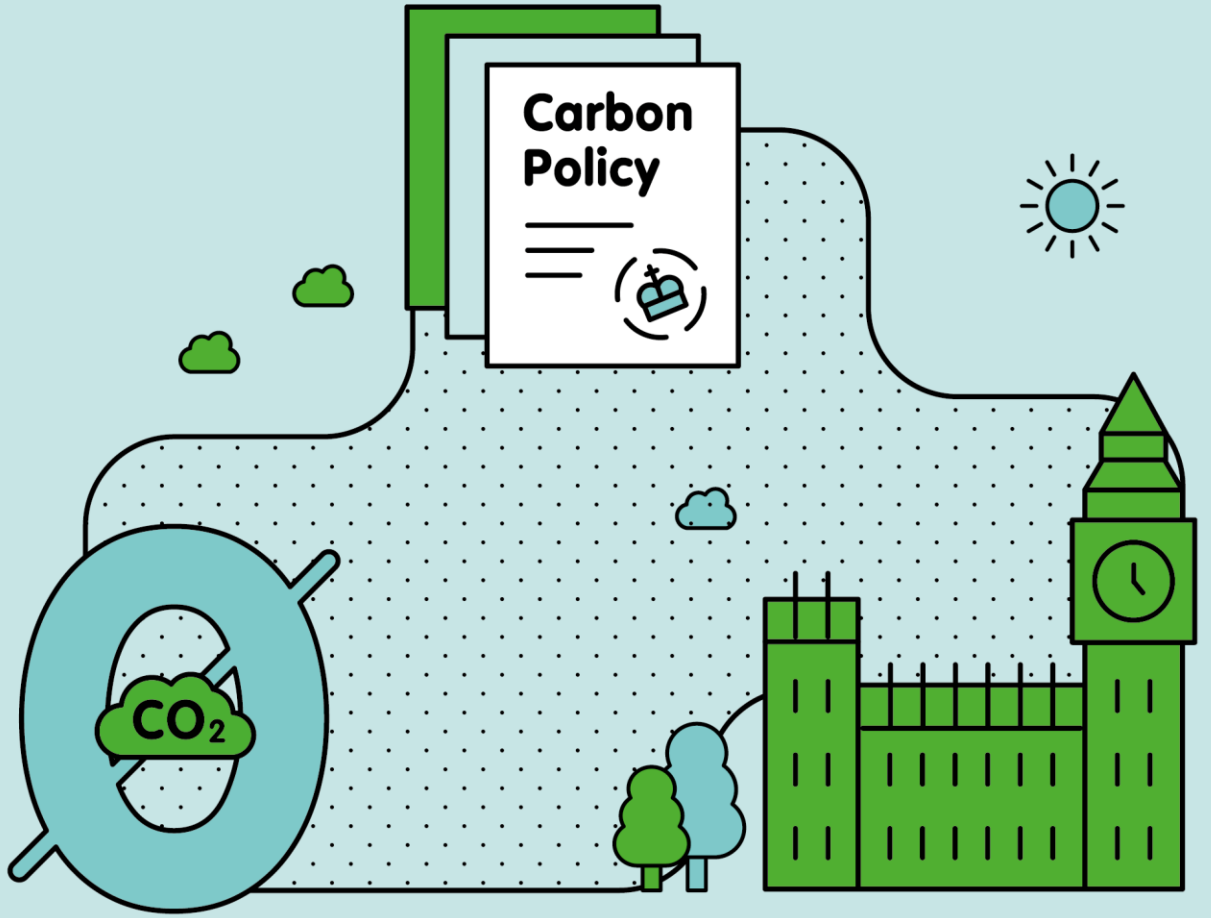
Accelerating to Net Zero:
A sector led approach to an economy-wide carbon policy framework



Dr. Danial Sturge

Energy Policy Advisor

Wednesday 3rd March 2021

About Energy Systems Catapult

Mission: Unleash innovation and open new markets to capture the clean growth opportunity

200 Innovation experts

Hubs in Birmingham and Derby

We work with Innovate UK

Established, overseen and part-funded by Innovate UK. Independent from Government. Not for profit

Bridge the gap between stakeholders in the sector

Supporting innovators

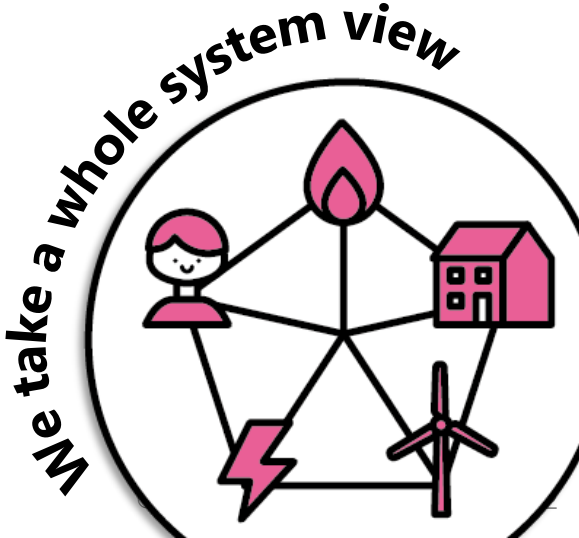
Research

Trials

Systems engineering

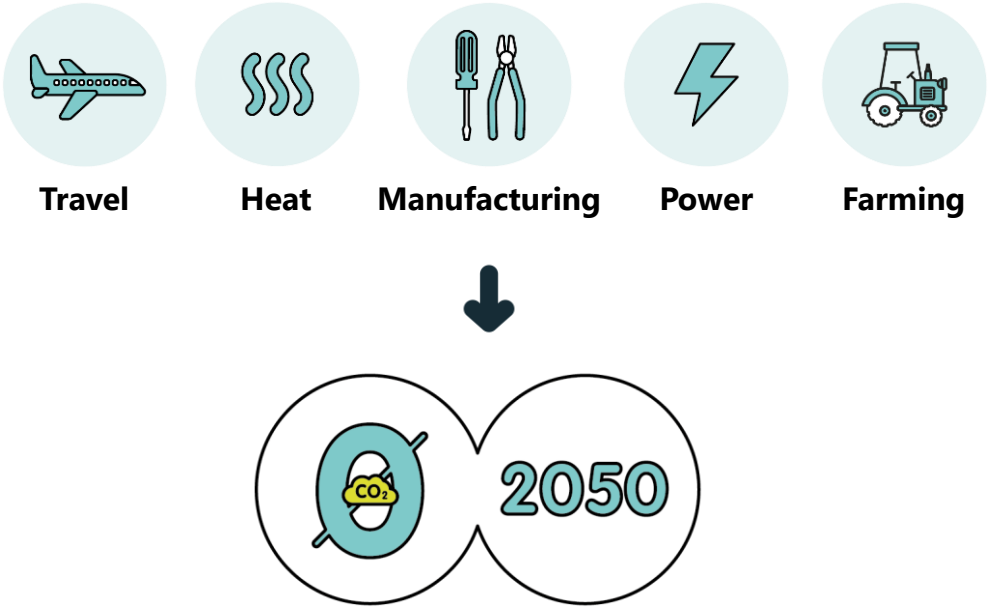
Digital

Modelling and simulation



Only thirty years remain before the UK must legally reach Net Zero emissions

All major emitting sectors will need to change radically to get as close as possible to zero emissions by 2050.



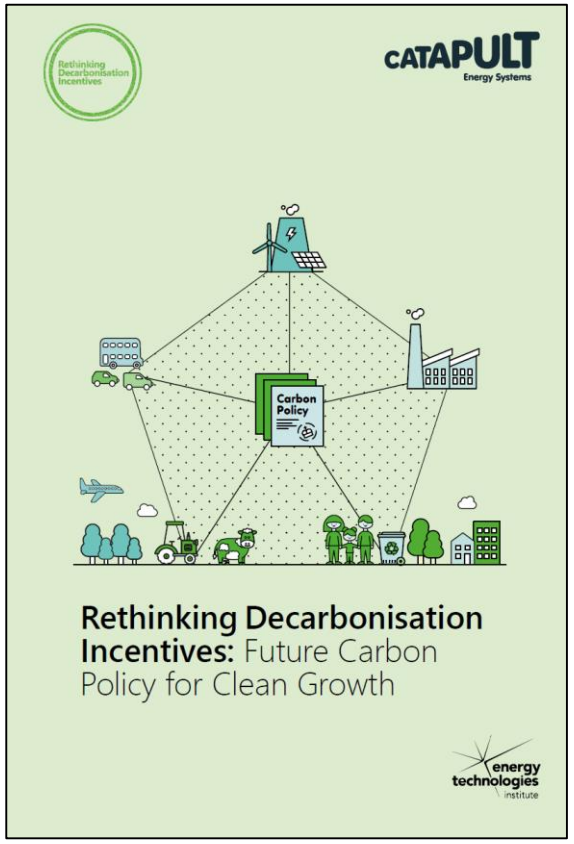
Rethinking Decarbonisation Incentives

Our earlier work showed how current policies are too uneven and weak to achieve this. The existing policy framework is incompatible with Net Zero.

Net Zero Carbon Policy

Our thought leadership project, focusing on how the UK can build an innovation-friendly, economy-wide framework for Net Zero.

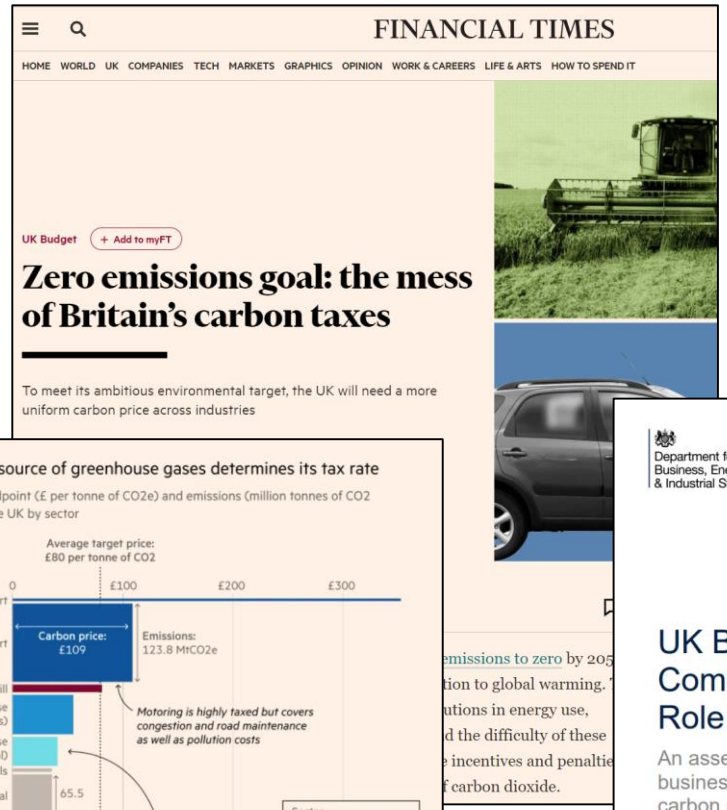
We have published a number of *Rethinking Decarbonisation Incentives* and *Net Zero Carbon Policy* project reports to date

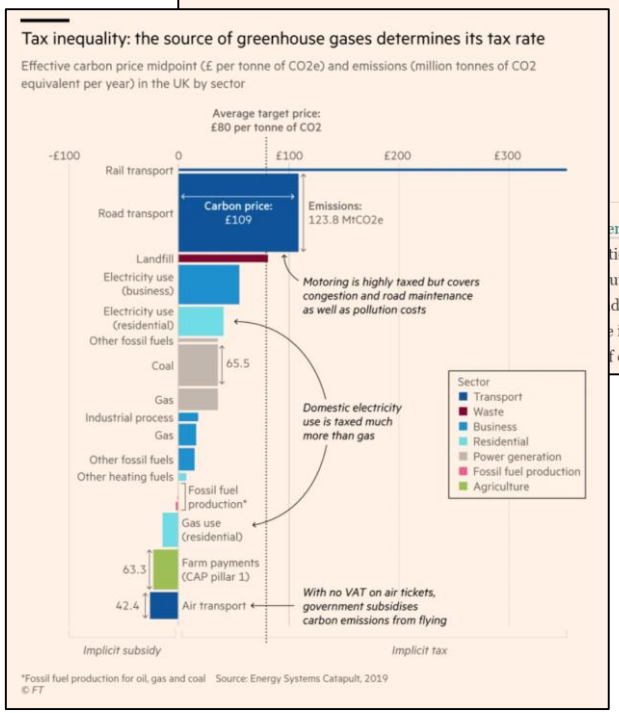


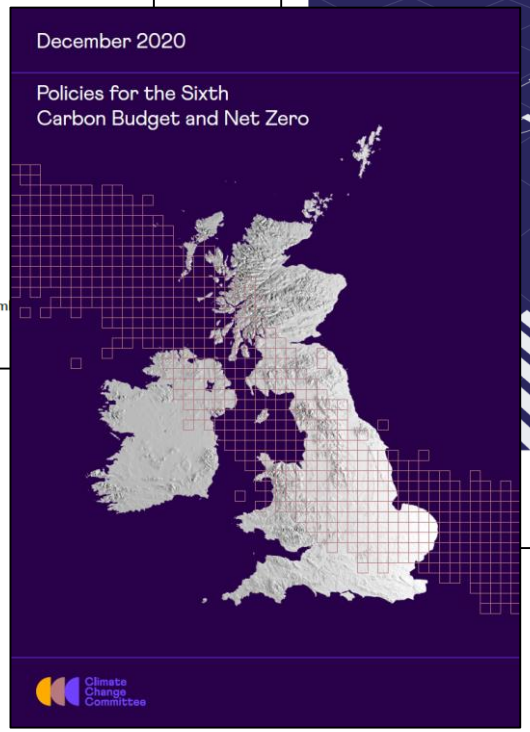
Read More:

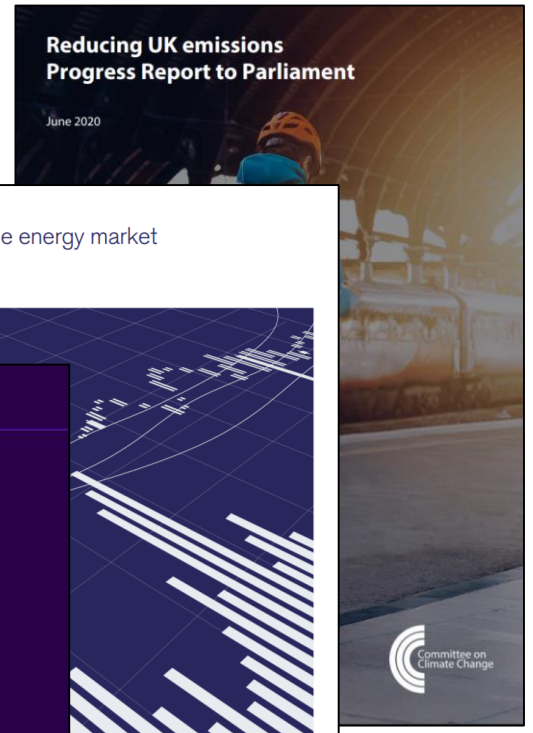
- Rethinking Decarbonisation Incentives: Future Carbon Policy for Clean Growth
- Accelerating to Net Zero: A Sector Led Approach to an Economy-Wide Carbon Policy Framework
- Developing Carbon Credit Markets
- Industrial Decarbonisation: Net Zero Carbon Policies to Mitigate Carbon Leakage and Competitiveness Impacts

Our work has also been widely cited, including:

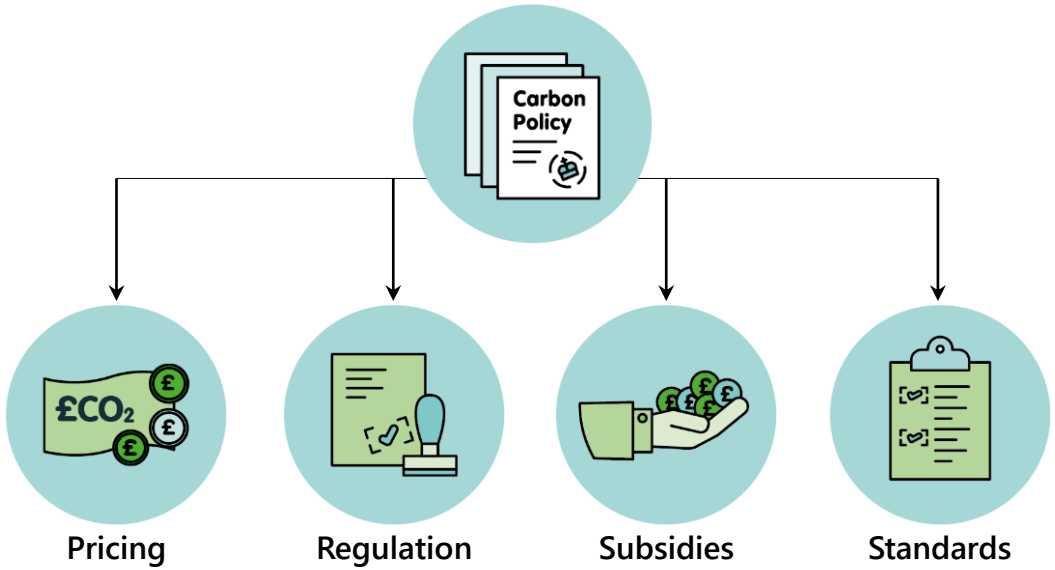








Carbon policy is a shorthand term for all policies that require or incentivise action to reduce or remove GHG emissions



Carbon policies should be designed to:

Enable markets to discover a broadly cost efficient and socially beneficial pathway to Net Zero

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Recognise the importance of fairness and societal acceptability for the mix of changes

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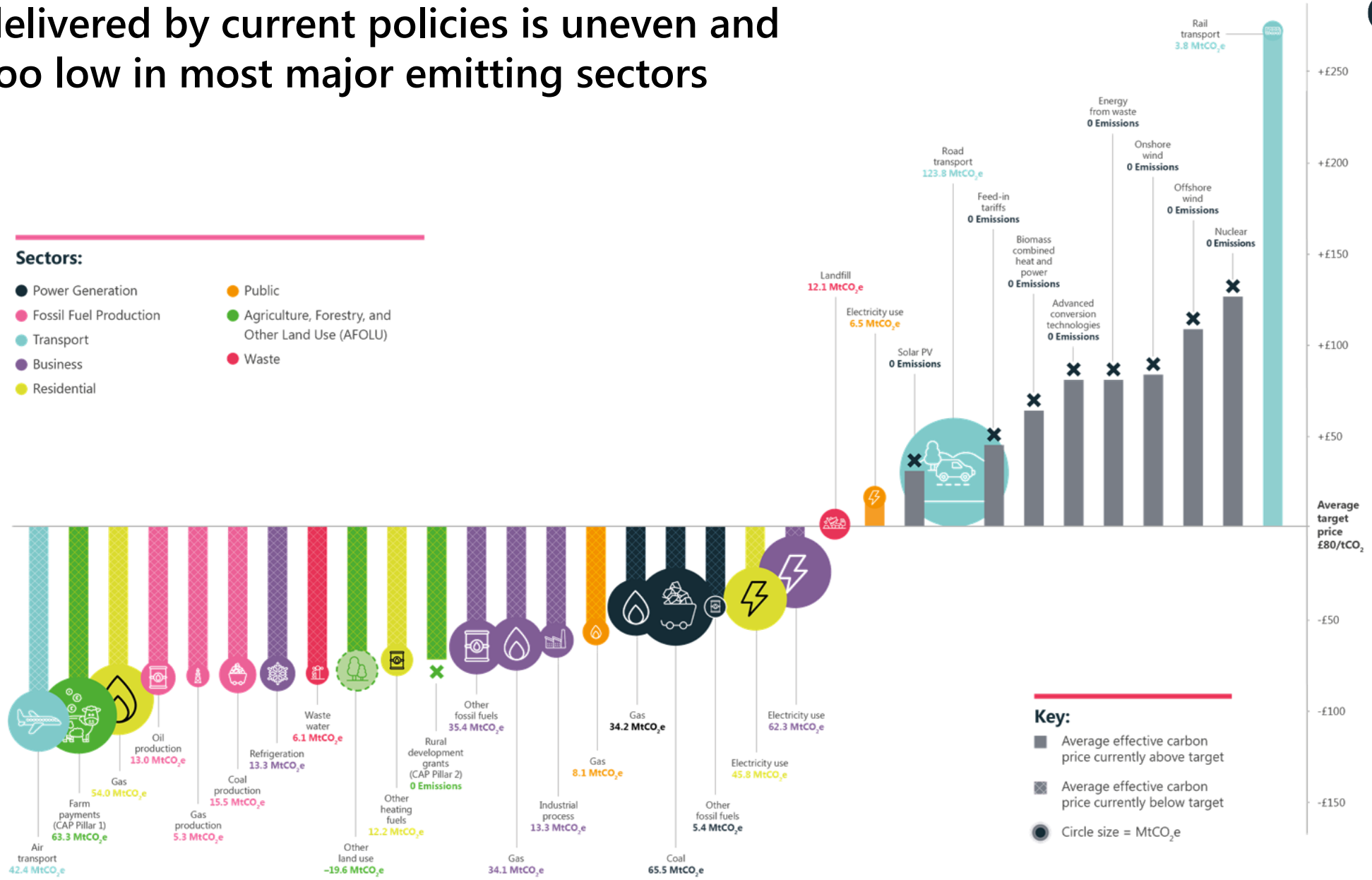
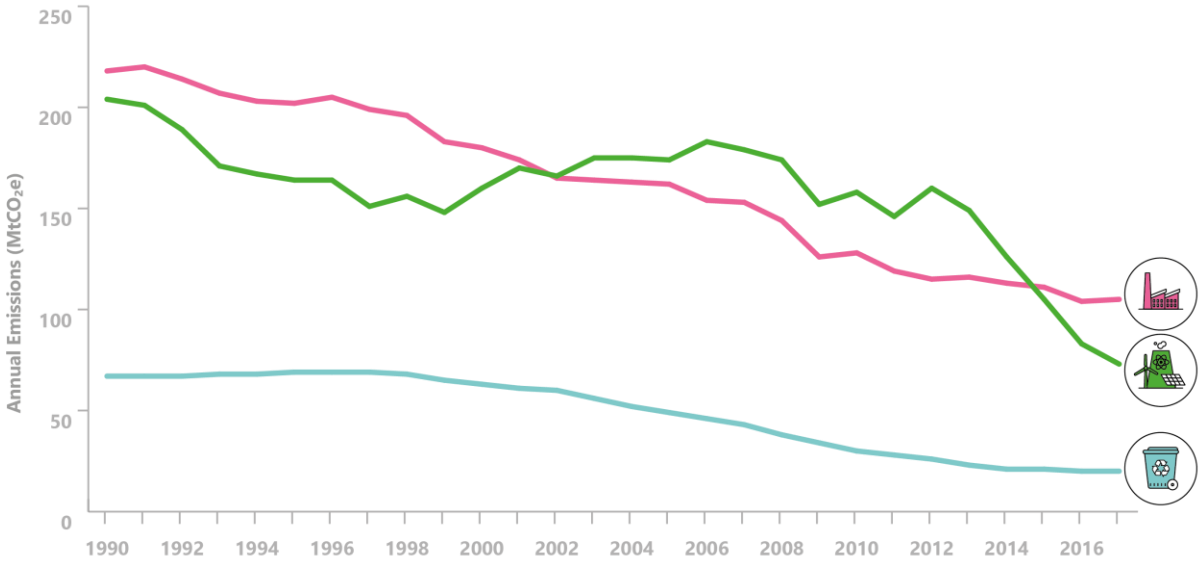
Be supported by packages of complementary policies, including innovation support

The pattern of effective carbon prices delivered by current policies is uneven and too low in most major emitting sectors

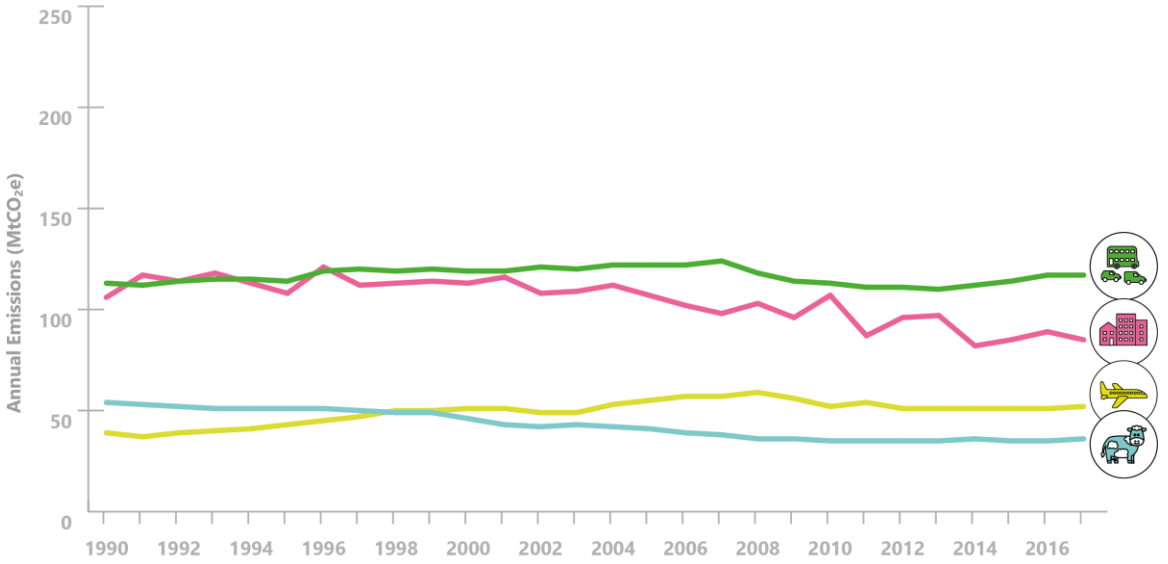


This has resulted in a flatlining across key sectors. Where progress has been made, this has been a direct result of a mix of sector specific carbon and complementary policies as part of wider policy packages with innovation and emissions reduction at its heart

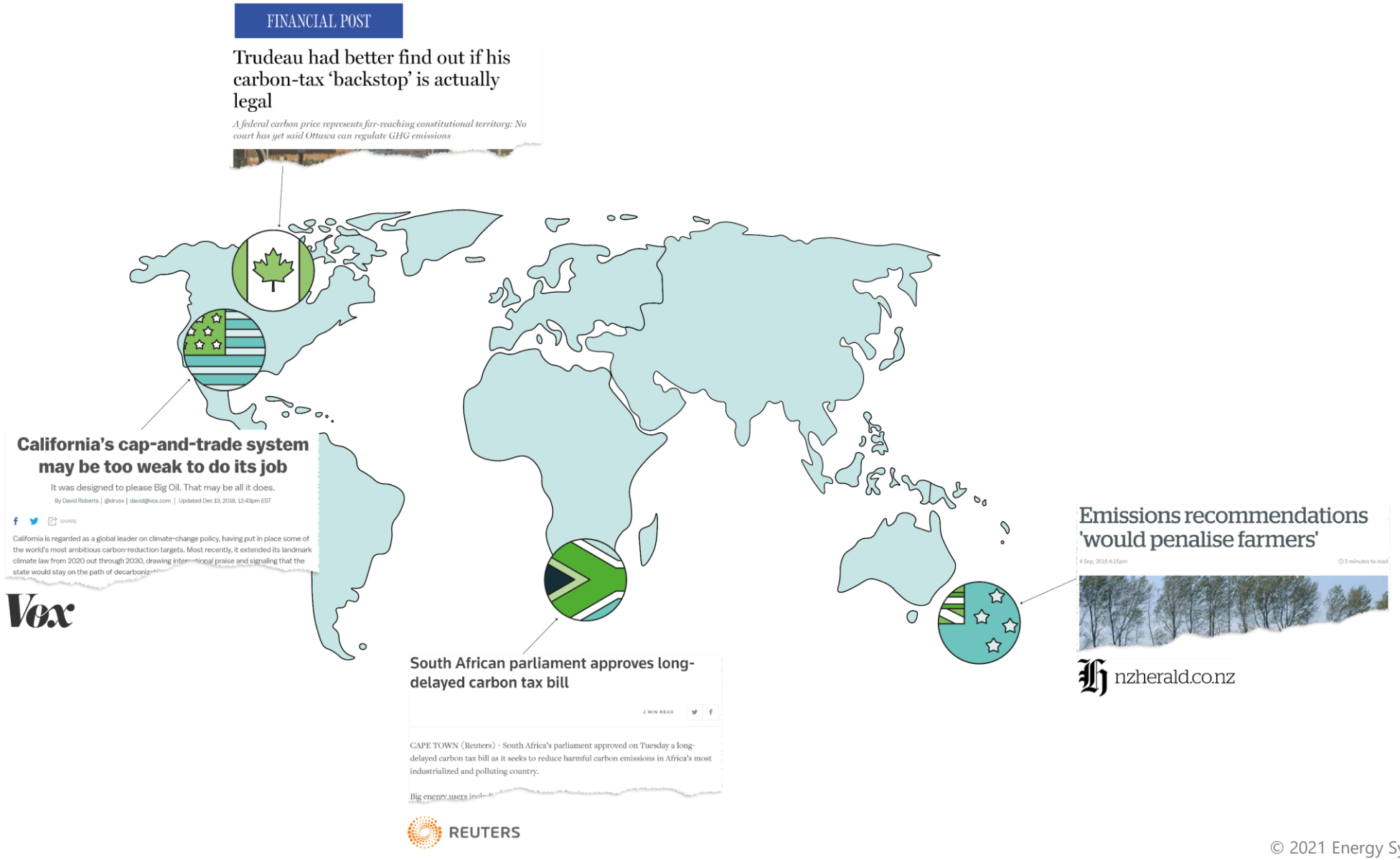
'Progressing Sectors'



'Flatlining Sectors'



International experience highlights the challenges of introducing an enduring economy-wide carbon pricing policy



We propose the following guiding principles for developing and implementing the carbon policies (as part of wider policy packages) necessary to establish an economy-wide framework

1. Economy-wide in scope
2. A whole system approach
3. Technology, vector, and material neutral as far as possible
4. Create coherent market incentives for low and zero carbon choices
5. Market signals need to be supported by complementary policies
6. Support a just transition
7. Long-term credibility

A sector led approach can open a pathway to an economy-wide carbon policy framework

Sectoral Carbon Policy

- Implement tailored sectoral carbon policies
- Cover all major emitting sectors
- Progressively strengthen incentives or mandates to drive required pace

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Packages of Complementary Policies

- Implement complementary policy packages to support carbon policies (e.g. innovation support or access to finance)
- Address key sectoral barriers to change (e.g. transitional or distributional impacts)

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Linking Sectoral Carbon Policies

- Introduce trading and validated carbon credit market mechanisms
- Link sectoral policies with carbon markets
- Enable an integrated economy-wide framework of incentives

- Enables more rapid progress than relying on strengthening or extending generic carbon pricing policy.
- Corrects current sectoral gaps and imbalances in decarbonisation incentives.
- Opens a pathway to an economy-wide carbon policy framework linked by validated market mechanisms.
- Creates a credible market framework to accelerate the transition to Net Zero.

Sector carbon standards can be an alternative (or addition) to explicit carbon pricing policies

These can be used to create stable market signals to drive investment and innovation, as well as combined with complementary policy packages designed to address sector specific market conditions, barriers, and social or transitional challenges.

Technology-neutral, which provides flexibility in compliance and enables longer-term cost efficiency.

Transparently aligned with carbon budgets, thereby providing long-term certainty and enhancing credibility for investors.

Flexible and tradeable, with trading of validated carbon credits within (and potentially between) sectors providing an additional level of flexibility in compliance strategies.

A pathway to an economy-wide carbon policy framework over the coming decades

CATAPULT Energy Systems

Near-Term: Scaling Up

Strengthen existing and, where there are gaps, introduce new sectoral carbon policies to scale up low and zero carbon technologies, vectors, and services.

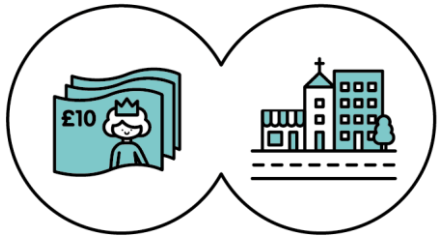
Medium-Term: Rolling Out

Continued development and alignment of sectoral carbon policies with carbon budgets.

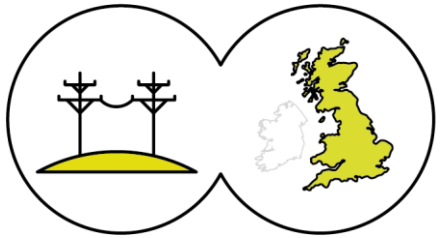
Long-Term: Reaching Net Zero

Link sectoral carbon policies via trading of validated carbon credit markets (both within the UK and internationally).

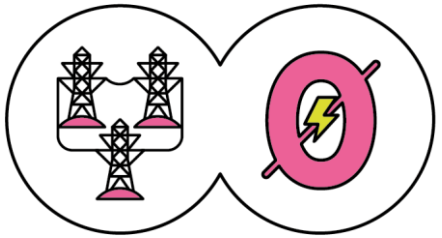
An example of a sector led approach, using a combination of standards, incentives, regulation, and planning to decarbonise buildings



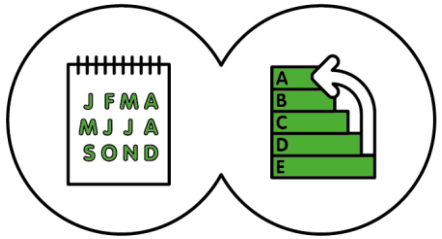
1. Fund place-based low carbon programmes to build supply chain and skills



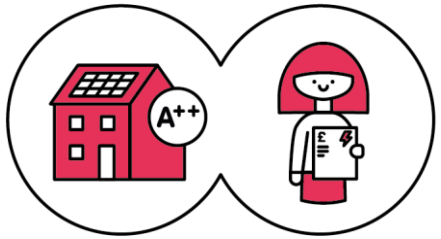
2. Roll our Local Area Energy Planning (LAEP)



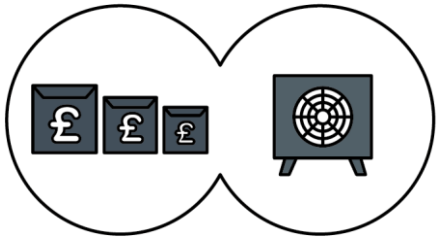
3. Make energy networks invest for Net Zero (by adapting the RIIO2)



4. Phase in minimum carbon performance requirements for all building owners



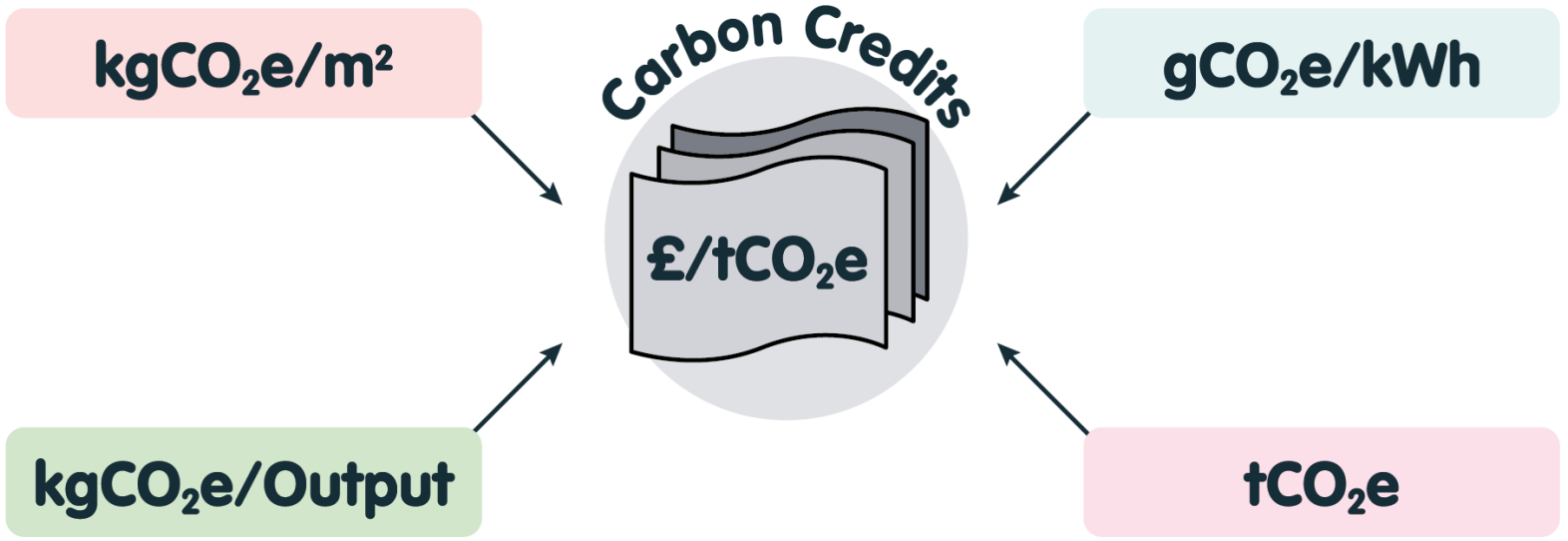
5. Reward low carbon choices through energy bills



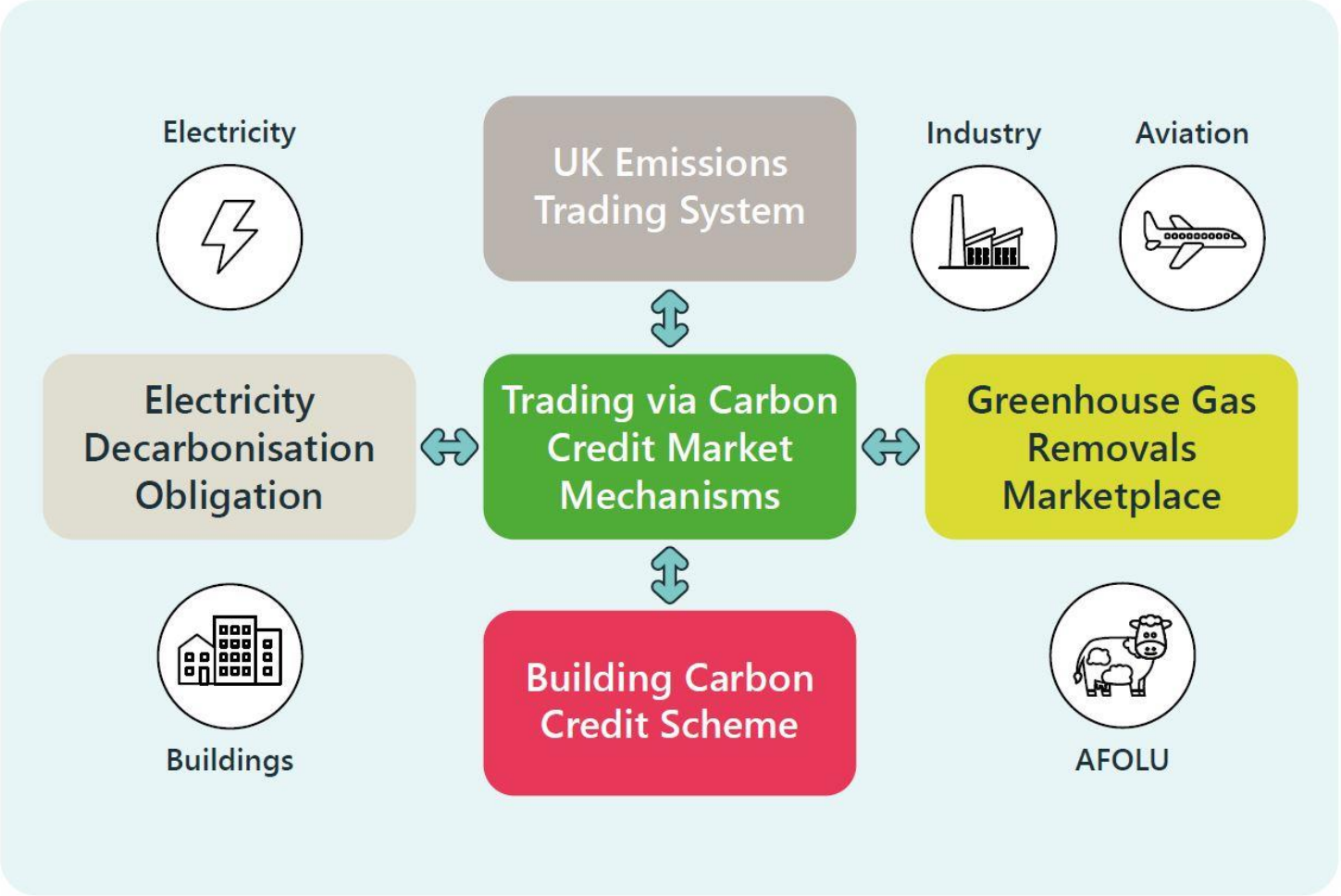
6. Develop low cost green finance for zero carbon solutions

More info: Towards an Enduring Policy Framework to Decarbonise Buildings.

To enable linkages, sector specific carbon metrics and standards can be converted into a common ‘currency’



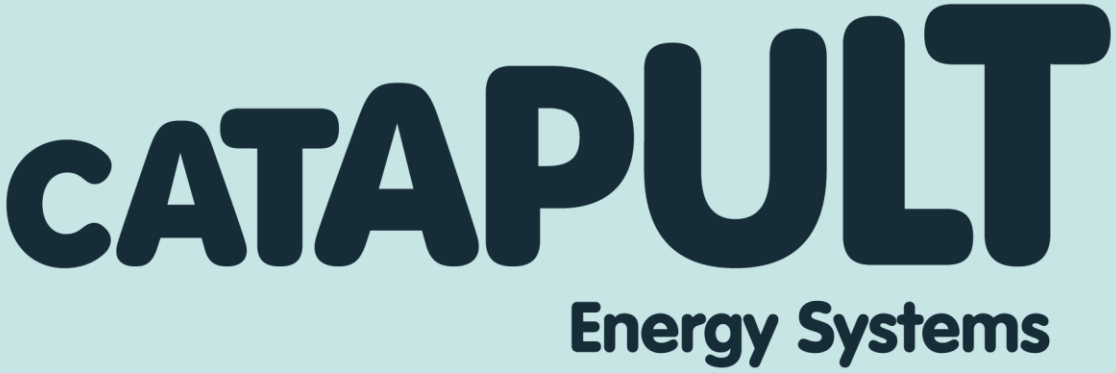
Sectoral carbon policies can be linked by trading via carbon credit market mechanisms to enable an integrated economy-wide framework of incentives



Linking carbon credit markets requires effective scientific and regulatory oversight to ensure economic incentives are driving genuine emissions reduction and removal

- **One possible solution is to provide additional powers to an existing regulator or by setting up a new regulator, with responsibilities including:**
  - Establish the principles and frameworks for carbon accounting across the economy.
  - Track the latest science in monitoring, reporting, and verification of emissions and how it is reflected in both compliance and voluntary carbon markets, as well as for consumption-based (or embodied) emissions.
  - Take account of attributes such as risk, permanence, level of empirical confidence, additionality etc.
  - To ensure that the monitoring and reporting of emissions is robust, transparent, and accurate as far as possible, along with consistent verification across all major emitting sectors.
- **We will be publishing a report exploring this further in the Spring:**

The Case for an Economy-Wide Carbon Regulator



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