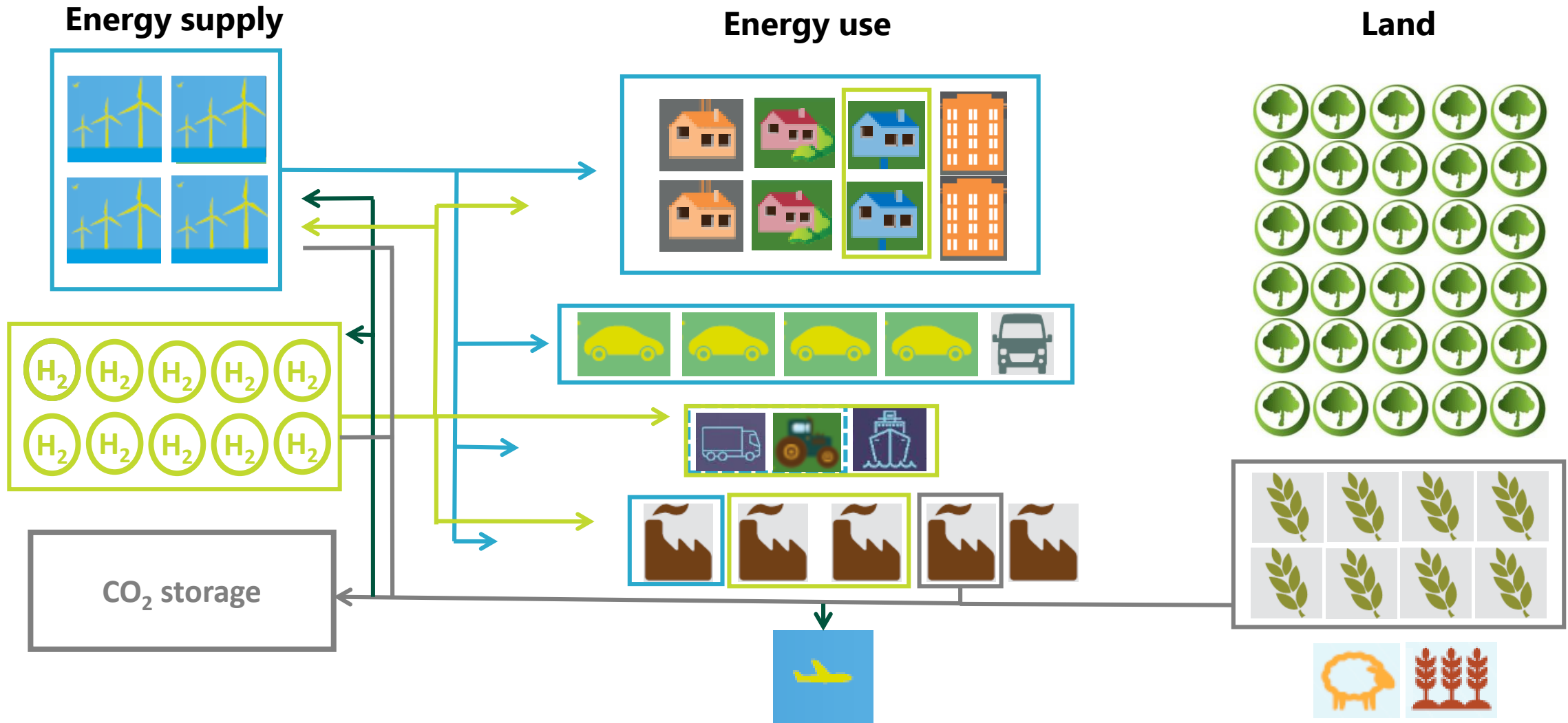
Source: CCC (2017) *Energy Prices and Bills*

- **The UK should legislate as soon as possible to reach net-zero greenhouse gas emissions by 2050.** The target can be legislated as a 100% reduction in greenhouse gases (GHGs) from 1990 and should cover all sectors of the economy, including international aviation and shipping. The Climate Change Act continues to offer appropriate governance.
 - The aim should be to meet the target **through UK domestic effort**, without relying on international carbon units (or 'credits').
 - **Now is the right time to set a net zero target.** It is technically possible, based on current consumer behaviours and known technologies, with prudent assumptions over cost reduction.
 - **An earlier date should not be set at this stage.** Some sectors could reach net zero earlier, but for most sectors 2050 appears to be the earliest credible date, to give time to develop speculative options as alternatives for any shortfalls. Avoiding the need for early capital scrappage or punitive policies.
 - **The target is an appropriate contribution to the Paris Agreement.** The UK can benefit from the international influence of setting a bolder target, using it as an opportunity for further positive international collaboration.
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- **Net zero target is only credible if policy to reduce emissions ramps up significantly**
 - The target can only be delivered with a strengthening of policy to deliver emissions reductions across all levels and departments of government. This will require strong leadership at the heart of Government. Delivery must progress with far greater urgency.
 - Policies must be designed with businesses and consumers in mind. They must be stable, long-term and investable. The public must be engaged, and other key barriers such as low availability of necessary skills must be addressed.
 - Report emphasises previous CCC recommendations for: Heating buildings; CCS; Electric vehicles; Agriculture; Waste; Low Carbon Power.
 - With new recommendations for stronger approaches to: Industry; land use; HGVs; aviation and shipping; and GHG removals.
- **Overall costs are manageable, but must be fairly distributed.** Rapid cost reductions during mass deployment for key technologies mean that net zero can be met at an annual resource cost of up to 1-2% of GDP to 2050, the same cost as the previous expectation for an 80% reduction from 1990.
- **HM Treasury should undertake a review of how the transition will be funded and where the costs will fall.** It should develop a strategy to ensure this is, and is perceived to be, fair. A broader strategy will also be needed to ensure a '**just transition**' across society, with vulnerable workers and consumers protected.

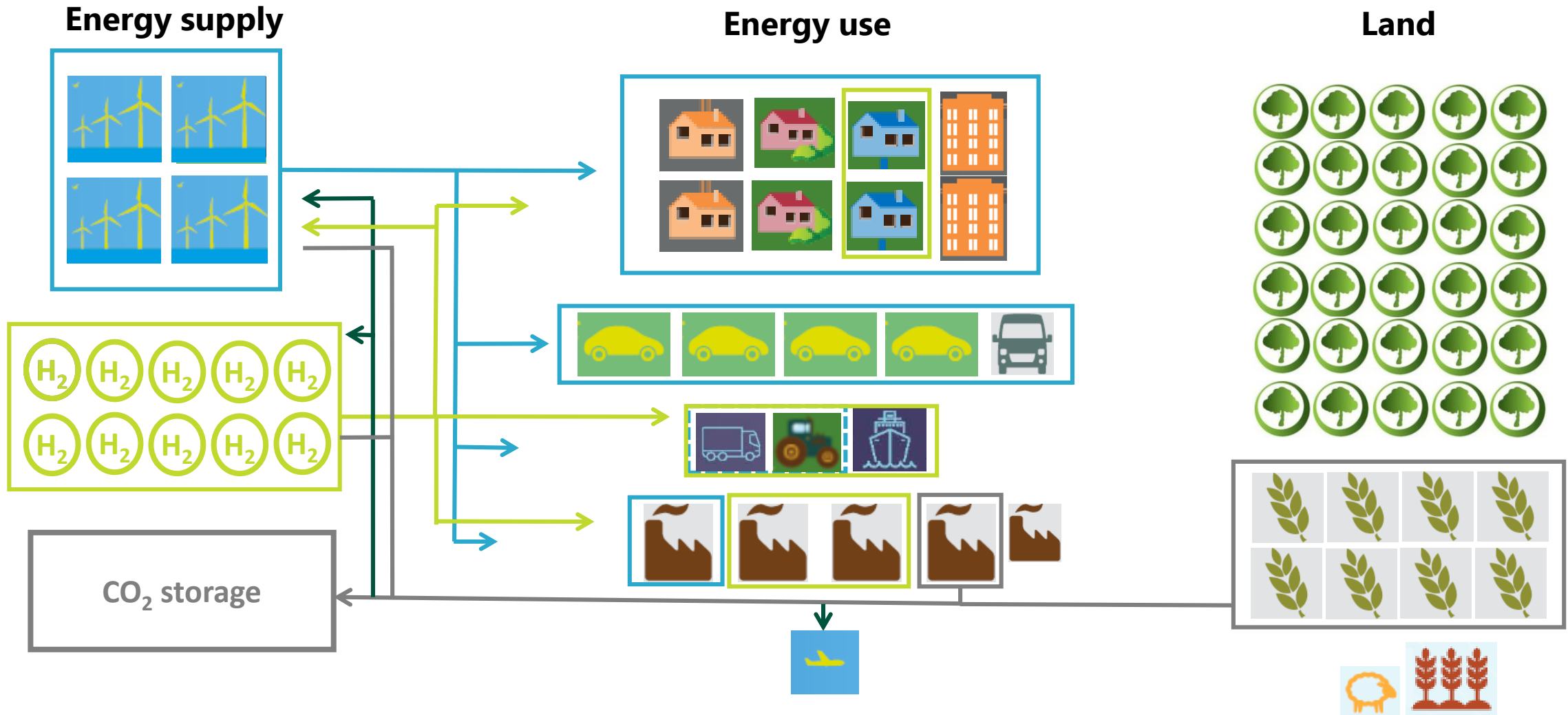
Reaching net-zero emissions in the UK

How UK net-zero scenarios can be delivered



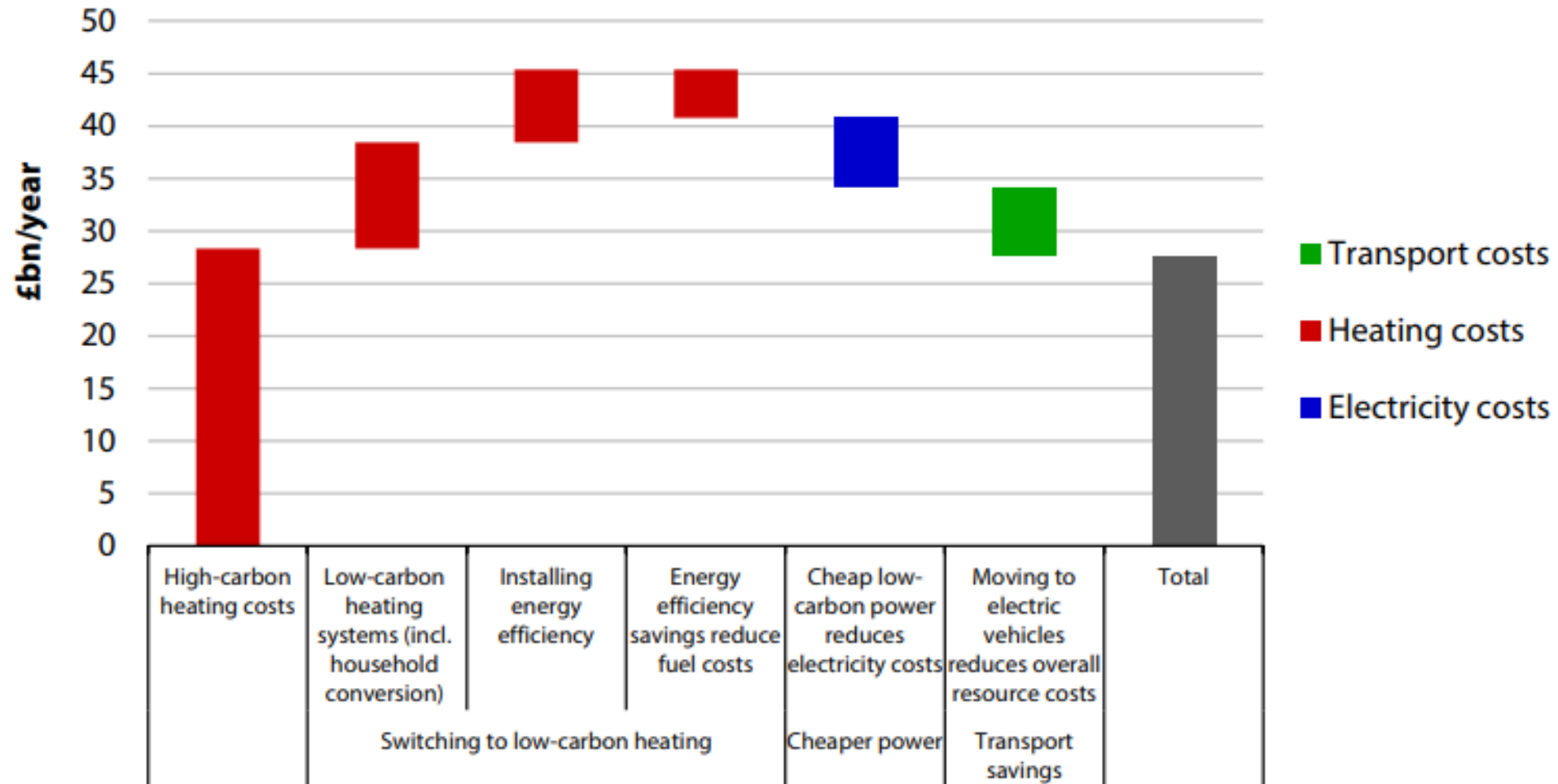
Reaching net-zero emissions in the UK

How UK net-zero scenarios can be delivered



Falling costs for zero-carbon power and transport have the opportunity to offset additional costs in low-carbon heating

Annual costs in a transition to low-carbon heating



Thank you.

