

Energy Systems Catapult: Consultation Response

The Future of UK Carbon Pricing

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Dear Emissions Trading Team,

About Energy Systems Catapult

Energy Systems Catapult was set up to accelerate the transformation of the UK's energy system and ensure UK businesses and consumers capture the opportunities of clean growth. The Catapult is an independent, not-for-profit centre of excellence that bridges the gap between industry, government, academia and research. We take a whole systems view of the energy sector, helping us to identify and address innovation priorities and market barriers, in order to decarbonise the energy system at the lowest cost.

About Rethinking Decarbonisation Incentives

Energy Systems Catapult (ESC) has recently published a major project, Rethinking Decarbonisation Incentives (RDI), which has explored how to improve economic incentives for decarbonisation across the UK economy.¹ Developing a coherent carbon policy (see Figure 1 for definition) framework is essential if the UK wants to meet its 'net zero' emissions target, and promote greater innovation and clean growth in low carbon goods and services.

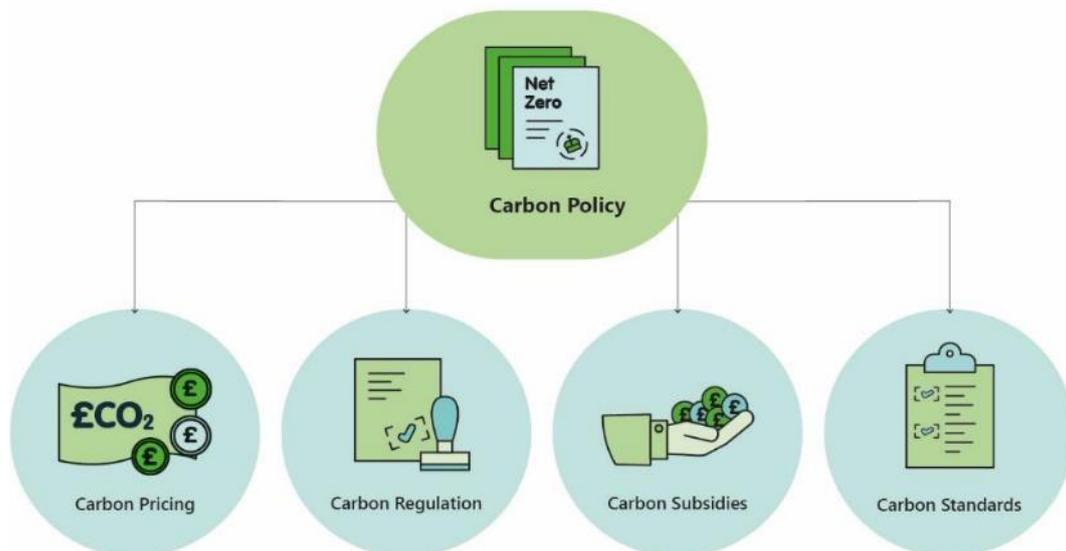


Figure 1 Carbon policy is used as a shorthand for a wide set of policies that create economic incentives to reduce greenhouse gas emissions.

The UK has a complex mix of policies (including taxes, subsidies, standards, and regulations) which give rise to uneven and incomplete incentives to reduce greenhouse gas (GHG) emissions across

¹ ESC (2019). Rethinking Decarbonisation Incentives: Future Carbon Policy for Clean Growth [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2019/06/Rethinking-Decarbonisation-Incentives-Future-Carbon-Policy-for-Clean-Growth.pdf>

the economy, as illustrated in Figure 2.² The UK's current mix of policies creates 'effective carbon prices' across most of the economy that are too low to bring forward sufficient investment and innovation to reduce emissions. Where incentives have been in place, they have helped deliver significant reductions in GHG emissions (i.e. in the power and waste sectors). Therefore, steps to improve the coherency and coverage of carbon policy, and allowing continued improvements in their design as considered in this consultation is welcome.

² Blyth, W (2018). Current Economic Signals for Decarbonisation in the UK [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2018/07/2018-07-20-RDI-WP1-Current-Economic-Signals-for-Decarbonisation-in-the-UK.pdf>

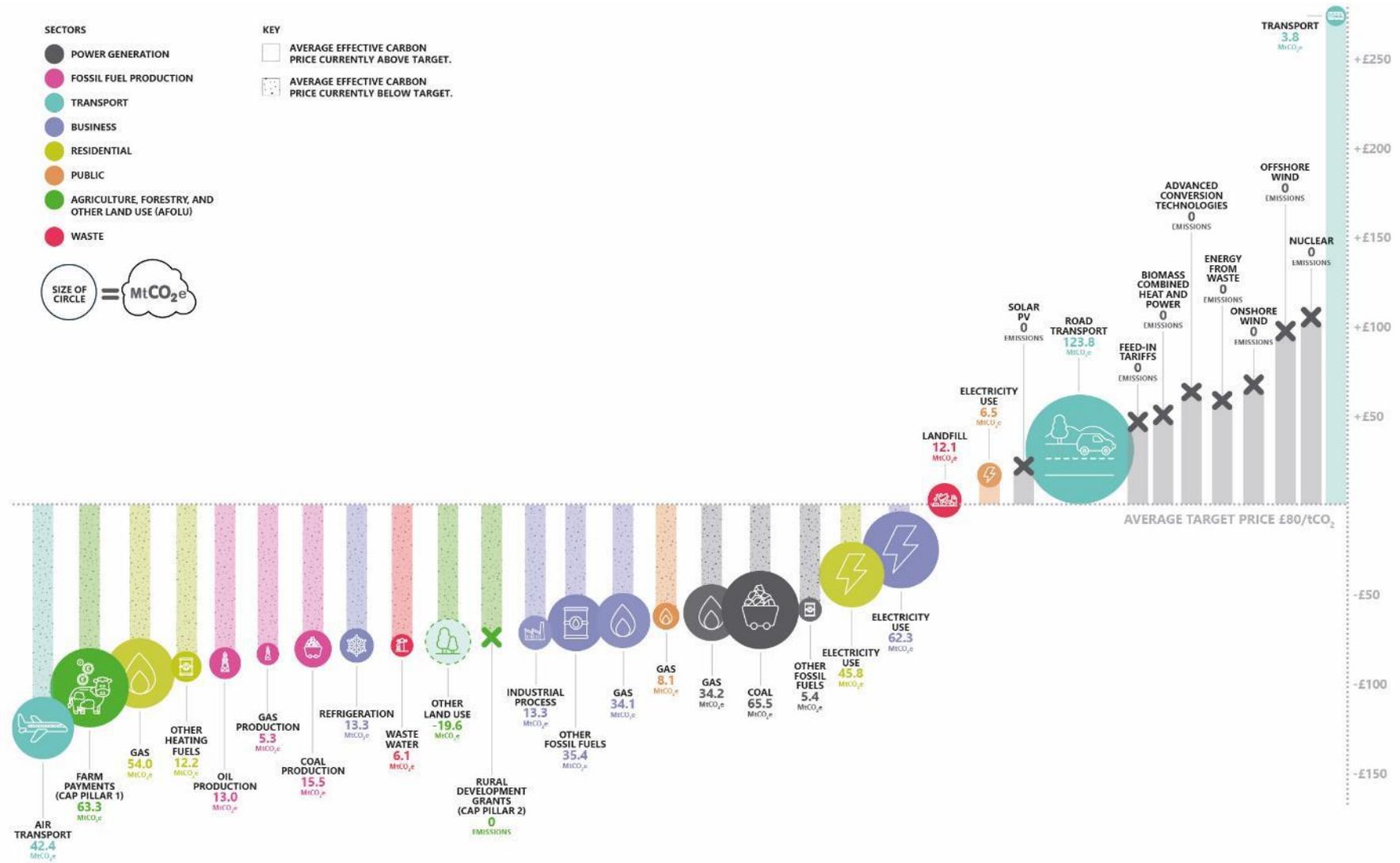


Figure 2 Effective carbon prices and emissions in the UK by sector.

Building on this analysis, along with key findings³ from a set of eleven international case studies⁴, we assessed a set of broad carbon policy reform options⁵. Our findings show that the UK should develop a pathway towards a more coherent economy-wide framework of carbon policies, which includes introducing a UK Emissions Trading System (see Figure 3), potentially linking with the EU ETS in the future.⁶ We also found that extending carbon policy was very important, in particular in areas of the economy that provide little, or indeed negative, incentives to reduce emissions. 'Carbon standards'⁷ could play a key role as part of that pathway, especially for addressing policy gaps (e.g. residential heat). Integrating carbon policy across sectors by developing tradability or other linkages could provide more flexibility and greater scope for markets to reveal least-cost combinations. Linking domestic carbon credit markets could also open up future scope for linking to international carbon markets (e.g. EU ETS). This could then go further, with linkages across sectoral policies (e.g. for agriculture and aviation) to optimise the longer-term contribution of greenhouse gas removal technologies.

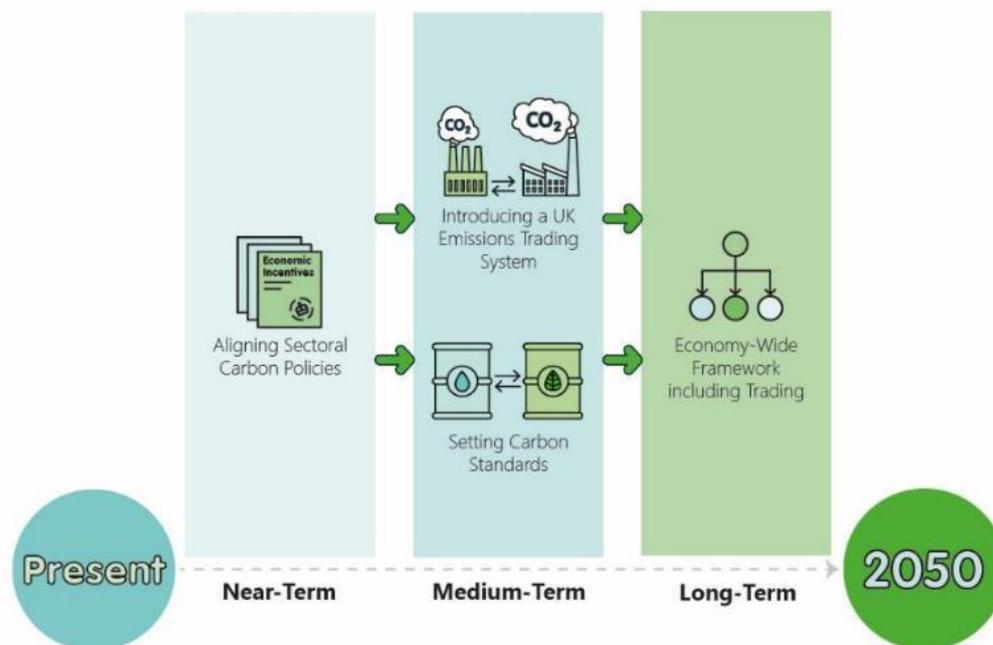


Figure 3 The potential direction of travel for carbon policy to 2050.

³ Ricardo (2018). Synthesis of Key Findings from Case Studies [online]. Available from: https://es.catapult.org.uk/wp-content/uploads/2019/02/Catapult_RDIsynthesiskeyfindings_report.pdf

⁴ Ricardo (2018). RDI Policy Case Studies [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2018/10/RDI-Policy-Case-Studies-FINAL.pdf>

⁵ Ricardo (2018). Reform Options: Initial Thinking [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2018/11/RDI-ReformOptionsReport.pdf>

⁶ ESC (2019). Rethinking Decarbonisation Incentives: Future Carbon Policy for Clean Growth [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2019/06/Rethinking-Decarbonisation-Incentives-Future-Carbon-Policy-for-Clean-Growth.pdf>

⁷ A carbon standard would set an obligation on parties to reduce the carbon content of energy supplied. Parties could meet the standard either by reducing the carbon from their portfolio or buying credits from other parties. Trading credits (within and between sectors) in this way leads to cost-effective emissions reduction.

Our Position on the Future of UK Carbon Pricing

We recognise the case for the Government's preferred option of creating and implementing a UK ETS that is closely aligned and linked to the EU ETS. This would ensure policy continuity for sectors, while also enabling the UK to benefit from participating in a wider carbon market.

However, findings from the Rethinking Decarbonisation Incentives project suggests that establishing, in the near-term, a standalone UK ETS will provide the UK with the opportunity to set itself on a pathway to an economy-wide framework of carbon polices required to achieve net zero. In doing so, the UK would have the freedom to increase ambition by setting a more stringent cap, expand scope and coverage (e.g. including upstream transport and/or heating fuels), and link to other domestic and international (when the level of ambition is equivalent) carbon markets in the future. We also note the Government's view that a standalone UK ETS would result in a sufficiently liquid market.

We see a standalone UK ETS as an essential component in building an economy-wide carbon policy framework, which would continue to place the UK as a global leader in climate policy and ambition, following on from the landmark Climate Change Act 2008 and, more recently, adopting a net zero emissions target by 2050. The UK should aim to build a robust, well-designed, and governed carbon policy framework in the near-term, with an on-going process that seeks to develop links to international carbon markets (e.g. EU ETS) during the 2020s.

Key Points

A standalone UK ETS would provide the UK with the freedom to:

- **Interact with the wider UK carbon policy framework** – our work suggests that sectoral carbon standards (e.g. for heat) could be developed with linked trading in carbon credits, allowing greater flexibility in compliance strategies.⁸ There is potential for these credits to form part of a wider UK trading system, e.g. between a UK ETS and sectors covered by carbon standards.
- **Expanding scope and coverage** – the UK would have the ability to increase the scope and coverage of the ETS by, for example, including GHG emissions such as methane and covering upstream transport and/or heating fuels.
- **Incentivise greenhouse gas removals** – through a standalone UK ETS, credit mechanisms to incentivise innovation and investment in greenhouse gas removal (GGR) technologies and agriculture, forestry and other land use (AFOLU) activities could be developed. For example, capturing carbon is rewarded by tradeable credits that reflect the carbon rating of processes (whether nature-based or industrial in character).
- **Maximise ambition** – there is a risk that UK carbon markets are diluted by an EU ETS cap, which is less stringently set than what is required to meet net zero. This would result in non-traded sectors having to work harder to achieve necessary emissions reduction, which is potentially less cost-effective for the UK economy. In addition, when setting the cap and trajectory for a UK ETS, the cost to business should be considered in the wider context of

⁸ Frontier Economic (2019). Setting Standards for Carbon Intensity [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2019/05/2019-03-29-RDI-Setting-Standards-for-Carbon-Intensity-Report-FINAL.pdf>

productivity and the effects carbon policy has on both, because evidence suggests that there is a strong link between carbon policy and innovation.⁹

- **Develop robust measurement, monitoring, and verification of emissions** – underlying the implementation of wider carbon policy interactions and supporting a near economy-wide framework for carbon trading requires the creation of more advanced carbon rating (i.e. measuring, monitoring, and verification) of GHG emissions and regulation processes.
- **Set carbon budgets on actual territorial emissions** – analysis by the Committee on Climate Change regarding the UK's 'fair-share' of global emissions reduction¹⁰ builds a strong case for the UK to move setting carbon budgets and adjusting the accounting methodology to be based on actual territorial emissions. The budget setting process could then incorporate explicit governance considerations of the extent to which sectors can utilise imported credits to meet their obligation (based on emerging evidence about the reliability of international market instruments). This approach would also be consistent with adopting a standalone UK ETS in the near-term, until there is clear alignment in the stringency of underlying carbon policy.
- **Effectively address competitiveness concerns** – protecting UK industry competitiveness is crucial if implementing a standalone UK ETS, especially with a more stringent cap. In this case, the distribution of free allowances should be considered in the wider global context of equivalent industries and developed to interact effectively with the proposed industrial decarbonisation fund and existing measures (e.g. climate change agreements, low carbon support exemption/compensation, and carbon price compensation).

We provide further details in our responses to specific consultation questions below.

Yours faithfully,

Danial Sturge

Policy Advisor

Energy Systems Catapult

⁹ Frontier Economics (2019). Carbon Policy and Economy-Wide Productivity [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2019/04/2019-03-29-RDI-WP6-Report-FINAL.pdf>

¹⁰ CCC (2019). Net Zero: The UK's contribution to stopping global warming [online]. Available from: <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

Responses to Consultation Questions

Consultation Questions		ESC Responses	
1	a	Are you a current participant of the EU ETS? (Y/N)	No.
2		Does your interest in the ETS relate to the operation of the system in a particular geographical area?	UK-wide.
3	a	Do you agree with the proposed scope of a UK ETS? (Y/N)	Yes.
	b	Please expand on your answer, providing evidence in support of your response where possible.	We agree that the scope of a UK ETS should begin by aligning with the current scope of the EU ETS for the purposes of delivering policy continuity and as a starting position for increasing ambition. However, we believe that this should be part of a longer, phased approach in which the scope and coverage is increased to align with the UK's net zero emissions target. This is essential if the UK is to continue being a global leader in tackling climate change. The proposal of keeping the scope of a UK ETS under review is welcomed.
4	a	Do you have any suggestions for which sectors might be included in scope in the future? (Y/N)	Yes.
	b	Please expand on your answer, providing evidence in support of your response where possible.	Our Rethinking Decarbonisation Incentives project reveals that the current carbon policy framework results in uneven and incomplete incentives to reduce greenhouse gas emissions across the economy. ¹¹ Increasing the scope of sectors covered by a UK ETS could go some way to addressing this unevenness, for example, including upstream transport and/or heating fossil fuels would place a carbon price where one does not currently exist. ¹² In light of net zero, no part of the economy is exempt from emissions reduction, however, the Committee on Climate Change's own analysis suggests emissions offsetting will be necessary for difficult to abate sectors (e.g. aviation and agriculture). Therefore, allowing negative emission technologies, with an accurate carbon rating

¹¹ Blyth, W (2018). Current Economic Signals for Decarbonisation in the UK [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2018/07/2018-07-20-RDI-WP1-Current-Economic-Signals-for-Decarbonisation-in-the-UK.pdf>

¹² Blyth, W (2019). Near-Term Options to Address Low-Priced Emissions [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2019/05/2019-05-21-RDI-WP7-Near-Term-Options-to-Address-Low-Priced-Emissions-Report-FINAL.pdf>

			mechanism in place, to generate credits would provide a marketplace and strong price signal to investors. In addition, widening the scope to include all industry, instead of just heavy industry above a certain size, would further increase the liquidity of the UK's carbon market and reduce the overall cost of abatement.
5	a	Do you agree that costs to business alongside climate ambition are the appropriate ones to be considered for the final decision on setting the cap and trajectory? (Y/N)	Yes.
	b	What other factors should be prioritised in the setting of the cap and trajectory?	Productivity.
	c	Please expand on your answer, providing evidence in support of your response where possible.	When setting the cap and trajectory for a UK ETS, the cost to business should be considered in the wider context of productivity and the effects carbon policy has on both. Our Rethinking Decarbonisation Incentives project found that a more complete measure of productivity (i.e. accounting for the positive value of outputs produced with lower emissions) would help guide policy design. Furthermore, evidence suggests that there is a strong link between carbon policy and innovation. ¹³ For example, policies such as carbon price and carbon standards help drive innovation by providing an economic 'free lunch' (i.e. an increase in output that is not commensurate with the increase in effort/cost necessary to bring it about). Therefore, such considerations should be accounted for when setting the balance between climate ambitions and costs to business.
17	a	Do you agree with the proposed approach to phases? (Y/N)	Yes.
	b	Please expand on your answer, providing evidence in support of your response where possible.	We agree that a 10 year phase provides greater certainty for participants and provides a strong price signal for investors.
18	a	Do you agree with the proposed approach to reviews (Y/N)	Yes.
	b	Please expand on your answer, providing	Given the pace at which innovation and cost reductions occurs in terms of emission abatement technologies, along with the UK's

¹³ Frontier Economics (2019). Carbon Policy and Economy-Wide Productivity [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2019/04/2019-03-29-RDI-WP6-Report-FINAL.pdf>

			<p>increased ambition of achieving a net zero target, we welcome the three reviews proposed during the first phase.</p> <p>We would like to see the 2023 review used as an opportunity to explore linking domestic tradeable credits outside of the UK ETS. These could, for example, come from carbon standards for heat¹⁴ and/or greenhouse gas removal technologies (whether nature-based or industrial in character). In doing so, this begins to place the UK on a pathway to a more coherent economy-wide carbon policy framework.¹⁵</p> <p>We would also like to see the reviews used as a stocktake of carbon budgets and ETS interactions with non-traded sectors to ensure carbon policy is working effectively together across the whole economy.</p>
25	a	Do you consider that we should create a fund for industrial decarbonisation under a linked or a standalone UK ETS? (Y/N)	Yes.
	b	Please expand on your answer, providing evidence in support of your response where possible.	Our Rethinking Decarbonisation Incentives international case studies highlights some of the mechanisms used by other jurisdictions in the area of industrial decarbonisation. ¹⁶ A key finding and a common theme in the international case studies when designing mechanisms is to carefully consider interactions with wider carbon policies (e.g. climate change agreements). The industrial decarbonisation fund should therefore address barriers, which carbon pricing alone cannot. For example, measures on efficiency and innovation (in particular carbon capture and storage (CCS) demonstration projects). In addition, distinct objectives should be set in order to manage the overlap. ¹⁷

¹⁴ Frontier Economic (2019). Setting Standards for Carbon Intensity [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2019/05/2019-03-29-RDI-Setting-Standards-for-Carbon-Intensity-Report-FINAL.pdf>

¹⁵ ESC (2019). Rethinking Decarbonisation Incentives: Future Carbon Policy for Clean Growth [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2019/06/Rethinking-Decarbonisation-Incentives-Future-Carbon-Policy-for-Clean-Growth.pdf>

¹⁶ See here:

- Ricardo (2018). RDI Policy Case Study – Pan Canadian Carbon Pricing [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2018/10/Pan-Canadian-Carbon-Pricing-Case-Study-FINAL.pdf>
- Ricardo (2018). RDI Policy Case Study – New Zealand Emissions Trading Scheme [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2018/10/New-Zealand-ETS-Case-Study-FINAL.pdf>
- Ricardo (2018). RDI Policy Case Study – South Africa Carbon Tax [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2018/10/South-Africa-Carbon-Tax-Case-Study-FINAL.pdf>

¹⁷ Ricardo (2018). Synthesis of Key Findings from Case Studies [online]. Available from: https://es.catapult.org.uk/wp-content/uploads/2019/02/Catapult_RDI_synthesis_key_findings_report.pdf

32	Do you think there is potential for the use of offsets by operators to meet their compliance obligations in the UK ETS?	Yes, but it is crucial that offsets are accurately emissions rated (either empirically or through an established, reliable proxy) to ensure long-term confidence in the offsets bought and sold. In order to move towards a more coherent economy-wide carbon policy framework, the UK should seek to consolidate and streamline existing measurement, monitoring, and verification of all emissions and related incentives.
33	How could a UK ETS evolve over the coming years in order to ensure the system delivers for future challenges and encourages innovation within business?	<p>In designing and future-proofing a UK ETS, we make the following recommendations:</p> <ul style="list-style-type: none"> • Take opportunities to expand scope and coverage to improve the existing framework of carbon policies. • Use it as an opportunity to begin to develop a pathway towards a coherent set of interlocking sectoral instruments covering all emitting activities throughout the economy. For example, a UK ETS would cover power generation, industry, and aviation; the UK could then introduce carbon standards for heat and potentially road transport. The credits from both could be traded between mechanisms and sectors, and be further linked to a marketplace for greenhouse gas removals (e.g. CCS, direct air capture, new woodland to store carbon, bioenergy with CCS etc.). It could then be further linked to the replacement of the Common Agriculture Policy, providing incentives to farmers to provide key public goods, e.g. carbon sequestration by planting trees or restoring peatlands, planting bioenergy crops such as Miscanthus, better soil and livestock management, etc.¹⁸ This would create an economy-wide framework of carbon policies, ensuring climate targets are met at lowest cost. • The above could then be linked to international carbon markets during the 2020s, taking advantage of Article 6 of the Paris Agreement.

¹⁸ IEEP (2018). Sectoral Assessment for Agriculture, Forestry and Other Land Use [online]. Available from: <https://es.catapult.org.uk/wp-content/uploads/2019/01/RDI-AFOLU-Sectoral-Assessment-Report.pdf>