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# Developing the UK Emissions Trading Scheme: Main Response

A joint response of the UK Government, the Scottish Government, the Welsh Government and the Department of Agriculture, Environment and Rural Affairs for Northern Ireland



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# Executive Summary

When the UK Emissions Trading Scheme (UK ETS) was established in January 2021 our aim was to align it with the UK's world leading net zero commitment. This document sets out the important structural changes to the scheme that will deliver on this goal.

In March 2022 the UK ETS Authority (hereafter 'the Authority') – made up of the UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland – consulted on proposals to develop the UK ETS. We spoke to and received responses from over 300 organisations, representing a wide range of stakeholders from energy, industrial and aviation sectors, as well as Non-Government Organisations (NGOs), academia, advocacy groups and the UK Climate Change Committee (CCC). We are extremely grateful for the depth and breadth of the engagement received. The information and evidence provided has directly informed the decisions put forward in this Authority Response.

Since launching the consultation last spring, the world has faced an unprecedented rise in the cost of energy and cost of living. We are acutely aware of the challenges this has posed to business and the need to ensure that the decisions we take on the UK ETS are appropriately balanced and that we carefully consider the impacts. Alongside the decision on the net zero consistent cap, we have taken decisions to smooth the transition and to ensure support continues for businesses in the medium-term. This will provide targeted assistance while businesses and policy makers deliver on the technological transformation essential for the viability of our industry in a net zero future.

The recent rises in energy prices have also heightened the need to continue the transition away from fossil fuels and towards clean, affordable, homegrown energy. The UK ETS and the structural changes in this document will continue to support and incentivise this much needed transition.

In making the decisions in this Authority Response, the Authority has worked closely with colleagues across the UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland and considered interaction with the wider policy landscape. We have also listened carefully to our stakeholders and requests for long term clarity, strength of climate ambition, and targeted support for businesses in the transition.

We have made the following decisions:

- **Setting the UK ETS cap to be consistent with net zero and doing this at the top of the net zero consistent range:** first and foremost, net zero sits at the heart of this Authority Response. Following the latest assessment of progress against the climate targets of all four UK governments, we have concluded that the ambitious range consulted on for the UK ETS cap remains consistent with delivering on net zero. Opting for the top of this range will support a smooth transition for participants and

enable continued flexibility to mitigate market risks and carbon leakage. In line with our prior commitments, the net zero cap will be implemented for 2024.

- **Smoothing the transition to the net zero cap:** through releasing 53.5 million<sup>1</sup> additional allowances from the reserve pots to the market between 2024-2027 we will ensure that there is no sudden drop in allowance supply between 2023 and 2024. These allowances have already been created in previous scheme years within the overall cap limits, and so the strength of overall ambition will not be affected. This will be a gradual transition, allowing the market and participants time to adapt.
- **Setting the Industry Cap at 40% of the overall cap:** we recognise businesses need time and support to decarbonise. Setting a higher limit on the quantity of allowances available to be distributed for free, compared with retaining a limit of 37%, will ensure we can continue to provide free allowances to those sectors at most risk of carbon leakage. A higher industry cap will also enable flexibility for the future decisions regarding the distribution of free allowances in the second phase of the free allocation review.
- **Providing long term market resilience:** we recognise that a net zero consistent ETS may encounter unprecedented or unforeseen challenges. We will therefore put aside 29.5<sup>2</sup> million allowances for future market management. This is equivalent to over 3% of the overall cap. This will provide the Authority with resilience to respond in a way that is flexible, targeted and timely in the face of market challenges. It will also support the ongoing market review which will set the design of future UK ETS markets policy.
- **Free allocation technical changes:** we have listened to concerns regarding features of industrial free allocation policy which are not working as intended and are taking action to address this. We are also making targeted changes to benchmarks and carbon leakage policy for specific stakeholders in the Malt Extract and Lime sectors. Our review into free allocations will continue with an aim to update the methodology to better target support at sectors most at risk of carbon leakage.
- **Phasing-out of aviation free allocation:** in line with findings that there is a minimal risk of carbon leakage for the aviation sector, we will not extend free allocation for the aviation sector for the 2026-2030 allocation period. We recognise that businesses will need time to prepare for this phase-out. Therefore, aircraft operators will receive their existing entitlement for the 2024 and 2025 scheme years as set out in the aviation allocation table. As such, aviation free allocation entitlement will reduce at the existing fixed amount of 2.2% annually in 2024 and 2025 until full auctioning in 2026. This ensures aircraft operators can prepare for the transition to full auctioning. The Authority will ensure there are provisions to support airlines and individual routes. If required, we will consider what appropriate mitigations may be needed to prevent negative outcomes.
- **Expanding the scope of the scheme:** including additional sectors in the UK ETS and capping a greater proportion of UK emissions will further contribute to delivering

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<sup>1</sup> This figure is presented to the nearest 0.5 million throughout this document.

<sup>2</sup> This figure is presented to the nearest 0.5 million throughout this document.

net zero and UK carbon reduction targets at lowest cost for industry. Subject to further consultation on the details of implementation, we intend to expand the scope of the UK ETS to include domestic maritime by 2026, and energy from waste and waste incineration in 2028 (preceded by a two-year phasing period from 2026-2028).

Further, we will expand the existing scope of the scheme to create a level playing field between operators who use pipeline and non-pipeline modes of transportation of CO<sub>2</sub>. CO<sub>2</sub> venting from upstream oil and gas will be brought into the scope of the UK ETS, and we will consult on introducing UK ETS biomass sustainability criteria for all biomass to develop a greater understanding of its impacts upon markets and operators.

- **Incorporating Greenhouse Gas Removal (GGR) technologies:** we believe that the UK ETS is an appropriate long-term market for GGRs. We intend to include engineered GGRs in the UK ETS, subject to further consultation; a robust monitoring, reporting and verification (MRV) regime being in place; and the management of wider impacts. We believe the UK ETS may offer an appropriate long-term market for high quality nature-based GGRs, subject to further work to consider the range of potential issues brought forward through the Call for Evidence and by the CCC regarding permanence, costs and wider land management impacts.

Ambitious climate policy is a fundamental part of driving sustainable economic growth. These are necessary structural changes and will be implemented through a phased and measured approach. We intend that this will support the ongoing transformation of our energy systems and will send a clear signal to businesses, providing them with the confidence to invest in long-term decarbonisation now to secure a sustainable future.

To support a measured approach, we are committing to further consultation – aiming for the end of this year – to develop and set out important details of the expansion of the scheme to maritime and waste, GGRs, market reforms and the review of free allocation policy. We will engage closely with affected participants to ensure the final mechanics of these policy areas are appropriate to meet future demands on the scheme and to ensure it is working most effectively in the UK context.

Since publication of the consultation on *Developing the UK ETS*<sup>3</sup>, there have been significant developments in climate policy more widely. In January 2023, the UK Government received the *Independent Review of Net Zero* final report.<sup>4</sup> This report emphasised the scale of the economic opportunity of net zero and the need to provide businesses with the long-term policy certainty they need to invest now. In particular, it set out an enhanced role for the UK ETS as a foundation for a thriving, decarbonised economy through 2050 and beyond.

The UK Government accepted the *Independent Review of Net Zero* recommendation that it should work within the UK ETS Authority to develop a long-term pathway for the UK ETS. It committed to working within the Authority to publish this vision for development of the scheme by the end of this year. Subject to agreement within the Authority, this pathway will set out our

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<sup>3</sup> <https://www.gov.uk/government/consultations/developing-the-uk-emissions-trading-scheme-uk-ets>

<sup>4</sup> [https://www.gov.uk/government/publications/review-of-netzero](https://www.gov.uk/government/publications/review-of-net-zero)

intention to legislate to continue the ETS beyond 2030 until at least 2050 while remaining aligned to net zero, and to explore expanding the scheme to more sectors of the economy, including high emitting sectors.

In March 2023, the UK Government published a package of documents including *Powering Up Britain: Energy Security Plan* and the *Net Zero Growth Plan*<sup>5</sup>. Together, these documents provide a detailed strategy for how the UK Government will enhance the UK's energy security and deliver on our net zero targets. The UK Government also published a consultation on *Addressing carbon leakage risk to support decarbonisation* in March.<sup>6</sup> This sets out a range of potential policy mechanisms which, in coordination with UK ETS free allocation reform, would provide a holistic package of support against carbon leakage risk in the future.

The decisions in this document form part of this wider policy landscape and we will continue to work closely across UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland to ensure a holistic approach to climate and energy policy.

In this document we have included summaries of the responses we have received, which aim to provide an accurate sense of the weight of views. Nevertheless, this should be treated as a guide, given the open nature of many questions and the large number of varied suggestions we received. It is not practicable in this document to detail every viewpoint or piece of evidence provided. However, all submissions have been reviewed and considered by the Authority in full. The information provided by respondents has also not been corroborated or independently verified during the production of this document.

## A longer-term pathway for UK ETS development

The *Independent Review of Net Zero* recognised that the UK has been a global leader in emissions trading for more than twenty years. The Review set out an enhanced role for the UK ETS as a foundation for a thriving, decarbonised economy through 2050 and beyond. It showed how, with a long-term commitment to an expanded carbon market, we can unlock investment in UK infrastructure, catalyse innovation in the UK's world-leading science and technology, and support UK businesses with the most cost-effective and flexible means to deliver net zero.

The UK Government accepted the review's recommendation that it should work within the ETS Authority to develop a long-term pathway for the UK ETS, including:

- setting out a vision on the future design and operation of the UK ETS and an intention to legislate to continue the scheme beyond 2030 until at least 2050;
- exploring expanding the UK ETS to more sectors of the economy, including high emitting sectors;
- developing options for inclusion of GGRs to incentivise early investment in new technologies; and

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<sup>5</sup> <https://www.gov.uk/government/publications/powering-up-britain>

<sup>6</sup> <https://www.gov.uk/government/consultations/addressing-carbon-leakage-risk-to-support-decarbonisation>

- considering how the Government will mitigate the risk of carbon leakage as a result of expanding the UK ETS.

The UK Government committed to working within the ETS Authority to publish this long-term pathway for the UK ETS by the end of 2023.

Much of this work is already underway, including the proposals for initial expansion of the scope of the UK ETS, for incorporating GGRs and on the review of free allocation methodology that are discussed in this document. The UK Government is engaging the rest of the Authority to work towards publishing an Authority response to the *Independent Review of Net Zero* recommendation on the scheme later this year.

# Chapter 1: Net zero consistent cap, unallocated allowances, and the free allocation review

This chapter covers proposals set out in Chapters 1, 2 and 3 of the consultation.

The Authority has decided to set the UK ETS cap for 2021-2030 at the top of the net zero consistent range, 936 million allowances.

We are committed to smoothing the transition to the net zero consistent cap and will bring 53.5 million allowances from the reserve pots to auction over 2024-2027.

We will retain an initial 29.5 million allowances in reserve for market stability mechanisms and future Cross-Sectoral Correction Factor (CSCF) mitigation, with a review of the reserve to follow.

The industry cap will be reset in 2024 to align with the introduction of the net zero consistent cap. Cognisant of the challenges facing industry, we have decided to set the industry cap at 40% of the overall cap, a more generous level than retaining the current 37% share.

Current levels of free allocation will be guaranteed until 2026, an estimated 2.5 million allowances from the reserve will be used to mitigate the CSCF in 2024-2025. We will consult on future changes to free allocation methodology before the end of 2023.

## Net zero consistent cap

### Summary of Proposal

When the UK ETS was launched, we committed to align the cap with a net zero trajectory and to implement changes by January 2024. This chapter includes:

- The decision for a net zero consistent trajectory for the cap.
- The decision for how we will smooth the transition to a net zero consistent cap to ensure there is no sudden drop in allowance supply.
- The decision for the quantity of allowances to be kept in reserve and potential uses.
- The decision on the adjustment of the industry cap, which sets a limit on allowances available to be distributed for free.

The cap for Phase I of the UK ETS (2021-2030) was initially set at 5% below the UK's expected notional share of the EU ETS cap for Phase IV of the EU ETS (2021-2030). This

equated to around 156 million allowances in 2021 (covering both stationary installations and aircraft operators) and was set to reduce annually by 4.2 million allowances.

The Authority identified a range of values which could, under certain conditions, provide a net zero consistent cap for the scheme. The proposal would set the total cap for Phase I at a level between 887 million allowances and 936 million allowances.<sup>7</sup> Compared to the current legislated cap of 1365 million allowances over the whole of Phase I, this would equate to between 30-35% fewer allowances being made available over the course of this phase. This would require a step change in the level of the cap in 2024, with the cap then becoming tighter over the phase, reaching an annual cap of around 50 million allowances in 2030.

#### Questions

- 1) Do you agree with the Authority's proposed range for the net zero consistent cap? (Y/N) Please explain your answer.**
- 2) What do you expect the effect of the cap set at the bottom of the range (i.e. total of around 887 million allowances over the entire phase) to be on your plans for emissions reductions over the 2020s?**
- 3) What do you expect the effect of the cap set at the top of the range (i.e. total of around 936 million allowances over the entire phase) to be on your plans for emissions reductions over the 2020s?**

#### Summary of Responses

We received 114 responses to the proposals in Chapter 1 of the consultation. Of these, 41 (36%) agreed with the Authority's proposed range for the net zero consistent cap, 50 (44%) disagreed, and 23 (20%) did not answer. Many respondents combined or repeated their answers, so we have grouped the responses to questions 1, 2 and 3.

The most common theme was concern that the proposed range for the cap is not aligned with the availability of technology and infrastructure required for decarbonisation. Forty-nine responses (43%) mentioned this. For example, a company in the steel sector said that the 'proposed range for the net-zero consistent cap does not take account of the speed with which installations in the traded sector can reduce their emissions'. Carbon Capture, Usage & Storage (CCUS) and Hydrogen were frequently cited as examples of technology required by installations to decarbonise that are unlikely to be available until the late 2020s and the early 2030s.

Many who disagreed with the proposed range for the cap pointed to the step change in the cap in 2024 as too steep. Many respondents expressed concerns regarding potential negative impacts such as increased carbon leakage risk, UK industry being put at a competitive disadvantage, and concerns that too stringent a cap will increase the carbon price and

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<sup>7</sup> Multiplied by the hospital and small emitter reduction factor

disincentivise investment. Carbon intensive industries with a potential risk of carbon leakage, such as ceramics and steel, were particularly concerned about the potential negative impacts of the range. Industries such as ceramics that typically have installations in dispersed locations expressed concerns about access to new decarbonisation solutions.

In responses to questions 2 and 3, many respondents commented that it was difficult to estimate the exact impacts to their business in the absence of an impact assessment and without further information on wider government carbon leakage mitigation plans. Twenty-three respondents (20%) requested a more in-depth impact assessment. Twenty-four respondents called for carbon leakage mitigation policy (such as free allocation and a UK carbon border adjustment mechanism (CBAM)) to be developed and/or implemented at the same time as a net zero consistent cap.

Many respondents who agreed with the proposed cap range did so on the basis that it would help achieve climate targets and send an effective long-term signal for decarbonisation. A number of respondents in the energy sector supported the proposed cap range and were amongst the 33 respondents (29%) who saw the range as aligned with UK climate targets, such as carbon budgets and net zero. For example, a company in the energy sector said that the ‘proposed range is aligned with our carbon budgets and net zero legislation and should provide an effective long-term signal for decarbonisation’.

Some responses also noted a link between a tighter cap and the benefits that may bring through increased investment. For example, one respondent who supported the cap range set out that ‘this will send a clear signal to ETS participants to invest in decarbonisation technologies, innovation trials, resource and energy efficiency measures, and fuel switching.’ One respondent considered it ‘crucial for the cap to be aligned with the emissions reduction trajectory required to meet net zero’. Another respondent stated they recognised the need to reduce the cap range further than proposed by the Climate Change Committee (CCC).

Some respondents who support the proposed cap voiced concerns about the ability for installations to decarbonise in line with the range without improved access to decarbonisation options. For example, one trade association welcomed the alignment of the UK ETS with net zero but said that the net zero consistent cap proposals do not account ‘for the availability of technologies for industrial decarbonisation over this period nor the varying sector decarbonisation pathways as outlined in the government’s own Net Zero Strategy’. Several respondents called for increased government funding to support the decarbonisation of the traded sector.

We sought the CCC’s advice on the proposals in Chapter 1 for aligning the UK ETS cap with a net zero consistent trajectory. The CCC, in their June 2022 Progress in reducing emissions report<sup>8</sup>, stated “Due to a different balance of sectoral emissions in the Government’s pathway compared to that in our Balanced Pathway (e.g. the Government pathway has lower projected emissions from electricity generation), the proposed UK ETS cap is tighter than that recommended by the Committee. This is appropriate, given the pathway set out in the Net

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<sup>8</sup> <https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/>

Zero Strategy.” Their subsequent letter<sup>9</sup> to the Rt Hon Graham Stuart MP regarding the development of the UK ETS, dated 11 October 2022, repeated this advice.

## The Authority Response

The Authority have decided to reset the UK ETS cap for 2021-2030 at the top of the net zero consistent range, 936 million allowances, a drop of 30% over the course of this phase. We have assessed the responses to the proposals in Chapter 1 of the consultation and the information and evidence provided have informed the decision. We have appraised updated assessments of emissions abatement progress and considered the primary objective of aligning the cap with the UK’s ambitious climate targets and ensuring an effective long-term signal for decarbonisation. We have also considered the additional objectives of providing a smooth transition for participants and mitigating any unintended effects that the resulting trajectory may have on carbon leakage risk, competitiveness and affordability.

Setting the cap at the top of the range is consistent with net zero and, through allowing a higher volume of allowances, it will provide greater flexibility to manage market and carbon leakage risks compared with options lower in the range. We recognise the step change in allowances under the cap from 2024 and have heard concerns from parts of industry about the potential impacts. In response to this we have taken action to smooth the transition and to ensure that there is no sudden drop in allowance supply between 2023 and 2024, reducing the risk of an upwards price shock (see response to question 30). This will be a gradual transition, allowing the market and participants time to adapt.

We have also ensured that appropriate mitigation against carbon leakage continues for businesses in the medium term through the continued provision of free allocation. Alongside wider policy mechanisms for future carbon leakage protection, this should help to mitigate any unintended impacts of cap adjustment. We set out the Authority’s decision on providing mitigation against carbon leakage through its decision on the level of industry cap and future changes to free allocations later in this chapter.

A number of participants raised concerns regarding the availability of technology and infrastructure required for decarbonisation. Industrial decarbonisation in particular will require a significant technological transformation and will require support from policymakers, investors and businesses. The supplementary text box on industrial decarbonisation sets out some of the commitments UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland have made in support of industrial decarbonisation, detailed below.

The net zero cap sets a limit on total emissions for all sectors covered by the UK ETS – it reflects the cumulative effort over time of all participants under the scheme. The cap and trade mechanism, including the ability to carry over allowances between years, means that businesses and industry make their decisions of where and when abatement happens, and it is likely that different industries will decarbonise along different trajectories.

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<sup>9</sup> <https://www.theccc.org.uk/publication/letter-development-of-the-uk-emissions-trading-scheme-uk-ets/>

The Authority is clear that a move to a net zero consistent cap is required to support the climate commitments made by the UK Government, Scottish Government, Welsh Government and Northern Ireland Executive. The move to a net zero consistent cap supports the UK Government's long-term plan to end the UK's domestic contribution to man-made climate change by 2050. The Net Zero Strategy, published in October 2021, remains the UK Government's plan to deliver net zero by 2050. The Authority's decision on the UK ETS cap provides a clear signal to decarbonise at the pace and scale required to keep emissions at or below the cap.

The Authority has considered the duties on the Secretary of State for Energy Security and Net Zero under the Climate Change Act 2008 when taking its decisions on the development of the UK ETS, including with regard to carbon budgets and meeting the net zero target.<sup>10</sup> The Carbon Budget Delivery Plan, published in March 2023, outlined that the Government expects its quantified proposals and policies to deliver over 100% of the emission reductions required to meet carbon budget four. On this basis, the Secretary of State for Energy Security and Net Zero has advised the Authority that the UK ETS policy position is consistent with the UK Government's plans for enabling carbon budget four to be met. The decisions in this Authority Response will also assist in enabling carbon budgets five and six to be met. The UK Government is committed to delivering on its 2030 Nationally Determined Contribution (NDC) and will report to the United Nations Framework Convention on Climate Change on progress towards meeting this in 2024 and every two years after that. Ministers across the Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland are also content that the proposals meet their respective carbon budgets.

The cap will require further adjustment following the addition of new sectors to the UK ETS. Any change will retain the same ambition in terms of required emissions reductions as the net zero consistent cap outlined above for the current traded sector. Further detail is outlined in Chapter 6<sup>11</sup>.

Information on industrial decarbonisation and energy price support can be found below.

### Industrial Decarbonisation Support:

The UK ETS Authority recognises that a comprehensive suite of policies including funding, regulation and carbon pricing is needed to deliver the decarbonisation we need this decade through proven technology, and accelerate the deployment of cutting-edge technologies like hydrogen and Carbon Capture, Usage & Storage (CCUS).

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<sup>10</sup> Under the Climate Change Act 2008, the Secretary of State for Energy Security and Net Zero is legally responsible for ensuring that UK emissions will not exceed the level set in carbon budgets (section 4 duty); for preparing policies and proposals for enabling carbon budgets to be met (section 13 duty); and for laying a report before Parliament setting these out after the setting of each carbon budget (section 14 duty).

<sup>11</sup> See pp 100-131

With the UK ETS incentivising investment in decarbonisation, and raising £6.1 billion in 2022, the UK ETS Authority is working with business to ensure the right support and economic frameworks are in place to achieve net zero.

UK ETS revenues already support key government priorities, including decarbonisation. The UK Government committed £30 billion of domestic investment for the green industrial revolution at Spending Review 2021, £6 billion for energy efficiency for 2025-2028 at the Autumn Statement 2022, and up to £20 billion for CCUS announced at Spring Budget 2023. Since November 2020, over 80,000 green jobs are currently being supported or are in the pipeline across the UK economy as a result of new government policies and spending.

For industry, the UK Government, Scottish Government, Welsh Government, and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland have committed to fiscal and policy support for decarbonisation. This includes the UK Government continuing to support energy efficiency through the Industrial Energy Transformation Fund (IETF), an extension to which was announced in the Net Zero Growth plan, increasing total grant funding available to £500 million.

The UK Government has also extended the Climate Change Agreements Scheme by two years, which provides reduced Climate Change Levy rates for eligible businesses in over 50 industrial sectors worth an estimated £300 million a year and has announced the Track-1 CCUS project negotiation list, including industrial capture projects. To address industrial emissions outside clusters, the Local Industrial Decarbonisation Plans competition worth £5 million will be launched this summer. It will support dispersed industrial manufacturers to decarbonise and start their journey towards a low-carbon future.

For eligible industrial manufacturers with sites located in Scotland, the Scottish Industrial Energy Transformation Fund (SIETF) – Energy efficiency – remains active and has issued over 20 grant offers. After three calls for projects that support manufacturing industries to fund investment-ready energy efficiency technologies and deeper decarbonisation deployment projects, as well as studies, SIETF is under review prior to Scottish Government announcements regarding further rounds.

The Welsh Government has also set out plans and support for industrial decarbonisation. Its Manufacturing Action Plan represents a collaborative, joined up approach to support for manufacturing, bringing together key stakeholders to address important issues such as tackling the climate emergency, improving supply chain resilience, developing world leading skills and driving more Research, Development and Innovation. This is supported by the establishment of the Net Zero Industry Wales organisation, which will assist industry to develop zero pathways, and a Net Zero Skills Action Plan.

The Welsh Government also provides financial support for decarbonisation through the Green Business Loan Scheme delivered by the Development Bank of Wales. The scheme aims to invest £10 million over three years in projects including renewable energy, energy efficiency and plant upgrades.

We will continue to review whether these are sufficient to support decarbonisation of the UK ETS sectors, and to ensure an equitable balance of contributions from the private and public sectors to the transition to net zero.

### Energy Prices support:

The UK Government took swift and decisive action at unprecedented scale to support households and businesses, through the Energy Bills Support Scheme until March 2023 and the Energy Price Guarantee until March 2024 for domestic consumers, and the Energy Bills Relief Scheme until March 2023 and the Energy Bill Discount Scheme (EBDS) until March 2024 for non-domestic energy consumers. The EBDS is targeted at sectors with particularly high levels of energy use and trade intensity, many of which are covered by the UK ETS. Additional support for the most vulnerable households is available through specific cost of living payments.

The Welsh Government has invested £90 million in supporting vulnerable households with the rising costs of energy this financial year. This includes the Welsh Government Fuel Support scheme which offers a £200 payment to all eligible households. The funding has also supported a Fuel Bank Foundation led voucher scheme to support those on Pre-payment meters who are unable to top up their meter and heat fund for those off the gas-grid to bulk purchase fuel. In addition, the Discretionary Assistance Fund in Wales also offers emergency support for off gas-grid energy purchase such as oil and Liquid Petroleum Gas (LPG). The Welsh Government has also invested in supporting local authorities and community groups to expand and enhance the provision of Warm Hubs across Wales offering warm, safe places for people who cannot afford to heat their homes. The Welsh Government Warm Homes Programme which includes the demand led Nest Scheme provides support to improve the energy efficiency of the least thermally efficient low-income households in Wales. £420 million has been invested to improve home energy efficiency through the Warm Homes Programme, benefitting more than 73,000 lower income households.

The Scottish Government will invest up to £30 million this year through the Fuel Insecurity Fund. An immediate priority of the First Minister is to do everything we can to protect every Scot as far as possible from the harm inflicted by the cost-of-living crisis. That is why, one of his first acts has been to build on doubling the Fuel Insecurity Fund last year to now triple it for 2023-2024. The Fund is a critical plank in our support to people who are struggling with their energy costs. It continues to provide a lifeline to households who are at risk of self-rationing or self-disconnecting their energy use. This will be delivered by third sector partners to support the most vulnerable households in Scotland.

Additionally, the Scottish Government new Winter Heating Payment replaces DWP's Cold Weather Payment and provides a stable, reliable annual £50 which will help around 400,000 low-income individuals with their heating expenses each winter. In 2022-2023, the Scottish Government has allocated £119 million targeted at fuel poor households to provide heat and energy efficiency improvements to help reduce energy bills. This will be delivered through a package of support via long-standing programmes that have already supported over 150,000

households in or at risk of fuel poverty (Area Based Schemes, Home Energy Scotland and Warmer Homes Scotland). Lastly, this year the Scottish Government provided £8 million to help Scottish Small to Medium sized enterprises, not-for-profit-organisations and charities to finance the installation of renewable heating and energy efficiency measures.

More directly related to carbon pricing, the UK Government announced in April 2022 that the long-running Energy Intensive Industries (EII) Compensation Scheme, which provides relief from ETS and carbon price support system costs on businesses' electricity use, will be extended for a further three years and the level of its budget doubled. The UK Government has also recently announced additional support with electricity prices through the British Industry Supercharger, which will remove policy costs from EIIs' electricity bills starting from 2024.

## Options for bringing unallocated allowances to market

Chapter 3 of the consultation set out three routes to bring unallocated allowances to market. The Authority has decided to:

- Use an estimated 2.5m allowances from the reserve to mitigate a Cross-Sectoral Correction Factor (CSCF) between 2024-2026 following the adjustment to the Industry Cap. This will protect current levels of Free Allocation for the rest of this allocation period.
- Bring 53.5m allowances from the reserve pots to auction over 2024-2027, to smooth the transition to a net zero consistent cap.
- Keep 29.5m allowances in reserve for uses, such as market stability and future (post 2026) CSCF mitigation.

The industry cap sets a limit on the volume of allowances available to be given out to stationary installations for free. This is important to ensure a balanced distribution of allowances between free allocation and auction share. If the eligibility for free allocation in a given allocation period exceeds the industry cap, the Cross Sectoral Correction Factor (CSCF) applies a uniform reduction to all participants' free allocation. To avoid the application of the CSCF, reserve allowances can be used to top up free allocation in future years where the eligibility exceeds the supply.

## Smoothing the transition to a net zero consistent cap and supporting market liquidity

### Summary of Proposal

The implementation of the net zero consistent cap in 2024 will involve a drop in allowances reaching the market in 2024 compared to previous years. The Authority proposed bringing a

portion of 2021-2023 unallocated allowances and/or flexible share to auction, to smooth the transition to the net zero consistent cap.

#### Questions

**30) Do you agree that a portion of unallocated allowances and/or flexible share should be auctioned to smooth the transition to the net zero cap? (Y/N) Please explain your answer.**

**31) Do you agree we should consider auctioning a portion of unallocated allowances and/or flexible share before 2024 to support market liquidity? (Y/N) Please explain your answer.**

### Summary of Responses

There were 66 responses to question 30, of which 41 (62%) agreed with the proposal to bring allowances forward to auction to smooth the transition to the net zero consistent cap, 16 (24%) did not agree, and nine (14%) did not directly answer the question. Of those who responded positively, key themes were supporting liquidity, ensuring allowance price stability, mitigating short term price increases, and addressing speculation by non-compliance entities. Five respondents (8%) noted that it will be important to ensure transparency and certainty on the release of these allowances.

Of those who responded positively, 10 (15%) stated that additional allowances should only be bought to market once a CSCF has been mitigated. Fifteen respondents (23%) who did not agree with this option also had a preference that a CSCF mitigation be given priority. Several respondents recommended that these allowances should instead be used for market stability and one felt that auctioning these allowances could result in an increase in market speculation. Others cited a need for more information.

There were 63 responses to question 31, of which 31 (49%) agreed with the proposal, 21 (33%) did not and eight (13%) did not directly respond to the question. Those who did not agree with the proposal felt that other uses would be preferable such as CSCF mitigation and future market stability mechanism uses.

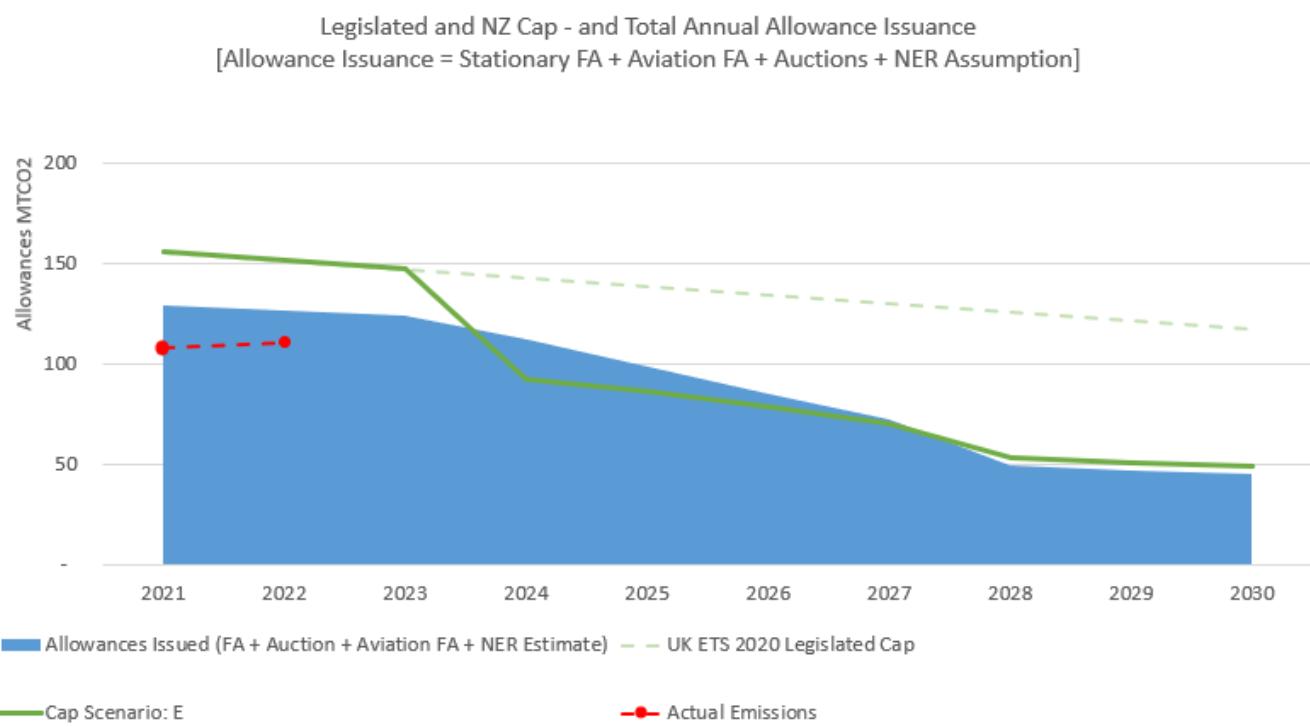
### The Authority Response

The Authority has decided to bring 53.5 million unallocated allowances to auction over 2024-2027. We have listened to consultees' views regarding short term liquidity in the market and smoothing the transition to the net zero consistent cap. Through releasing additional allowances upfront we will ensure there is no sudden drop in allowances between 2023 and 2024 and will allow the market time to adapt. We consider this is a balanced approach, which will also enable sufficient allowances to mitigate a CSCF between 2024-2026 following the adjustment to the Industry Cap, and to allow a reserve of allowances for future uses including

future CSCF mitigation (post 2026), or for use in market stability mechanisms (see the Authority response to question 32).

The chart below illustrates how unallocated allowances will smooth the transition to the net zero cap.

**Figure 1: Chart showing the Net Zero (NZ) consistent cap against estimated allowance issuance and actual emissions (2021 – 2023)**



- Flex share is only used for: a) if needed to mitigate CSCF, or b) if user explicitly assumes it is auctioned. Otherwise it is unused.
- This chart assumes the NER is deployed per the auction calculation, i.e. it is used roughly evenly over the phase (see assumptions for details). In reality, NER use will depend on prevailing product market conditions.
- A small number of allowances annually are not issued as these are removed for the small emitter adjustments.

Allowances under the cap are distributed to the market in different ways, the legislated net zero cap trajectory is therefore not a reflection of how many allowances in total would necessarily reach the market in each year. The exact distribution of allowances for different purposes (including free allocation, auction share, auction top up, and any triggering of market stability mechanisms) will affect when allowances reach the market over the course of the phase.

Figure 1 shows the supply of allowances distributed over the phase through auction, free allocation or via the New Entrants' Reserve (NER). The green line shows the legislated cap for the phase, whereas the blue shaded area illustrates when allowances will come to market. The red dotted line illustrates that actual emissions in 2021 and 2022 were below the legislated cap (green line) for those years. The graph also illustrates that a number of allowances under the legislated cap between 2021-2023 have not yet reached the market, these are the unallocated allowances.

The supply of allowances over 2024-2027 is set to be above the legislated net zero consistent cap. This represents the unallocated allowances being brought to auction to smooth the

transition. These allowances have already been created in previous scheme years within the overall cap limits, and so the strength of overall ambition will not be affected.

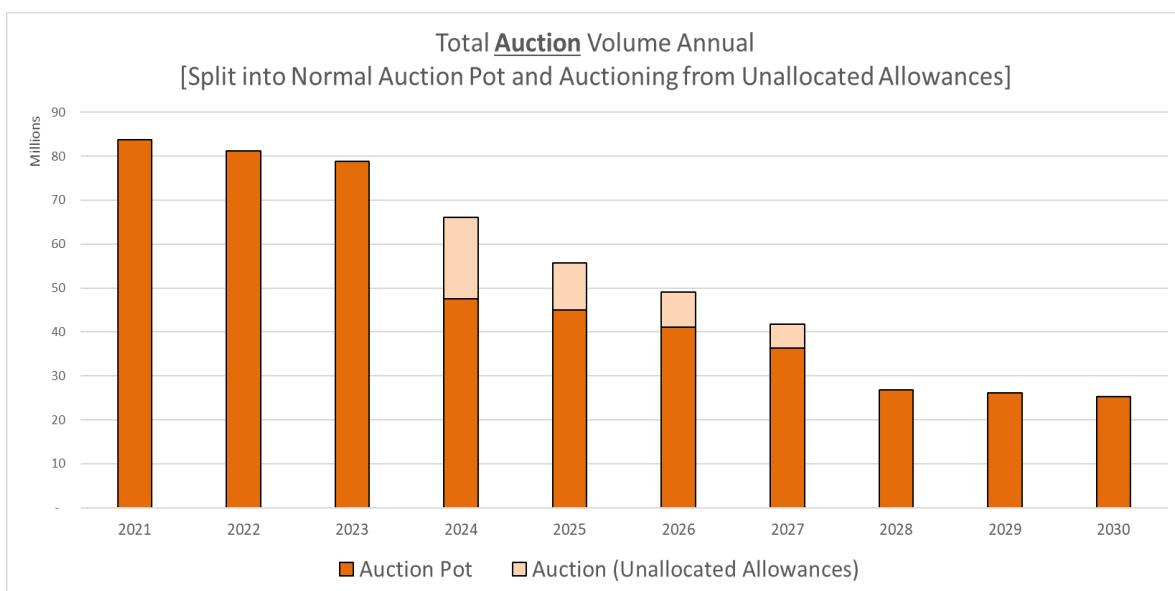
The table below sets out the number of allowances that will be bought to auction by year for the remainder of the phase. The table includes the auction top-up over 2024 – 2027, these allowances will be brought to market from the unallocated allowances.

**Figure 2: Table setting out the total allowances for auction over the remainder of the Phase, to the nearest 100,000.<sup>12</sup>**

	2024	2025	2026	2027	2028	2029	2030
<i>Auction share</i>	45,000,000	41,900,000	41,300,000	36,100,000	26,100,000	24,700,000	23,800,000
<i>Auction top-up</i>	23,300,000	13,300,000	10,000,000	6,700,000	0	0	0
<i>Total annual allowances auctioned</i>	68,200,000	55,200,000	51,300,000	42,700,000	26,100,000	24,700,000	23,800,000

Noting the importance of certainty as highlighted throughout the consultation responses, the auction calendar, which is published the year preceding the year in question will continue to set out the total number of allowances brought to auction annually. Further information on UK ETS allowance distribution and uses can found later in this chapter.

**Figure 3: Chart showing the total annual auction volume, including the allowances auctioned from the unallocated stationary free allocations and flexible share**



<sup>12</sup> This table is for illustrative purposes. Numbers may not add up due to rounding.

Figure 3 shows the annual auction volume for the phase. The total volume of unallocated allowances used to smooth the change in auction volumes is approximately 53.5 million. The illustration demonstrates that in practice there will be a gradual transition, allowing participants and the market time to adapt.

## Retaining allowances for market stability

### Summary of Proposal

The Authority proposed retaining a portion of unallocated allowances and/or flexible share for market stability uses.

Question
<b>32) Do you agree that a portion of unallocated allowances and/or flexible share should be retained for market stability purposes? (Y/N) Please explain your answer.</b>

### Summary of Responses

There were 57 respondents to question 32, of which 45 (79%) agreed with the proposal, four (7%) did not and seven (12%) did not directly answer the question. Among the respondents who agreed to the proposal several noted that they would prefer an automatic rather than a discretionary market stability mechanism. Many also stated they would only prefer this option if a CSCF could be mitigated against.

Those who disagreed said that allowances should be used for CSCF mitigation or be auctioned.

### The Authority Response

The Authority has decided to retain 29.5 million allowances in reserve as the flexible share, subject to a review later in 2023. These allowances can be utilised for market stability intervention and future (post 2026) CSCF mitigation. This is approximately 3% of the net zero consistent cap and is comparable to the current proportion of the cap kept in reserve as the flexible share. This volume is also comparable with the proportion of allowances other global ETS' put aside for future contingency.

The UK ETS is still a nascent market and a suitable reserve of allowances is important to enable the Authority to intervene to maintain market stability in response to market shocks and to retain the ability to mitigate the application of a CSCF, if required, in future allocation periods. This will provide the Authority with resilience to respond in a way that is flexible, targeted and timely in the face of future challenges.

It will also support the ongoing market review which will set the design of future UK ETS markets policy (see Chapter 3). As part of this we will review the size of the flexible share and

will consult on this by the end of 2023. If new evidence is brought to light through this process any allowances that are judged unnecessary for a reserve will be brought to auction, on the condition this does not undermine the functioning of the scheme. We intend to confirm the approach for bringing any additional allowances to auction later in the phase, by Spring 2024.

## Changes to free allocations in the context of a net zero consistent cap

### Summary of Proposal

The industry cap sets an upper bound on the quantity of free allocations that can be issued each scheme year. Under current scheme rules the industry cap is set at the UK's notional share of the EU ETS industry cap for Phase IV of the EU ETS. This is a fixed volume which is equivalent to 37% of the current UK ETS cap.

As the overall cap tightens to align with our net zero target, fewer allowances will be available each year over the course of the first phase of the UK ETS (2021-2030). To avoid any unintended impacts to market functioning, stability or liquidity which could arise if free allocations made up the majority of allowances under the cap, the Authority proposed resetting the industry cap to make up a percentage of the overall cap rather than it being set as fixed numbers, as in current legislation. The Authority also considered amending the share to be a lower or higher proportion of the overall cap than 37%.

### Questions

- 4) Do you agree with the Authority's minded to position to reset the industry cap, as presented above? (Y/N) Please explain your answer.**
- 5) Do you agree with the rationale put forward to support decisions the Authority will make in the future if resetting the industry cap? (Y/N) Please explain your answer, and set out if there are any other aspects you think we should take into consideration.**
- 6) Do you have a preference for a tighter or looser proportion than 37% for the industry cap? (Y/N) Please explain your preference.**

### Summary of Responses

There were 91 responses, of which 40 (44%) agreed with the Authority's minded to position to reset the industry cap. Of those who agreed, the majority raised a preference that the share of free allocations be a fixed proportion of the overall cap rather than a fixed number; respondents cited concerns around liquidity and market functioning in the instance that the industry cap was not reset and noted that we should be doing this to align with our net zero target.

Several respondents raised alignment with EU proposals and carbon leakage mitigation policies, to ensure that no differences between carbon costs in the UK and EU are introduced which could impact the functioning of cross border and international markets.

Forty respondents (44%) did not agree with the proposal to reset the industry cap. A key theme was that availability of free allocations should align with technology and infrastructure availability, and primarily be based on carbon leakage risk. Others also highlighted concerns that UK sectors could be put at a competitive disadvantage, that free allocations should be based on bottom-up methodology and that a reduction in the industry cap could create a risk of investment leakage.

Several respondents across those who agreed and disagreed with the proposal highlighted that the resetting of the industry cap should take account the risk of carbon leakage and the introduction of alternative policies. Others also raised that the lack of an impact assessment on the proposals to reset the industry cap and/or further detail about other support measures are barriers to providing a full response.

Eleven respondents (12%) did not state whether they agreed or disagreed with the proposals to reset the industry cap but did provide views on the proposals presented. In addition to the themes of technology availability, competitiveness, and carbon leakage, some respondents expressed concern that the speed of implementation of the industry cap was too quick. Another key theme was the certainty provided to industry around changes to free allocations, with some calling for further clarity on the approach to free allocation methodology.

Others responded that the UK's net zero target is a key reason for reducing the industry cap and that doing so would send a stronger signal to industry that they must adopt a faster path towards decarbonisation.

There were 74 responses to question five, of which 38 (51%) did not agree with the rationale put forward to support decisions the Authority will make in the resetting of the industry cap. Key themes were that free allocation policy should primarily be based on carbon leakage risk, that availability of allowances should be aligned with technology and infrastructure availability, that liquidity and market functioning is an important factor and that revenue should not be a consideration.

Other respondents noted the risk that uncertainty over future levels of free allocations can prevent and delay investment decisions. Several responses also suggested that revenues from the UK ETS could be hypothecated to support decarbonisation and that unallocated allowances should be used to mitigate the application of a CSCF.

Twenty five respondents (34%) agreed with the rationale put forward to support decisions the Authority will make in the resetting of the industry cap. They highlighted that the 'do nothing' approach would not be in line with a net zero consistent cap, that it would be preferable for the industry cap to be a proportion of a cap rather than a fixed number and that auctioning should remain the primary means of distributing allowances.

For those who neither agreed nor disagreed with the proposals the key themes were that changes should be fairly applied across participants and that they should be well communicated in a timely fashion. Those who agreed and disagreed with the proposals also supported the use of unallocated allowances to mitigate against the application of a CSCF and that free allocations should primarily be based on carbon leakage risk, with a consideration for alternative mitigation policies such as CBAMs.

There were 63 respondents to question six, of which four (6%) expressed a preference for a tighter proportion of industry cap, 32 (51%) a looser proportion and six (10%) the same proportion. The remainder of respondents did not give a preference on the level of industry cap.

Of those who preferred a tighter industry cap the main reasons given were alignment with the net zero target, emissions reductions potential and a disincentive to decarbonise if too many free allocations were distributed.

Of those who preferred a looser industry cap, 18 respondents (56%) said that avoiding carbon leakage should be a priority, 12 (29%) stated that the industry cap should be looser to provide time for decarbonisation technologies to become more widely available and seven stated that a tighter industry cap would put UK industry at a competitive disadvantage. Other respondents expressed concern that free allocation cuts could drive increases in carbon prices, prompt speculation in the market and cut into funds for decarbonisation projects. Some respondents also expressed views that the level of the industry cap should not constrain the outcome of the second phase of the free allocation review, that free allocations should not be reduced until an alternative carbon leakage mitigation could be put in place, and that free allocation levels should be calculated bottom-up and be consistent with the EU's industry cap.

Respondents who favoured the same level of industry cap cited liquidity and market functioning, an alternative carbon leakage mitigation and transparency of policy giving enough preparatory time for participants to react to proposed changes.

Some respondents did not express a view of the level at which the industry cap should be set but highlighted that affordability and availability of decarbonisation technologies, alternative carbon leakage mitigation and an impact assessment should all be considered before taking a final decision.

## The Authority Response

The Authority is committed to the minded to position to reset the industry cap in 2024 to align with the introduction of the net zero consistent cap and has decided to set the industry cap at a higher level of 40%. We have heard the concerns raised through consultation responses over liquidity and market functioning if we were not to reset the share of free allocations. The adjustment to the level of the industry cap will enable effective market functioning and allow sufficient allowances for auction.

The Authority has considered the following factors as initially stated, in addition to consultation responses and advice from the CCC:

- The year in which the industry cap falls beneath the level of free allocations.
- The distribution of allowances under the cap, and ensuring auctioning remains the primary means of distributing allowances.
- Impacts on liquidity caused by changes to the industry cap and absolute level of the cap.
- The cost to UK Government through foregone revenue via the issuance of free allocations versus the affordability of decarbonisation technologies for participants.

We have heard concerns from respondents regarding availability of decarbonisation technologies and carbon leakage risk, and advice from the CCC that there should be sufficient flexibility for future changes to free allocations. Setting the industry cap at the higher level of 40% will ensure that the Authority retains flexibility and the ability to continue to mitigate carbon leakage risk in the second allocation period (from 2026). This will follow the implementation of changes from the second phase of the free allocation review.

As stated in the consultation, the Authority remains committed to protecting current levels of industrial free allocation until 2026, subject to Activity Level Changes (ALCs). We will use an estimated 2.5 million allowances from the reserve to mitigate against any application of a cross-sectoral correction factor between 2024-2026 following the adjustment to the Industry Cap. This will protect current levels of Free Allocation for the rest of this allocation period.

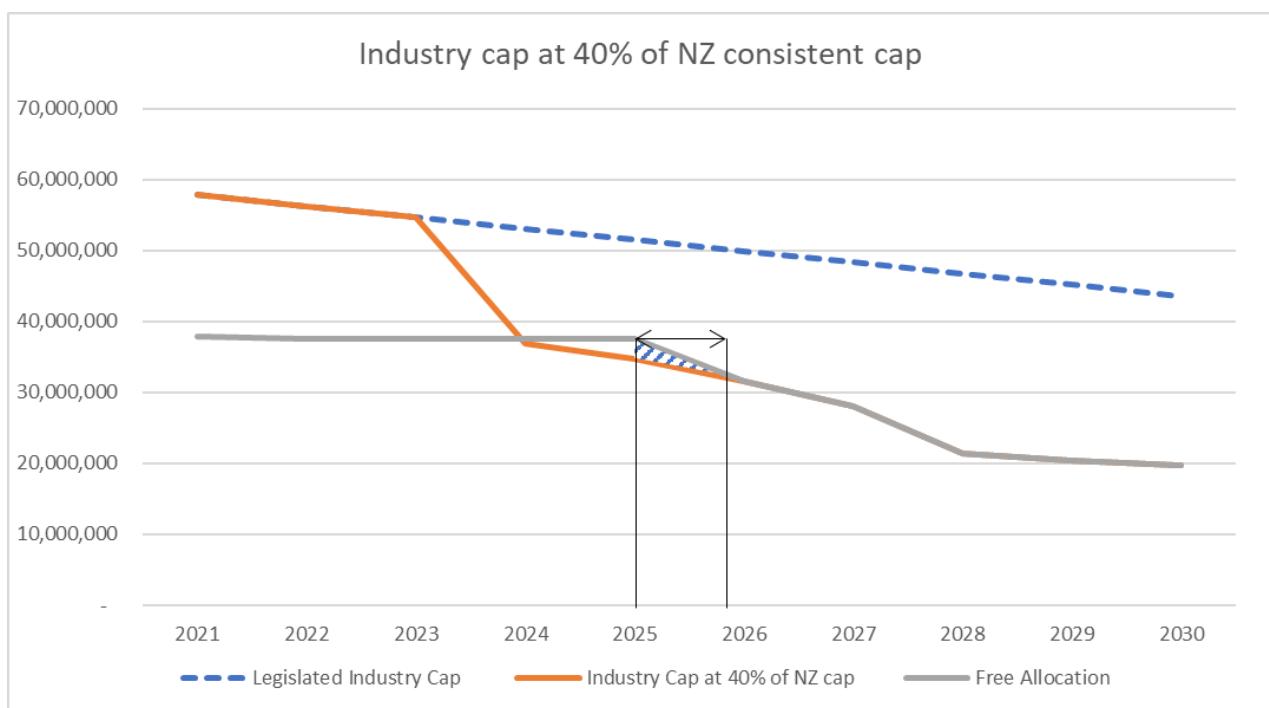
Protecting free allocation in 2024-2025 means that the step change between free allocations up to 2026, and the level of the industry cap for the latter half of the phase, is not as steep. This is demonstrated by the shaded area in Figure 4 below. Figure 4 also illustrates that there is currently a considerable excess of allowances under the current industry cap which is a symptom of the quantity of allowances available for free allocation being set more generously than the quantity needed. This has resulted in the build-up of unallocated allowances.

There will be a 16% reduction between free allocation issued in 2025 and the free allocation available in 2026 (the reset industry cap). This will not necessarily result in a uniform reduction in free allocations across each installation. We will be examining the methodology for distributing free allocations as part of the second phase of the free allocation review to ensure they are being targeted effectively at sectors most at risk. Deciding to set the industry cap at 40% will provide the Authority more flexibility for the decisions made in this review of free allocation methodology. Further details on this can be found in the response to questions 7-10<sup>13</sup>.

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<sup>13</sup> See pp. 30-33

**Figure 4: Chart demonstrating the change in free allocations in 2026**



In addition to helping the transition to the net zero consistent cap, setting the industry cap at 40% will also leave a higher proportion of allowances available to bring to auction and to keep in contingency for future use, through requiring fewer allowances from reserve pots to mitigate against the application of a CSCF in 2024 and 2025. This will further support industrial participants against short and long-term market impacts. Further details on this can be found in the response to questions 30-32<sup>14</sup>.

### Carbon Leakage Consultation

Carbon leakage is the movement of production and associated emissions from one jurisdiction to another due to different levels of decarbonisation effort through carbon pricing and climate regulation. In the UK ETS, operators considered as vulnerable to carbon leakage currently receive free allocations to mitigate this risk.

The UK Government published a consultation on 30 March 2023, addressing carbon leakage risk to support decarbonisation. The consultation explores a range of potential policy measures to mitigate carbon leakage risk in the future and ensure UK industry has the optimal policy environment to decarbonise. Potential policies include a carbon border adjustment mechanism (CBAM), mandatory product standards (MPS), and other policy measures to help grow the market for low carbon products, as well as emissions reporting that could support the implementation of these policies.

<sup>14</sup> See pp.20-23

Any measures, if taken forward, would need to be fair, transparent and contribute to a global green economic transition to net zero. Measures would also have to work cohesively with our existing carbon leakage policy measures, especially the allocation of UK ETS free allowances. Regardless of the policy mix taken forward, the UK Government would therefore engage extensively with the Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland at every stage to ensure the coherence of the wider policy framework.

## Mitigating against the application of a CSCF

### Summary of Proposal

The Authority proposed using a portion of unallocated allowances and/or flexible share to mitigate against the application of a CSCF prior to 2026. This would preserve the amount of free allocation to be distributed to operators in 2024 and 2025, avoiding reductions in free allocation.

Question
<b>29) Do you agree that, should the industry cap be reset to a level that would fall below free allocation in 2024 and 2025, a portion of unallocated allowances and/or flexible share should be used, as currently legislated, to mitigate against the application of a cross-sectoral correction factor? (Y/N) Please explain your answer.</b>

### Summary of Responses

There were 65 responses to question 29, of which 48 (74%) agreed with the proposal, nine (14%) disagreed and eight (12%) did not respond directly to the question.

The key themes given for those who agreed with the proposal were the need to mitigate carbon leakage risk, wanting to retain allowances to mitigate any future CSCF or to maintain a higher level of free allocations later in the phase, and the need for certainty regarding the level of allowances which would be available from 2026 onwards.

Those who did not agree with the proposal expressed preferences for other uses of allowances such as auctioning to increase liquidity or retaining allowances for future market stability mechanisms. Others stated that having a CBAM or better targeting of free allocations would be preferable to the CSCF mechanism in the future. One respondent flagged that any unallocated allowances should instead be deleted.

### The Authority Response

The Authority has heard the views from respondents about the need to mitigate the application of a CSCF. The Authority remains committed to the position set out in the consultation that

participants will see no reduction to their free allocations over 2024 and 2025, subject to ALCs, and that any CSCF will be mitigated through the use of reserve allowances. The Authority's decision to set the cap at the top of the range and an industry cap at 40% will require fewer allowances from the reserve pot for CSCF mitigation than would otherwise be the case. We will use an estimated 2.5 million allowances from the reserve to mitigate against any application of a cross-sectoral correction factor between 2024-2026 following the adjustment to the Industry Cap.

## Changes to the methodology for distributing free allocation

### Summary of Proposal

The Authority launched the review into free allocation policy with a Call for Evidence in spring 2021. As noted in the consultation, the free allocation review will be conducted in two phases. The first phase, as set out above, is focused on re-setting the industry cap, in line with proposed changes to the overall UK ETS cap. These top-down changes will be implemented to take effect in 2024, alongside changes to the UK ETS cap.

The second phase of the review will focus on the methodology for distributing free allocation to participants. These bottom-up changes will be implemented to take effect by 2026 to align with the second allocation period of the UK ETS.

We have committed to maintain current levels of free allocation until 2026 until the second phase is implemented.

The Authority proposed the following principles by which we will make future changes:

- Principle One – To ensure that the UK ETS appropriately mitigates carbon leakage risk caused by the carbon price it sets, ensuring a true reduction to global emissions.
- Principle Two –To take into consideration the availability and affordability of decarbonisation technologies for UK ETS sectors.
- Principle Three – Future changes to Free Allocation policy will align with our wider climate targets.

The Authority committed to consulting on the future changes in 2023.

Questions
<p><b>7) Do you agree with the principles set out above, by which we will propose future changes to free allocation policy? (Y/N) Please explain your answer or whether there are any others you would like us to consider.</b></p>
<p><b>8) Do you agree with the proposal to not use a CSCF to reduce free allocations proportionally for sectors, but to find alternative means of better targeting those allowances? (Y/N) Please explain your answer.</b></p>

**9) Are there specific elements of free allocation design with regards to eligibility, calculations, or other rules where you would like to see changes made, if you have not already flagged these via your Call for Evidence response? (Y/N) Please explain your answer and how they would align with the principles we have proposed.**

**10) Are there alternative areas you think we should consider making changes to, or alternative methodologies for the provision of free allocations which you would like us to consider? Please set these out and explain your rationale.**

## Summary of Responses

There were 83 responses to question seven, of which 56 (67%) agreed with the principles we set out by which we will implement future changes to free allocation policy. Several respondents noted that more details of exactly how future changes are made will be key to enabling participants to fully prepare.

Nine respondents (11%), from across those who both agreed and disagreed with the principles, suggested to amend principle one and replace the word ‘appropriately’ with ‘effectively’.

Seventeen respondents (20%) mentioned that the availability of decarbonisation technology will vary considerably within and between sectors and that free allocation methodology should take this into account. This was principle two as set out in the consultation. On the other hand, two respondents raised concerns around principle two and suggested it be removed.

Six respondents (7%) suggested that principle three should be removed, with four going on to say that this principle should be replaced with an alternative principle focusing on wider carbon leakage mitigation policy. Three respondents raised concerns that principle three could be used to overrule the other two principles. Alternatively, two respondents suggested that principle three should take priority over the other principles.

Eight respondents (10%) noted that a further principle relating to the development of wider carbon leakage mitigation policies should be added. Five respondents also suggested that an additional principle should be added to account for carbon pricing in the EU and other major economies.

There were 64 responses to question eight, of which 45 (70%) agreed with the proposal not to use a CSCF to reduce free allocations proportionally for sectors, but to find alternative means of better targeting those allowances.

Thirteen respondents (29%) who agreed with the proposal stated that free allocation should be targeted where it is most needed, rather than using a CSCF. Eleven respondents (24%) noted that they believe the CSCF is a blunt instrument. Six respondents (13%) raised concerns over the top-down approach in setting the industry cap and stated a preference for a bottom-up approach instead.

Of those respondents who didn't agree with the proposal, four (21%) argued that the CSCF is an important safeguard for upholding the share of auctioned emission allowances.

There were 55 responses to question nine. Thirteen respondents (24%) noted that free allocation design needs to consider the availability of decarbonisation technologies in future development.

Six respondents (11%) suggested that the methodology for benchmarking and carbon leakage assessment should continue to mirror the EU scheme, but that the assessment should be based on UK level data.

In relation to benchmarking, seven respondents noted that the heat benchmark should be set on technologies available to all rather than sites with specific circumstances, with some citing biomass as an example of the latter. Four respondents argued that the calculation of benchmarks is currently based on the rate of historical improvements, which were unsustainable and that for some processes, there is a limit on the efficiency that can be achieved.

Several respondents noted that the criteria to assess carbon leakage risk should be clearly set out and fixed before any free allocation assessment is conducted.

Other respondents noted issues such as: potential distortions in the hydrogen market when low carbon hydrogen production begins, low-carbon heat used in heat networks, and linear reductions in carbon emissions being less likely due to focussing investments on larger decarbonisation projects.

In response to question 9, some respondents have suggested changes to specific benchmarks which we have picked up as part of our expedited changes workstream. More information can be found on these in the response to question 11<sup>15</sup>.

There were 39 responses to question 10. Six respondents (15%) noted their preference for the trajectory of the future industry cap to be set based on the availability of decarbonisation technologies.

Five respondents (13%) said that there should be further consideration of how potential Carbon Border Adjustment Mechanisms (CBAMs) and future free allocation will interact, with a corresponding phase out of free allocation in the sectors covered by CBAMs. Some respondents expressed a preference for a tiered approach to the carbon leakage list.

Other issues flagged by respondents include: requests to make changes to benchmarks used in the chemicals sector, treatment of Combined Heat and Power (CHP) plants in free allocation policy, hypothecation of funds from the UK ETS to support decarbonisation for covered sectors, inclusion of greenhouse gas removals (GGRs) and off-setting of on-site emissions within the scheme, and the administrative burden of the free allocation process.

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<sup>15</sup> See pp. 51-53

## The Authority Response

We will be consulting on future changes to free allocation methodology before the end of 2023. Our indicative timelines for phase 2 of the free allocation review are set out below:

- By end of 2023: Consultation on the second phase of the free allocation review
- 2024: Government response on the second phase of the free allocation review consultation
- 2024: UK ETS Implementation Measures exercise
- 2026: Changes to free allocation methodology implemented in line with the second allocation period.

We will use the evidence gathered in this consultation and our prior Call for Evidence, together with future stakeholder discussions, to develop our policies for the phase 2 review consultation. We will be conducting this work alongside UK Government development of additional carbon leakage mitigation policies, such as a CBAM or low carbon product standards.

For phase 2 of the free allocation review, the Authority will be looking at the methodology for distributing free allocations and exploring ways we can better target those most at risk of carbon leakage. In line with principle one, as set out in the consultation, this will include looking at the current method for producing the carbon leakage list and how this list is applied.

Through this review we will examine the pre-existing methodology for free allocations, such as benchmarks, historic activity levels, and ALCs. We will also consider whether we want to introduce any new elements to free allocation methodology.

The availability and accessibility of decarbonisation technology was raised as an important area of focus for the review by several respondents to this consultation. This is in line with the principles we proposed as part of the consultation, and we remain committed to taking these forwards. As a result, we will actively review the relevant methodology for free allocations to consider the availability and accessibility of large-scale decarbonisation technology through the phase 2 free allocation review.

Through this review we will aim to develop a free allocation methodology that avoids the use of a CSFC factor where possible and instead find alternative means of better targeting free allowances.

## Broad approach to other carbon leakage mitigation policies

### Summary of Proposal

The changes that we propose as part of this free allocation review will be designed to mitigate against carbon leakage risk faced by industry in the short and medium terms, and at least for the first phase of the UK ETS. We recognised that the first step is to use climate diplomacy to

encourage our trading partners to ambitiously mitigate climate change in coordination with each other to reduce the leakage risk across economies. Carbon leakage risk will also reduce where there is demand for low-emissions products and consumers decide to make green choices. We expect this demand will grow over time and as set out in the Industrial Decarbonisation Strategy, the UK Government is developing a range of ‘demand-side’ policy levers to support the growth of the market for low emissions products, including product emissions labelling and green procurement.

**Question**

**12) Are there other carbon leakage mitigation policies which are not already being considered by the UK Government, Scottish Government, Welsh Government, and the Department of Agriculture, Environment and Rural Affairs (DAERA) for Northern Ireland, as listed above, which you would like to flag to us? (Y/N) Please explain your answer.**

## Summary of Responses

There were 64 responses to question 12. Eleven respondents (17%) welcomed the announcement from UK Government that there will be a consultation on CBAMs and product standards. Nine respondents (14%) stated that they would like a CBAM introduced, and five respondents stated that they would like product standards to be introduced.

Four respondents (6%) suggested that UK Government could look at green public procurement rules. Several respondents noted that a combination of different policies will be required to decarbonise UK industry whilst maintaining competitiveness. Six respondents specified that the development of carbon leakage policies should be done alongside the review of the UK ETS.

Other points raised by respondents include: seeking an exemption from the EU CBAM, phasing out of free allocation, hypothecation of revenue from the UK ETS, greenhouse gas removals, a downstream excise tax, a dual-track emissions cap for activities associated with internal consumption and those intended for export markets, and the importance of climate diplomacy.

## The Authority Response

The UK Government has published a consultation on a range of carbon leakage mitigation options, including on whether measures such as a CBAM and product standards could be appropriate tools in the UK’s policy mix. Any measures would be designed to work cohesively with the UK ETS Authority’s decisions on the future of free allocations, with the aim of ensuring that carbon leakage risks are mitigated at all stages of the UK’s net zero transition.

Further information on Carbon Leakage can be found on page 28.

## UK ETS allowance distribution and uses

The net zero consistent cap represents the maximum allowances that can be created over the phase. The distribution of these allowances over the phase will determine the number of allowances brought to auction each year (auction share). The table below sets out the different pots and mechanisms within the UK ETS.

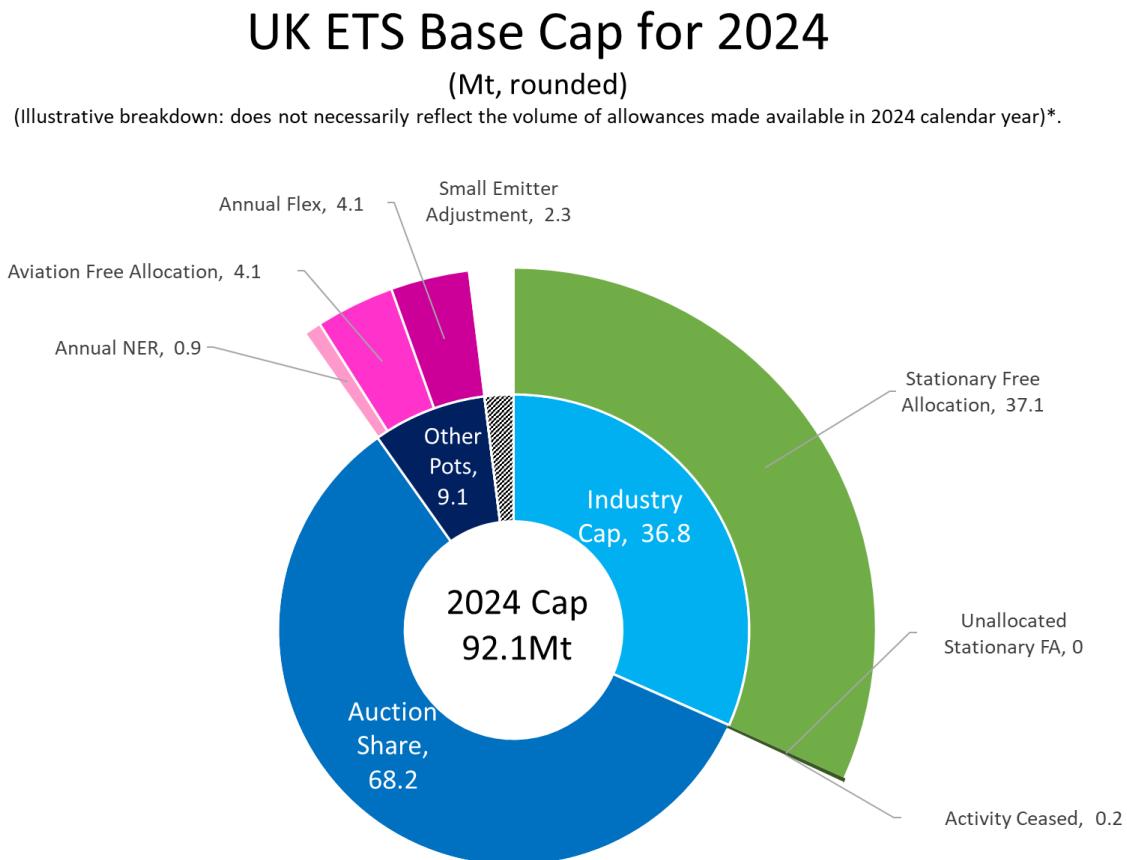
	<b>Definition</b>	<b>Current Uses</b>
Auction Share	This is the number of allowances which can be brought to auction within a scheme year <sup>16</sup> .	To be brought to auction on the primary market.
Industry Cap	This is the total number of allowances reserved to be distributed to stationary operators as free allocations <sup>17</sup> .	To be used as stationary free allocations.
Stationary Free Allocations	This refers to the total number of allowances which are being distributed to stationary operators as free allocations in a scheme year following the bottom-up free allocation calculation, accounting for any changes in historic activity level if the threshold has been surpassed.	To be distributed to stationary operators as free allocations.
Unallocated Stationary FAs (unallocated allowances)	<p>This refers to the difference between the industry cap in any given scheme year and the level of stationary free allocations following bottom-up free allocation calculations.</p> <p>Unallocated allowances from 2021 – 2023 will be brought to auction over 2024 – 2027 (see page 18)</p>	<p>To mitigate against application of a Cross-Sectoral Correction Factor (CSCF).</p> <p>To be used by the Cost Containment Mechanism (CCM).</p>
Aviation Free Allocations	This refers to the total number of free allocations distributed to aircraft operators. The allocation is based on historic activity data and does not account for new entrants or activity level changes. A yearly reduction factor	To be distributed to aircraft operators as free allocations.

<sup>16</sup> This is set out in the Greenhouse Gas Emissions Trading Scheme Auctioning Regulations 2021.

<sup>17</sup> The industry cap is defined as X [DN Currently, the industry cap is defined by reference to the industry cap set out in Article 16a of the Free Allocation Regulation] in the Greenhouse Gas Emissions Trading Scheme Auctioning Regulations 2021.

	<b>Definition</b>	<b>Current Uses</b>
	equivalent to 2.2% is applied to free allocation entitlement.	
Flexible Share	This is a reserve pot of allowances and is calculated as 3% of the total cap over the phase and divided over each scheme year to calculate a single year's flexible share.	To mitigate against application of a CSCF. To be used by the CCM.
New Entrants Reserve	This is a reserve pot of allowances for new entrants to the scheme, to award increases in allowances due to Activity Level Changes (ALCs), and is equivalent to c.2% of the overall cap.	To be used as FA for new entrants into the scheme.  To be used to top up FAs if additional allowances are required following ALC process.  Up to 25% of allowances over the phase remaining in this pot can be accessed by the CCM when it is triggered.
Activity Ceased	These represent allowances which operators have returned to the Authority, in the instance where they have not cleared them from their account via sale or use for compliance following the cessation of activity and closing down of operator account.	
Market Stability Mechanisms	This is a pot of allowances which can be used by Market Stability Mechanisms. At the beginning of the UK ETS, this account was not stocked with any allowances. Currently, this account can only be stocked if multiple auctions do not clear and leads to the number of allowances being rolled forward into the four subsequent auctions crossing a threshold.	To be used by the CCM

**Figure 5: Indicative chart showing the distribution of allowances under the UK ETS for a scheme year.**



\*The UK ETS Cap is defined in legislation for the trading period (2021-2030). An annual breakdown (the "base") is defined in article 22 to facilitate various ETS rules which operate on an annual basis under the Cap. This chart reflects one internally consistent way of understanding the "2024" base value. It is not intended to reflect the volume of allowances made available in calendar year 2024.

- Stationary Free Allocation, Unallocated Stationary FA and Activity Ceased FA are all consistent with Published UK ETS Allocation Table as of 11.05.2021  
[For the latest figures see: <https://www.gov.uk/government/publications/uk-ets-allocation-table-for-operators-of-installations>]
- Aviation Free Allocation consistent with Published UK ETS Aviation Allocation Table as of 28.6.2021.  
[For the latest figures see: <https://www.gov.uk/government/publications/uk-ets-aviation-allocation-table>]
- Auction Share reflects the Auction Calendar as of 19.10.2021, adjusted to not double-count carry-over between auctions  
[<https://www.theice.com/emissions/auctions/uk-emission-allowances>]
- Annual Flex and Annual NER figures are indicative values reflecting 1/10 of their values for the trading period (2021-2030). This does not necessarily reflect the volume that will be made available in calendar year 2024.
- Small Emitter Adjustment is the volume of allowances associated with the hospital and small emitter reduction factor per article 21.

For full details see The Greenhouse Gas Emissions Trading Scheme Order 2020 [<https://www.legislation.gov.uk/ksi/2020/1265/contents/made>]

Figure 5 sets out how allowances under the UK ETS cap are distributed across different mechanisms. This is intended to facilitate the interpretation of the Government response, and as such emphasises how the different UK ETS mechanisms interact within the cap. It is not intended to reflect the volume of allowances made available in a given calendar year.

## Chapter 2: Free allocation review - technical changes

This chapter covers proposals set out in Chapter 2 of the consultation.

The Authority has decided to amend the Activity Level Changes (ALCs) Regulation<sup>18</sup> to provide for the optional recalculation of change in activity level in 2021 omitting the 2020 COVID year, for those operators who can demonstrate significant discrepancies between reductions in activity and emissions.

We have decided not to effect changes to ALCs Regulation to take into account the turn-off of activity.

We have decided not to amend the ALCs Regulation to treat existing sub-installations in the same way as new sub-installations when existing installations make investments to increase production capabilities.

We will bring current benchmark values into UK law.

We will proceed with the proposed change to amend the electricity generator definition to consider electricity exports in the baseline period only.

We will effect a change to the electricity generator classification to exclude installations that have produced electricity for sale, if that electricity was produced by means of a Combined Heat and Power Quality Assurance (CHPQA)- certified plant.

We will effect a change to legislation to allow electricity generators who have not exported measurable heat produced by means of high-efficiency cogeneration in the baseline period (2019-2023) to be eligible for free allowances once they can demonstrate they meet eligibility criteria.

We will effect temporary changes to the lime benchmark and to the carbon leakage classification of malt extract production for the 2024 and 2025 scheme years.

### Free allocation technical changes

When considering changes to free allocation, the Authority is conscious of balancing the need to provide operators with sufficient time to adapt to these changes, and the need to take immediate action where not doing so would have a detrimental impact on the functioning of the market and its participants.

<sup>18</sup> Commission Implementing Regulation (EU) 2019/1842 as it forms part of domestic law.

The Authority outlined six proposals, which have a significant impact in the first years of free allowance allocation for a subset of operators, do not require a fundamental rethink of free allocation methodology and are deliverable in the short term. In addition to these, this Chapter provides the Authority response to additional proposals relating to amendments to benchmarks/carbon leakage list and to electricity generators contained in Chapters 2 and 9 of the consultation respectively.

The proposal to amend the ALCs Regulation<sup>19</sup> due to the 2020 COVID year, and associated questions 13-17 have been addressed and responded to in the initial government response<sup>20</sup>. We have given our response regarding the 2021 ALCs process below.

### Proposal one: Amending the Activity Level Changes Regulation due to the 2020 COVID year

Following further consideration of the issue and responses received, the Authority is proposing to amend the ALCs Regulation to provide for the optional recalculation of change in activity level in 2021 omitting the 2020 COVID year, for those operators who can demonstrate to the Authority significant discrepancies between reductions in activity and emissions in the 2020 scheme year caused by the COVID-19 pandemic. In order to determine if there is a significant discrepancy, a threshold level of 15% between the reduction in activity and reduction in emissions between the 2019 and 2020 scheme years will be applied, as for the 2022 process.

It is the Authority's view that the impact of the 2020 COVID year on 2021 ALCs will be similar to that on 2022 ALCs and that the same policy approach should apply to ensure that free allocations work as intended to mitigate the risk of carbon leakage.

Operators will be required to submit evidence of both their activity levels and correlating emissions to show that they meet the threshold level, and that the discrepancy between emissions and activity reductions was caused by the COVID-19 pandemic to their respective Regulator. As required for 2022, operators will need to provide verified sub-installation emissions data as part of said evidence.

The Authority defines a threshold as the difference between the percentage reduction in activity and the percentage reduction in correlating emissions for the 2020 scheme year. Instances where this difference is significant expose areas where the ALCs process may not be working as intended. The threshold approach has been chosen by the Authority, and will be applied for 2021 as for 2022, as it is sector-agnostic and allows for a methodological way of approaching changes to ALCs.

The Authority proposes to define significant discrepancies in the same way as for 2022 ALCs, by assessing at 15% a threshold level that would capture installations that experienced a high level of discrepancy between the reduction in activity and reduction in correlating emissions. This level will capture installations who have seen the largest, and therefore most impactful,

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<sup>19</sup> Commission Implementing Regulation (EU) 2019/1842, as it forms part of domestic law.

<sup>20</sup> <https://www.gov.uk/government/consultations/developing-the-uk-emissions-trading-scheme-uk-ets>

reduction in activity which has not aligned with their reduction in emission levels and will not capture installations for whom the discrepancy is lower, and therefore where ALC policy should be working as intended. The Authority intends for this amendment to deal with the specific issue of COVID impacting the ALC process and not as wider relief for operators impacted by COVID.

We are proposing this final further change in respect of COVID due to the unprecedented and in some instances large impacts of COVID-19 on activity levels, but not emissions, that were felt by some installations which led to the ALC process not working as intended.

We expect this proposal to capture a relatively small number of the most impacted stakeholders. We will process applications as soon as is practicably possible with the aim of completing this ahead of 2024 free allocation distribution by 28 February 2024.

If the 2020 year is omitted for eligible operators, having considered the responses we received, we will use 2018 and 2019 in the calculation of 2021 ALCs for operators eligible for relief. These are years which are reflective of recent activity and associated emissions closest to 2020, which is consistent with the policy intent of ALC to ensure that changes in free allocations are reflective of activity.

**Proposal two: amendment to the Activity Level Changes Regulation to take into account the turn-off of activity for maintenance or planned down time**

### **Summary of Proposal**

Under current ALC rules, if an operator were to turn-off their activity to undergo maintenance or improvement works, and this led to average activity levels (calculated from the previous two years activity levels) decreasing by 15% or more compared to historic activity levels, they would see a reduction in their free allocation of allowances.

The Authority proposed not to make changes to the ALCs Regulation to take into account the turn-off of activity. This is because whilst the COVID-19 pandemic was an exceptional event, which could not be planned for, operators can plan ahead for the turn-off of activity and should be encouraged to do so as efficiently as possible. Furthermore, the Authority also highlighted that during the time that activity is turned off, emissions will also reduce, which means that operators will have received more free allocation than they should have to cover their reduced emissions. ALCs will, as intended, rectify this by reducing their free allocation.

#### **Question**

**18) Do you agree that no changes should be made to the Activity Level Changes Regulation to take into account the turn-off of activity? (Y/N) Please explain your answer.**

## **Summary of Responses**

Of 40 respondents, 29 (73%) agreed that no changes should be made to the ALCs Regulation to take into account the turn-off of activity. Respondents noted that fluctuations in activity and maintenance are part of normal activity for industrial operators, and as such are already factored in through the ALC process.

Ten respondents (25%) disagreed. These responses noted that energy and activity were not always proportionally linked, as production following the shut-down of activity could be inefficient. Respondents also raised that the current ALC rules can constitute a barrier to energy efficiency investments due to the loss in free allowances.

## **The Authority Response**

The Authority has decided not to effect changes to ALCs Regulation to take into account the turn-off of activity. The policy intent of ALC is to ensure that changes in free allocations are reflective of activity levels, taking into account fluctuations that can occur. Maintenance and turn-off of activity are part of an industrial operator's regular activity, and as such should not be treated differently with regards to ALC policy. The Authority is of the view that the current rules are consistent with ALC policy intent. Operators should be encouraged to plan for their maintenance activities as efficiently as possible.

As outlined in responses to questions 7-10, for phase 2 of the free allocation review, the Authority will be looking at the methodology for distributing free allocations and exploring ways it can better target those most at risk of carbon leakage. This will include reviewing ALCs policy.

## **Proposal three: Activity Level Changes and treatment of existing/new sub-installations**

### **Summary of Proposal**

The Authority proposed to amend the ALCs Regulation to treat existing sub-installations in the same way as new sub-installations when existing installations make investments to increase production capabilities. This would mean that sub-installations that are already part of UK ETS (incumbent sub-installations) would receive increased levels of free allocation from the first year of operation, following increased production levels.

<b>Question</b>
<b>19) Do you agree with this proposed change? (Y/N) Please explain your answer.</b>
<b>20) How can operators provide evidence that their increase in output is due specifically to investments to increase production capabilities?</b>

## **Summary of Responses**

Of 41 respondents to question 19, 37 (90%) agreed with this proposed change. Themes from these responses included that the proposal would level the playing field between incumbent and new sub-installations. Respondents also raised that the proposal could to a certain extent remove a barrier to investing in increasing the capacity of existing plants. Several respondents noted that treating existing sub-installations in the same way as new sub-installations could avoid the perverse incentive of investing in new sites for the simple reason of receiving the increase in free allowances at a faster rate.

One respondent (2%) disagreed. The respondent raised that the difference between new entrants and incumbent installations should remain clear, as currently legislated.

There were 31 responses to question 20. Many respondents raised that they would be able to provide proof of the relevant Capital Expenditure that led to increased output. Several respondents highlighted that this is already covered as part of the existing annual verification cycle, and other respondents raised that the current verification process could be extended to include such investments. Respondents also noted that this could be evidenced via updates to the greenhouse gas (GHG) permit.

## **The Authority Response**

Following further consultation with Regulators, the Authority has decided not to proceed with the proposed change due to significant implementation challenges and policy reasoning for the differentiation between new/existing sub-installations.

If a change to ALC policy were to be made to treat existing sub-installations in the same way as new sub-installations in such scenarios, criteria would need to be defined to qualify what would constitute an investment in production capabilities. Regulators would also be required to assess whether installations meet these criteria. This would be similar to previous rules which were in place during phase III of the EU ETS. These were particularly complex and burdensome for Regulators and operators which was one of the reasons ALC were developed. The Authority is therefore of the view that additional complexity and burden should be avoided in this circumstance.

Furthermore, in the consultation, the Authority set out criteria for the technical changes proposals included in Chapter 2, in particular that they do not require a fundamental rethinking of free allocation methodology and are deliverable in the short term. Following further consultation with Regulators, the Authority has concluded that this proposal does not meet these criteria.

The Authority acknowledges that new entrants/new sub-installations and existing sub-installations are differentiated in these specific circumstances. Following further consideration and consultation with Regulators, the Authority believes that this is with good reasoning. New entrants and new sub-installations do not have historical activity levels, and therefore must be treated differently. Incumbents do have this data available, and as such a comparison can be made between recent and historical activity to ensure that free allowances are reflective of activity, in line with ALC policy intent. Furthermore, the differing treatment between existing

and new sub-installations will only occur during the first two years of activity, which is minimal when compared to the total timespan of the installation's activity. The Authority recognises participants' views that there can be challenges with ALC policy and as such is not ruling out future changes to ALC. As outlined in responses to questions 7-10, for phase 2 of the free allocation review, the Authority will be looking at the methodology for distributing free allocations and exploring ways we can better target those most at risk of carbon leakage. This will include reviewing ALC policy.

## Proposal four: putting current benchmark values in UK law

### Summary of Proposal

The UK Free Allocation Regulation<sup>21</sup> currently applies EU ETS benchmarks for the calculation of free allocation in the UK ETS. Benchmarks are adopted under EU law and made applicable in UK law by reference in the UK Free Allocation Regulation. This means that if the EU were to make changes to benchmarks in the future, these would automatically apply to the UK ETS.

We proposed to bring the current benchmark values into UK law, by direct inclusion in UK ETS legislation. The Authority will be considering changes to benchmarks as part of the wider free allocation review, and a first step to any changes could be to incorporate benchmark values, as they currently stand, directly into UK law, so that these benchmarks are fixed in time.

Question
<b>21) Do you agree with this proposed amendment? (Y/N) Please explain your answer.</b>

### Summary of Responses

Of 48 respondents to question 21, 38 (79%) agreed that current benchmark values should be brought into UK law by direct inclusion in UK ETS legislation. Themes from these responses include that this would allow the Authority to consider future changes to benchmarks based on UK specific circumstances, that any changes to benchmarks should be done in consultation with scheme participants and that the Authority would need to consider whether any future changes to benchmarks could adversely impact linking with other schemes. Several respondents noted that EU benchmarks are due to be updated ahead of the next allocation period, and do not include data from UK operators. Respondents also raised that the smaller pool of UK operators could lead to issues in the setting of UK specific benchmarks.

Four respondents (8%) disagreed. Two respondents raised that there should be correlation between UK and EU schemes, including benchmarks, as values would not automatically update under the proposal.

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<sup>21</sup> Commission Delegated Regulation (EU) 2019/331 of 19 December 2018, as it forms part of domestic law, amended by Schedule 1 to the Greenhouse Gas Emissions Trading Scheme (Amendment) Order 2020, article 30 of the Greenhouse Gas Emissions Trading Scheme (Amendment) Order 2021 and Part 3 of the Greenhouse Gas Emissions Trading Scheme (Amendment) (No. 2) Order 2022.

Six respondents (13%) did not directly answer the question. Of these, two respondents highlighted the importance of considering the proposal's impact on linking with other schemes.

## The Authority Response

The Authority will proceed with the proposed change to bring current benchmark values into UK law. Benchmark values, as they currently stand, will be incorporated directly into UK law so that they are fixed in time.

Benchmark values will remain the same for the remainder of the current allocation period (2021-2025). The only exception to this is temporary changes to specific benchmarks which are referenced in the response to question 11<sup>22</sup>.

For the next allocation period (2026-2030) and as part of phase 2 of the free allocation review, the Authority will be looking at the methodology for distributing free allocations and exploring ways to better target those most at risk of carbon leakage<sup>23</sup>. This will include a review of benchmarks that are used for the UK ETS.

**Proposal five: amending the electricity generator definition to only consider electricity exports in the baseline period**

## Summary of Proposal

The Authority proposed to amend the electricity generator definition to consider electricity exports in the baseline period, rather than electricity exports since 2005. This would provide the possibility for operators to change their electricity generator status for future allocation periods, should they put a stop to the export of electricity for sale to third parties prior to the baseline period<sup>24</sup>. We specified that this proposal would not apply for the 2021-2025 allocation period, as the electricity generator classification for this period was already determined by the Authority as per current legislation.

Questions
<b>22) Do you agree with this proposed amendment? (Y/N) Please explain your answer.</b>
<b>23) Should minimal or one-off electricity exports be excluded from the electricity generator classification? (Y/N) Please explain your answer.</b>

## Summary of Responses

Of 36 responses to question 22, 31 respondents (86%) agreed with the proposed amendment to the electricity generator definition. Themes from these responses included that the baseline period would be a more accurate reflection of operations, and that industrial sites that have invested in Combined Heat and Power (CHP) have done so to provide energy to their site in

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<sup>22</sup> See pp.51-53.

<sup>23</sup> See responses to questions 7-10, pp.32-35.

<sup>24</sup> For the 2026-2030 allocation period, the baseline period is 2019-2023.

the most efficient way and therefore should receive the same levels of free allowances as comparable sites. Several respondents highlighted that it would be too late to change their electricity generator classification for the next allocation (2026-2030) period as the baseline period (2019-2023) is already well underway. Several respondents also requested that the change be applied for the current allocation period (2021-2025) as the current proposal would not support operators currently classified as electricity generators.

Two respondents (6%) disagreed. One respondent raised that the proposal does not go far enough, as it will be too late for many operators to benefit as we are already more than halfway through the baseline period for the next allocation period.

Three respondents did not answer the question directly. One respondent suggested that where electricity generation is ancillary to the main operation of the site, the installation should not be considered an electricity generator.

Of 38 responses to question 23, 29 respondents (76%) agreed that minimal or one-off electricity exports should be excluded from the electricity generator classification. Themes from these responses included that electricity spills can at times not be planned or avoided, that the export of electricity is at times the only reasonable use for surplus generation, and there are scenarios where the electricity is exported not for the explicit purpose of sale, but for reasons such as safety and reliability. One respondent (3%) raised that the current rules can create competitive imbalances within a sector, between operators classified as electricity generators and those that are not. Several respondents provided suggestions as to how the minimum electricity threshold could be set, such as a threshold of 250,000 kWh, 2% of installed capacity, on a case-by case basis depending on the plant's capacity, or a percentage of generated electricity.

Six respondents (16%) disagreed. Two respondents raised that even small electricity exports compete with wider electricity production and that the proposal would risk distorting the power market.

## The Authority Response

The Authority will proceed with the proposed change to amend the electricity generator definition to consider electricity exports in the baseline period, rather than electricity exports since 2005. The classification as an electricity generator will therefore in future be tied to recent activity, rather than all exports since 2005. This will also allow operators to change their classification as an electricity generator if they have put a stop to the export of electricity to third parties.

The Authority acknowledges that under this proposal, there is limited opportunity for operators to change their electricity generator classification specifically for the next allocation period, as the baseline period is already underway. As such, operators that can provide as part of their free allocation application a statement and evidence to their respective Regulator that they will no longer produce electricity for sale, will not be treated as electricity generators even if they exported some electricity in the baseline period. Said evidence could for example include that the operator's electricity generation plant has been decommissioned or is no longer connected

to the grid. If, after this point, the operator re-starts exporting electricity for sale, they will be treated as an electricity generator and their free allocation will be re-calculated.

The Authority also acknowledges that there are scenarios in which the sale of electricity is not the primary purpose of generation. This could lead to very small electricity exports classifying an operator as an electricity generator. The Authority has decided that minimal electricity exports will also be excluded from the electricity generator definition. “Minimal” will be determined by comparing the installation’s exported electricity and generated electricity, and a threshold of 5% will be set. This means that installations that export 5% or less of their generated electricity will not be classified as an electricity generator.

These proposals will only be applied for the next allocation period (2026-2030) and will not be applied for the current allocation period (2021-2025). This is because the electricity generator classification for the current allocation period was already determined by the Authority as per current legislation. The Authority has a strong preference for changes to free allocation policy to be forward-looking to provide certainty to UK ETS participants, and exceptions to this should only be made in certain exceptional circumstances. In this Chapter, the Authority proposed changes to ALCs policy prior to the next allocation period. However, this was due to the unprecedented and in some instances large impacts of the COVID-19 pandemic that led to ALCs processes not working as intended. The Authority also considered changes to certain benchmarks and applications of the carbon leakage list prior to the next allocation period. However, this was in specific cases where these would be unattainable for industry in a UK context, causing unintended perverse incentives, or unequal treatment of participants outside of the current policy intent.

## Proposal six: Combined Heat and Power (CHP) plants and electricity generator definition

### Summary of Proposal

The Authority proposed two options:

**Option 1:** Maintain the current rules regarding electricity generator classification and its application to CHP plants.

**Option 2:** Amend the electricity generator classification to exclude installations that have produced electricity for sale to third parties, if that electricity was produced by means of a CHPQA-certified plant, operating as part of an operator’s industrial activity. This would not exclude CHP plants that operate independently from this classification. This would mean that operators who have invested in on-site CHPQA-certified CHP plants to generate heat and power for their industrial activity, and export excess electricity to the grid, will not have their whole installation classified as an electricity generator. We specified that this option would not apply for the 2021-2025 allocation period, as the electricity generator classification for this period was already determined by the Authority as per current legislation.

## Questions

- 24) Should the current rules be maintained? (Y/N) Please explain your answer. If you answered 'Yes' please set out what the benefits of doing so are in your view.**
- 25) Should an amendment to the electricity generator classification be made to exclude installations that produced electricity for sale to third parties, if that electricity was produced by means of a CHPQA-certified plant, operating as part of an operator's industrial activity? (Y/N) Please explain your answer.**
- 26) Should a cap be set on the maximum amount of electricity that can be exported as a condition to this exclusion? (Y/N) Please explain your answer.**
- 27) Do you believe that the Option 2 proposal will support investments in long-term decarbonisation solutions? (Y/N) Please explain your answer.**
- 28) How can operators provide robust evidence that their CHPQA-certified CHP plant operates as part of their industrial process, and does not operate independently for the sole purpose of generating electricity for sale?**

## Summary of Responses

Of 41 responses to question 24, six respondents (15%) agreed that the current rules should be maintained. Themes from these responses included that amending the rules could lead to perverse outcomes, as the benefits of exported non-abated natural gas CHP electricity are likely to be negligible, and that changes could lead to competitive distortions in the power generation sector.

Thirty-four respondents (83%) disagreed. From these responses it was noted that CHP is a decarbonisation pathway which should be encouraged, particularly CHP from low carbon sources such as biomass, hydrogen and energy from waste. Several respondents suggested that the Option 2 proposal should be effective immediately, instead of the next allocation period.

Responses to question 25 included very similar themes to that of question 24. Of 45 responses, 38 respondents (84%) agreed with the suggested amendment. Respondents highlighted the benefits of CHP, and that without such an amendment there could be a perverse incentive for operators to generate electricity and not to export it. Six respondents (13%) disagreed, highlighting that CHP should not be further incentivised.

Of 37 responses to question 26, three respondents (8%) agreed a cap be set on the maximum amount of electricity that can be exported as a condition to this exclusion.

Thirty-three respondents (89%) disagreed. Themes from these responses included that the electricity being generated is from what would be waste heat and that there should be an incentive to export electricity as it would need to be supplied elsewhere in any case.

Respondents also raised that electricity generation can vary based on production needs and that CHP contributes to the national grid mix with a non-fossil fuel source. Several respondents highlighted certain perverse incentives that could result from the setting of a cap, such as the inefficient running of a CHP, not exporting electricity to avoid breaching the cap when there is a grid need for electricity and artificially restricting the potential volumes of exported power from CHP.

Of 40 responses to question 27, 32 respondents (80%) agreed Option 2 will support investments in long-term decarbonisation solutions. Themes from these responses included that CHP currently produces low carbon electricity which would need to be replaced by less efficient solutions, and that CHP can use different fuels and will be an important tool to demonstrate the value of fuel-switching. Respondents also highlighted that this would improve the economics of investments in CHP and would encourage investments made towards decarbonisation.

Four respondents (10%) disagreed. One respondent highlighted that Option 2 would incentivise investment in CHP instead of lower carbon long term solutions. Another respondent noted that Option 1 is more likely to encourage investments in long term decarbonisation solutions, as operators of CHP plants would not be able to rely on free allowances and would be incentivised to explore other low carbon options.

Thirty-two respondents provided their views on question 28 with most suggesting that demonstrating this would be fairly straightforward. Several respondents suggested that the CHPQA scheme is set up to verify this, and relevant information is already provided. Several respondents noted that the verification process could be expanded and additional information be provided to Regulators.

## **The Authority Response**

The Authority has decided to effect a change to the electricity generator classification to exclude installations that have produced electricity for sale, if that electricity was produced by means of a CHPQA-certified plant, operating as part of an operator's industrial activity. This will mean that operators who have invested in on-site CHPQA-certified plants for their industrial activity, and export excess electricity to the grid, will not have their whole installation classified as an electricity generator. This will provide further encouragement for operators to achieve improved efficiency by achieving CHPQA certification and is consistent with UK Government support of good-quality CHP.

The proposal will only apply to CHPs associated with an industrial activity, e.g. that produce electricity for consumption at the installation, and not to CHPs that operate independently to generate and export power. Under current rules, CHP installations can receive free allowances under the heat benchmark for heat exported to non-ETS installations, and for heat consumed at the installation when it is not used to produce electricity. Operators with CHPs do not receive free allowances for electricity generation. As such, this change should not lead to competitive distortions in the power market.

The Authority has decided not to include a cap on electricity exports as a condition to this exclusion. This is because including a cap would likely lead to perverse incentives for operators to not export electricity to the grid, despite there being a need for it, simply to avoid breaching the cap. Furthermore, as stated previously, CHPs do not receive free allowances for their electricity generation and therefore this proposal should not lead to competitive distortions in the power market.

This proposal will only be applied for the next allocation period (2026-2030) and will not be applied for the current allocation period (2021-2025). This is because the electricity generator classification for the current allocation period was already determined by the Authority as per current legislation. As noted under proposal 5, the Authority has a strong preference for changes to free allocation policy to be forward-looking to provide certainty to UK ETS participants, and exceptions to this should only be made in certain exceptional circumstances.

## Proposal: Amendments to Benchmarks and the Carbon Leakage List

Question
<b>11) Are there changes which you have not already flagged to us as part of your Call for Evidence response which you believe should be implemented sooner than the above timetables? (Y/N) Please explain your answer.</b>

### Summary of Responses

Twenty-nine respondents answered this question, which sought views on whether changes to specific benchmarks or applications of the carbon leakage list should be implemented prior to the next allocation period. Thirteen respondents (45%) suggested making early changes to a total of seven specific benchmarks or applications of the carbon leakage list (CLL).

Seventeen respondents (59%) raised points relating to the timing and broader aims of changes to free allocation methodology. Of these, nine respondents (31%) requested decisions on all changes to be made as early as possible in order to give industry time and certainty to plan. Six respondents (21%) urged that any changes to free allocation should be coordinated with other carbon leakage mitigation measures, such as a carbon border adjustment mechanism (CBAM). Five respondents (17%) noted that historical rates of abatement may not be sustainable for some sectors, or for certain products, and that any changes should account for that fact. One respondent (3%) was concerned that free allocation should be distributed more equally between sectors, and one respondent wanted to see free allocation phased out as soon as possible.

## The Authority Response

In the Developing the UK ETS consultation, the Authority stated that if it found there to be specific issues with benchmarks or applications of the carbon leakage list which were unattainable for industry in a UK context, areas of the policy which are causing unintended perverse incentives, or unequal treatment of participants outside of the current policy intent, then the Authority would aim to implement changes to mitigate these issues as soon as is practicably possible following the second consultation point and no later than 1 January 2024.

After considering the specific issues raised in response to the consultation, along with others raised during the 2021 free allocation review Call for Evidence<sup>25</sup>, the Authority has decided to effect temporary changes to the lime benchmark and to the carbon leakage classification of malt extract production for the 2024 and 2025 scheme years. This decision is based on substantive and evidenced claims from these sectors. These temporary changes will be implemented by 1 January 2024 and will affect free allowances distributed in the 2024 and 2025 scheme years only (e.g. free allowances that will be distributed on/by 28 February 2024 and 28 February 2025).

For temporary changes in relation to benchmarks, the Authority considered whether:

- There was a substantive and evidenced claim that the benchmark was unattainable, due to the benchmark value reflecting technologies, production processes, fuels or other efficiencies not available in the UK.
- There was a substantive and evidenced claim that the issue resulted in the unequal treatment of UK ETS participants.
- There was a substantive and evidenced claim that the issue caused perverse incentives, contradicting the policy intent of the UK ETS, free allocation and/or benchmarks.
- The issue was sector specific, e.g. not relating to heat, fuel, or process emissions fallback benchmarks, as any change to these would impact a large number of operators and could not be implemented in the current allocation period.

For temporary changes in relation to the carbon leakage list, the Authority considered whether:

- There was a substantive and evidenced claim that the issue resulted in the unequal treatment of participants.
- There was a substantive and evidenced claim that the issue caused perverse incentives, contradicting the current policy intent of the UK ETS, free allocation and/or the carbon leakage list.

The Authority considers a claim to be substantive and evidenced if it includes a rational qualitative argument which is supported by objective and verifiable data. This could for example include data and calculations demonstrating that an activity meets the carbon leakage

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<sup>25</sup> <https://www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review-call-for-evidence>

indicator threshold. This would not include a purely qualitative argument with no supporting evidence provided to the Authority.

In the case of the lime benchmark, the Authority deemed that there was a substantive and evidenced claim that the benchmark was unattainable due to the benchmark value reflecting the use of specific efficiencies not available in the UK. Stakeholders put forward a substantive claim that the benchmark was distorted by a number of operators with access to biomass, which is not a widely available fuel in the UK. Consequently, we are temporarily increasing the benchmark value by 10%. Whilst several options for the temporary increase to the benchmark were considered, the chosen value was determined to be appropriate in light of the evidence presented, without over-allocating allowances to relevant installations. This would represent a small increase to free allocation from a scheme-level perspective, whilst being impactful for the operators themselves.

In the case of the carbon leakage status of malt extract production, the Authority deemed that there was a substantive and evidenced claim that the activity meets the carbon leakage indicator threshold. A stakeholder put forward a substantive claim that the trade intensity data for malt production should be used for malt extract production, which would result in the activity meeting the carbon leakage indicator threshold. Consequently, we are temporarily setting the activity to carbon leakage exposed.

The Authority decided not to effect temporary changes for other specific issues with benchmarks or applications of the carbon leakage list that were raised by stakeholders, with the main reasons being a lack of evidence or not meeting other criteria considered by the Authority listed above.

The decisions that have been taken to effect temporary changes in 2024 and 2025, and the methodology used, do not pre-empt broader changes to the methodology for distributing free allowances which will be implemented for the next allocation period (see responses to questions 7-10). These temporary changes will therefore be re-assessed by the Authority ahead of the next allocation period as part of the next stage of the Free Allocation Review. Issues that were considered, but for which no temporary change has been made, will also be considered as part of that future process.

The majority of respondents to question 11 raised or reiterated points relating to the timing and broader aims of changes to free allocation methodology, particularly around timelines for decisions and coordination with other carbon leakage mitigation measures. These points are addressed above in the Authority's responses to questions 7-10 and to question 12<sup>26</sup>.

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<sup>26</sup> See pp.32-36.

## Proposal: Electricity generators<sup>27</sup>

### Summary of Proposal

We highlighted that under current legislation, electricity generators who have not exported measurable heat for the purpose of district heating in the “relevant period”, but intend to do so in future scheme years, are eligible for free allocation once this has been demonstrated. However, electricity generators who cannot demonstrate that they have produced measurable heat by means of high-efficiency cogeneration over the “relevant period” are not eligible for free allocation and there is no way for them to receive free allowances during an allocation period if they can subsequently demonstrate that they meet the eligibility criteria set out in Article 2a of the Free Allocation Regulation (FAR).

We sought views from respondents on whether electricity generators who have not exported measurable heat produced by means of high-efficiency cogeneration in the “relevant period”, but start to do so in following scheme years, should be eligible for free allocation once they can demonstrate that they meet the eligibility criteria.

#### Questions

**174) Should electricity generators who have not exported measurable heat produced by means of high-efficiency cogeneration in the “relevant period”, but start to do so in following scheme years, be eligible for free allocation once they can demonstrate that they meet the eligibility criteria? (Y/N) Please explain your answer.**

**175) Over which period should the determination of whether the measurable heat is produced by means of high-efficiency cogeneration be assessed?**

### Summary of Responses

Of 17 responses to question 174, 13 respondents (76%) agreed. Themes from these responses included that industrial sites that have invested in CHP have done so to provide energy to their installation in the most efficient way and that they should be provided the same levels of free allowances than comparable sites. One respondent (6%) noted that this would be consistent with the policy intent of allocating free allowances to good quality CHP.

One respondent (6%) disagreed without further comment.

Nine respondents (56%) provided their views on question 175. Respondents suggested that the determination of whether the measurable heat is produced by means of high-efficiency cogeneration should be assessed either over a two year period, in the previous year where this could be demonstrated, or over a quarter.

<sup>27</sup>This proposal was initially included in Chapter 9 of the consultation. We have now included it in Chapter 2 given it relates to free allocation policy.

## The Authority Response

The Authority has decided to effect a change to legislation to allow electricity generators who have not exported measurable heat produced by means of high-efficiency cogeneration in the “relevant period”, but start to do so in following scheme years, to be eligible for free allowances once they can demonstrate that they meet the high-efficiency cogeneration eligibility criteria set out in Article 2a of the FAR.

The determination of whether the measurable heat is produced by means of high-efficiency cogeneration will be assessed over the most recent two year period, and relevant data will need to be submitted to Regulators through Activity Level Reports, as part of the ALC process.

# Chapter 3: A Call for Evidence on Future Markets Policy

This chapter covers our responses to the Call for Evidence set out in Chapter 4 of the consultation.

This is the first stage of a two-stage approach to developing proposals on future UK ETS markets policy. Following this Call for Evidence, we aim to consult on detailed policy proposals. Our policy development in the coming months will consider the future of market stability mechanisms, including the Auction Reserve Price (ARP), the Cost Containment Mechanism (CCM) and examining the potential merits of a supply adjustment mechanism, as well as broader market functioning.

## Summary of Call for Evidence

Within the Developing the UK ETS consultation, Chapter 4 called for evidence on potential drivers of evolving market conditions, objectives for market stability policy as the UK ETS evolves and evaluation of existing market mechanisms. The responses provided significant data and considerations for the Authority to review as part of the approach to develop proposals on future UK ETS markets policy.

## Market abuse and destabilising behaviour

Question
<b>33) Are there features of ETS markets that put them at greater risk of market abuse than other financial markets? (Y/N) If so, what features and why?</b>

## Summary of Responses

Of the 51 responses to question 33, 33 respondents (65%) noted there are features of ETS markets that puts them at greater risk of a market abuse than other financial markets. Thirteen respondents (25%) disagreed, whilst five respondents (10%) did not answer the question.

Liquidity was a key theme, with 16 respondents (31%) concerned that the UK ETS suffers with illiquidity as it is smaller than other international markets. Fourteen respondents (27%) also highlighted concerns that participants did not need to buy many allowances to drive up the overall carbon price. Six respondents (12%) expressed difficulty in buying allowances due to limited availability and believe this problem could worsen as the cap continues to reduce. However, some respondents provided more positive views on liquidity. One respondent (2%) stated the proposals within Chapter 4 on Future Markets Policy should provide more liquidity,

whilst two respondents (4%) advised that the UK ETS should link with the EU ETS to combat liquidity and market size issues.

Fifteen respondents (29%) stated that they believed the UK ETS is more prone to the impact of non-compliance investors as speculation from these entities may lead to inflated allowance prices for compliance entities. One respondent (2%) made a positive comment on speculation, stating there is no evidence of it being a driver of ETS prices. Seven respondents (14%) also expressed the concern that non-compliance entities may be utilising the UK ETS to purchase allowances for financial gain without contributing towards decarbonisation. In considering these responses, the Authority notes that speculative trading does not constitute market abuse.

Some responses stated that the application of market abuse rules provided significant comfort to participants and contain the necessary safeguards to detect and prevent market abuse.

## Evolution of the UK ETS in the coming years

### Questions

**Q34) Are there other drivers of evolving market conditions that future UK ETS markets policy should take into account? (Y/N) If so, what are they? What evidence do you have to support your view?**

**Q35) What impacts do you envisage that these drivers could have in the UK ETS in the coming years, particularly in relation to market stability and integrity? What evidence do you have to support your view?**

### Summary of Responses

Of the 46 responses to question 34, 39 respondents (85%) stated there are other drivers of evolving market conditions that future UK ETS markets policy should consider, while five respondents (11%) disagreed.

The EU ETS was a key theme, with respondents stating their view that it was important for the UK and EU ETS to remain similar in terms of market design and scope. Respondents expressed concerns that recent UK and EU consultations indicated that the two schemes may diverge. Multiple respondents noted that UK ETS allowances (UKAs) have often traded at a premium to EU ETS allowances (EUAs) and stated that any further divergence on price could lead to British businesses being disadvantaged. These respondents also expressed concern that significant price differences could hamper the possibility of linking the EU and UK ETS in the future. Respondents provided opinions on how to prevent the two schemes from diverging, with two respondents suggesting open and regular dialogue with European officials to align on market designs and introducing mechanisms such as supply adjustment mechanisms as seen in the EU ETS. Furthermore, 14 respondents (30%) raised the possibility of linking the UK and

EU ETS, arguing it could increase liquidity, stabilise the carbon price and reduce carbon leakage.

Within the 31 responses to question 35, respondents stated their view that potential inclusion of new sectors within the UK ETS, combined with a declining cap, could contribute towards a rising carbon price. Alternatively, multiple respondents noted that inclusion of new markets, such as GGRs, could aid market liquidity and stability due to a greater number of UK ETS participants.

### International Linking:

The UK's Net Zero Strategy, published in October 2021, reiterated the important role carbon pricing will play as a tool to help fulfil our ambitious climate goals. The Authority recognises that carbon pricing is most effective when it is deployed widely and across borders. In addition to developing an ambitious carbon pricing system domestically, we are keen to cooperate with other countries on carbon pricing measures to support increased ambition globally.

As set out in the UK Government's Energy White Paper and in the Authority's consultation on Developing the UK Emissions Trading Scheme, we remain open to the possibility of linking the UK ETS with other ETSs internationally. Under the Trade and Cooperation Agreement (TCA) the UK and EU agreed to cooperate on carbon pricing, including through giving serious consideration to linking our respective carbon pricing schemes.

Cooperation and dialogue on carbon pricing, including by considering linking, will continue to be important as the UK Government, Scottish Government, Welsh Government, and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland strive to reach ambitious climate targets. We are keen to increase multilateral cooperation on carbon pricing, which may include exchange of information, sharing best practice, promoting integrity of systems, or through more practical forms of cooperation, such as linking ETSs.

## Objectives for markets policy as the UK ETS matures

### Questions

**Q36) Do you agree that these are the right objectives for markets policy as the UK ETS matures? (Y/N) Please explain your answer.**

### Summary of Responses

Of the 40 responses to question 36, 33 respondents (83%) believed that the five objectives were right. For reference, the objectives are:

- Provide long-term reassurance to participants with a rules-based approach to any Authority intervention

- Design any market stability policies to reduce the ability of any entity to ‘game’ the policy
- Counter excessive unexpected and destabilising upward and downward price and/or demand shocks in the market as appropriate
- Support price discovery and liquidity in UK ETS markets
- Guard against market abuse and activity that could significantly destabilise UK ETS markets

Twelve respondents (30%) stated that the objectives would provide long-term reassurance to the market, helping to stimulate investment, stabilise the carbon price and counter the possibility of market shocks. Despite agreeing with the objectives, respondents noted issues and suggestions for improvements in their responses. Seven respondents (18%) noted the objectives may translate into inaction by the Authority, with responses citing the inaction following two previous CCM triggers.

Six respondents (15%) disagreed, with one respondent advocating for the use of a price floor as it could signal a long-term minimum price trajectory for the market. Three respondents (8%) noted the lack of explicit objectives regarding the UK ETS contributing towards supporting investment and deployment of low carbon technologies.

## Summary of existing markets policy in the UK ETS

### Auction Reserve Price (ARP)

#### Questions

**Q37) On what timescale should we look to withdraw the ARP: as soon as possible; as part of the introduction of a potential wider markets policies package; alongside the introduction of the net zero consistent cap; or another timescale? If another timescale, what timescale? Why that timescale?**

**Q38) Should the ARP be replaced by another mechanism? (Y/N) If so, what type of mechanism should replace it and why?**

### Summary of Responses

Of the 47 responses to question 37, 33 respondents (70%) stated the ARP should be withdrawn:

- Twenty-two out of those 33 respondents (67%) want the ARP removed as soon as possible;
- Six respondents (18%) did not provide a timescale;
- Four respondents (12%) want the ARP removed alongside the introduction of a potential wider markets policies package; and

- One respondent (3%) wants the ARP removed alongside the introduction of a wider markets policies package and the net zero consistent cap.

For those in favour of withdrawal, a key theme was redundancy of the ARP. Most responses noted that the current UK ETS carbon price is considerably higher than the ARP (£22) and stated their view that the price of a UK allowance is unlikely to be close to the ARP again. One respondent (2%) said that they believed the ARP should be replaced by a supply adjustment mechanism to manage surplus and shortfall of allowances. Ten respondents (21%) opposed withdrawing the ARP. Several respondents stated that the ARP should rise in conjunction with anticipated carbon price increases, particularly as the ARP was introduced prior to the UK ETS' alignment with net zero goals. Additionally, several respondents favoured retention of a price floor to provide certainty to the market. Two respondents (4%) stated that the ARP can be used to mitigate against extreme price troughs.

Of the 59 responses to question 38, 38 respondents (64%) believed the ARP should not be replaced by another mechanism. Several respondents were in favour of retaining the ARP as it is a mechanism that is easy to understand and provides market stability. Multiple respondents called for the Authority to consider mechanisms that will reduce price volatility and carbon leakage instead of focusing on low price measures.

Fourteen respondents (24%) wanted the ARP replaced, with several respondents advocating for the introduction of a supply adjustment mechanism. Respondents also noted the UK ETS could learn from the EU ETS as they have introduced a Market Stability Reserve (MSR) to aid market stability. Additionally, two respondents (3%) stated the ARP should be replaced by a continuing price floor in the form of a new reserve price mechanism or a top-up tax, in-turn providing more certainty to investors and safeguarding Government auction revenue.

## Cost Containment Mechanism

### Questions

**Q39) Do the thresholds for triggering the CCM remain fit for purpose? (Y/N) If not, how should they be amended?**

**Q40) Do the intervention options available to the Authority remain fit for purpose? (Y/N) If not, how should they be amended?**

**Q41) Following the triggering of the CCM in December and January, are there elements of the CCM process or design that could be improved? (Y/N) If so, what are they and how can they be improved?**

## Summary of Responses

Of the 48 responses to question 39, 10 respondents (21%) believe the thresholds for triggering the CCM remain fit for purpose. Two respondents (4%) stated that the CCM being triggered twice within the UK ETS showed that the mechanism works. Furthermore, several respondents noted the importance of the CCM as a protection mechanism in response to periods of significant price volatility.

In response to question 39, 35 respondents (73%) stated the thresholds for triggering the CCM are not fit for purpose. Relative thresholds were mentioned by several respondents, arguing that higher carbon prices make it increasingly unlikely the CCM will get triggered in the future. To support this view, respondents noted that a carbon price more than £200 may not trigger the CCM in future years. Some respondents argued that the Authority's discretion makes the CCM less effective, stating their preference for automatic, defined actions in response to a CCM trigger. Multiple respondents questioned the effectiveness of the CCM thresholds, noting the Authority decision to take no action following CCM triggers in December 2021 and January 2022. Seventeen respondents (49%) noted that CCM thresholds fail to account for carbon price disparity between the UK ETS and other jurisdictions, particularly the EU ETS.

Of the 40 responses to question 40, 23 respondents (58%) believed the intervention options available to the Authority remain fit for purpose, whilst 16 respondents (40%) disagreed. Respondents in both groups called for automatic intervention by releasing an agreed number of allowances with no Authority discretion, as outlined in question 39. Multiple respondents called for greater clarity and communication from the Authority before any action is taken as a lack of transparency could create uncertainty within the market.

Of the 51 responses to question 41, 47 respondents (92%) stated there are elements of the CCM process or design that could be improved. Several key themes emerged from responses, including the previously discussed themes such as Authority discretion, automatic interventions and including UK and EU ETS carbon price differences as part of the thresholds. Additionally, 18 respondents (35%) asked for greater transparency in Authority decision making, arguing that previous triggers of the CCM resulted in uncertainty. Multiple respondents noted that a clear steer from the Authority about the intended course of action would provide greater clarity on the circumstances in which the Authority would act. Timing was a prevalent theme, with respondents arguing that the time taken to reach decisions by the Authority was too long.

Four respondents (8%) stated no improvements could be made to the CCM process or design, with two respondents agreeing with the Authority's decision to take no further action following previous triggers.

## Auction process

### Questions

**42) Does the current auction process remain fit for purpose? (Y/N) If not, how should it be amended?**

**43) Are there other measures that the Authority should consider to further support liquidity in the UK ETS? (Y/N) If so, what are they?**

## Summary of Responses

Of the 34 responses to question 42, 15 respondents (44%) believe the current auction process remains fit for purpose. However, this group of respondents still provided some suggestions to improve the auction process. Respondents argued that there was a lack of transparency regarding the auction clearing price methodology. Several respondents suggested that the

auction participation process could be improved by making it easier for participants to access auctions. One respondent (3%) stated the auction provides essential and additional liquidity to the secondary market.

Fourteen respondents (41%), disagreed, whilst four respondents (15%) did not provide an answer. Three respondents (9%) called for more frequent auctions, moving them from a bi-weekly to weekly occurrence. These responses noted that liquidity and trading volume rise in the secondary market on days surrounding the auction. Three respondents (9%) expressed concern about financial intermediaries in auctions reducing the supply of allowances available to compliance entities.

Of the 40 responses to question 43, 34 respondents (85%) believe there are other measures the Authority should consider to further support liquidity in the UK ETS, while only four respondents (10%) disagreed.

As mentioned previously, many respondents argued that linking the UK and EU ETS would improve market liquidity and stability. Additionally, six respondents (15%) advocated for increased regulation and measures against those who only buy to hold onto allowances as they felt these participants reduce UK ETS liquidity.

### Market stability mechanism account

Question
<b>44) Should the Authority consider stocking the market stability mechanism account with allowances? (Y/N) Please expand on your answer and if Y, provide views on how the account should be stocked.</b>

### Summary of Responses

Of the 37 responses to question 44, 17 respondents (46%) believe the Authority should consider stocking the market stability mechanism (MSM) account with allowances. Four respondents advocated for unallocated allowances in an MSM account to be automatically released into the market when the CCM is triggered. However, some respondents disagreed, stating the MSM account should act as one of many options, including allowance release from auction pots from the same year or future years, or from the new entrants' reserve. Four respondents expressed the importance of setting the cap at a level that will mitigate carbon leakage and protect free allocations to industry, enabling unallocated allowances to be fully stocked into an MSM account.

Twelve respondents (32%) disagreed, whilst eight respondents (22%) did not provide an answer. Respondents expressed concerns that stocked allowances might not get used as the CCM is rarely triggered, and when it has been triggered, no action was taken. Three respondents (8%) stated they would prefer allowances to be available via auctions to help with liquidity and price stability. One respondent (3%) provided alternative options, stating the new entrants' reserve or future auction pots should be the only sources of further allowances. Finally, two respondents (5%) favoured the introduction of a supply adjustment mechanism stocked with unallocated and surplus allowances.

## Banking and borrowing of allowances

### Question

**45) Does the current banking and borrowing policy remain fit for purpose? (Y/N) If not, how should it be amended?**

### Summary of Responses

Of the 46 responses to question 45, 27 (59%) respondents believe the current banking and borrowing policy remains fit for purpose. Seven respondents (15%) stated that these policies provide flexibility for participants to meet compliance obligations and helps with smoothing out short-term price fluctuations.

Seven respondents (15%) disagreed, whilst 12 respondents (26%) did not provide an answer. Multiple respondents requested the Authority to affirm that allowances from the current phase of the UK ETS will remain valid for future phases, including beyond 2030.

## The Authority Response

We would like to thank all stakeholders for providing their views through this Call for Evidence. The Authority recognises the important issues raised, including their interactions with other chapters of this consultation. The views provided in this Call for Evidence will help inform the development of proposals for any changes to future markets policy to ensure they remain fit for purpose as part of a net zero consistent UK ETS.

The Call for Evidence was the first stage of a two-stage approach to develop proposals on future UK ETS markets policy. Following the Call for Evidence we are currently reviewing future markets policy and aim to consult on detailed policy proposals in due course. As outlined in the Call for Evidence, we are considering future markets policy holistically. Our policy development in the coming months will therefore consider the future of market stability mechanisms, including the ARP, the CCM and examining the potential merits of a supply adjustment mechanism, as well as broader market functioning. In stating our intent to explore these policy areas, we note that any changes proposed in a future consultation will depend on our assessment of policy options during policy development.

## Chapter 4: Aviation

This chapter covers proposals set out in Chapter 5 of the consultation.

The Authority has decided to phase-out aviation free allocation by 2026.

In order to ensure that aircraft operators are able to prepare for the transition, the aviation free allocation entitlement will continue to reduce at the existing fixed amount of 2.2% annually in 2024 and 2025 until full auctioning in 2026.

The Authority has decided not to update the aviation free allocation methodology and not to account for new entrants in light of the decision to phase-out aviation free allocation by 2026.

The Authority has decided to implement a cap on the maximum amount of free allocation aircraft operators are eligible to receive during the phase-out period. From the 2024 scheme year, aircraft operator's entitlement will be capped to 100% of their verified emissions.

We will continue to develop proposals on how sustainable aviation fuel (SAF) is treated in the UK ETS and consider whether and how non-CO<sub>2</sub> impacts should be brought within the scope of the UK ETS and will consult further in due course.

The Authority is continuing to support the cost-effective decarbonisation of aviation to achieve net zero by 2050. In July 2022, the UK Government published the Jet Zero Strategy<sup>28</sup> which focuses on the rapid development of technologies in a way that maintains the benefits of air travel, whilst maximising the opportunities that decarbonisation brings. The Scottish Government is also committed to reducing aviation emissions, in line with its legal commitment to achieve net zero by 2045. By providing the right policy framework, the UK ETS will continue to be a vital component of the aviation sector's pathway to net zero.

Since the launch of the UK ETS in 2021, the Authority committed to review the scheme's treatment of aviation to ensure that the UK ETS continues to develop in a way that supports our net zero ambition in the most cost-effective way.

The Developing the UK ETS Consultation included several UK ETS aviation policy elements and sought views on aviation free allocation policy, sustainable aviation fuels (SAF), aviation's non-CO<sub>2</sub> climate impacts, inclusion of flights from the UK to Switzerland, international cooperation, and virtual site visits.

In August 2022, the Authority published an initial government response covering proposals to be implemented by 2023<sup>29</sup>. For aviation, this covered the inclusion of flights from the UK to

<sup>28</sup> [https://www.gov.uk/government/publications/jet-zero-strategy-delivering-netzero-aviation-by-2050](https://www.gov.uk/government/publications/jet-zero-strategy-delivering-net-zero-aviation-by-2050)

<sup>29</sup> <https://www.gov.uk/government/consultations/developing-the-uk-emissions-trading-scheme-uk-ets>

Switzerland in the UK ETS (questions 67-69)<sup>30</sup>, the permission of virtual site visits for aviation verifiers (question 73) and changes to ensure that the sustainability criteria for SAF claimed remains workable in the short-term (question 61). These proposals have been implemented with legislation in force from 1 January 2023.

This chapter summarises responses to questions on aviation free allocation, SAF, non-CO<sub>2</sub> climate impacts and international cooperation and sets out the Authority's position on each in turn.

## Free Allocation Trajectory

### Summary of Proposal

In June 2020, the Authority committed to reviewing the UK's approach to free allocation issued to aircraft operators<sup>31</sup>. As part of the review, the UK Government's Department for Transport and the Department for Business, Energy and Industrial Strategy jointly commissioned an external economic research study on the impact of carbon pricing on the UK aviation sector<sup>32</sup>. The study found that there is a minimal risk of carbon leakage to the aviation sector under the current scope of the UK ETS. Accordingly, the Authority proposed to phase-out free allocation for the aviation sector.

In the Developing the UK ETS Consultation, the Authority set out three trajectories by which the aviation sector would be subject to full auctioning:

- Early phase-out: the rate of free allocation will reduce so that full auctioning will apply from 2026;
- Intermediate phase-out: the rate of free allocation will reduce so that full auctioning will apply no later than 2028;
- Later phase-out: the rate of free allocation will reduce so that full auctioning will apply from the start of 2031.

Questions
<b>46) Do you agree with the conclusion of the study that risk of carbon leakage is minimal for the UK aviation sector under the current UK ETS scope? (Y/N) Please expand on your answer and give evidence where possible.</b>
<b>47) Do you have any additional views on the economic research study and its conclusions? (Y/N) Please expand on your answer and give evidence where possible.</b>

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<sup>30</sup> Question 70 in the section on UK to Switzerland flights was not covered as part of the initial government response and will be responded to here alongside questions on international cooperation.

<sup>31</sup> <https://www.gov.uk/government/consultations/the-future-of-uk-carbon-pricing>

<sup>32</sup> <https://www.gov.uk/government/publications/impacts-of-carbon-pricing-on-the-uk-aviation-sector>

## Summary of Responses

There were 23 responses to question 46 of which 17 (74%) agreed with the conclusion of the study that the risk of carbon leakage is minimal for the UK aviation sector under the current scope of the UK ETS, four (17%) disagreed, and two (9%) did not directly respond to the question. There were 16 responses to question 47 providing additional views on the economic research study and its conclusions.

Respondents that agreed with the conclusion of the research study highlighted that, since aviation involves a journey from one location to another, the risk of carbon leakage has always been lower for aviation than for other sectors. Three respondents (13%) noted other studies that found similar conclusions. Six respondents (26%) emphasised that the conclusion of the study is accurate given the close alignment between the UK ETS and the EU ETS, including both schemes proposing to phase-out free allocation. Three respondents agreed with the research study but argued that the risk of carbon leakage would increase if the UK ETS moved away from alignment with the EU ETS. Five respondents (22%) noted the interactions between carbon leakage and the scope of the UK ETS. Of those, four (17%) highlighted that the risk of carbon leakage would be mitigated if the UK ETS was expanded to all UK departing flights. One respondent added that the impacts of the UK ETS are predominantly felt by regional carriers whilst a higher proportion of sectoral emissions fall outside the scope of the ETS.

Four respondents (17%), that did not agree with the conclusions of the study, submitted quantitative evidence arguing that there are carbon leakage risks under the current scope of the UK ETS primarily due to passengers switching to other destinations or modes of transport outside of UK ETS scope. A respondent also submitted further qualitative evidence on risk of modal switching to other carbon intensive forms of transport. Some of these respondents supported expanding the UK ETS to all departing flights.

Questions
<b>48) Do you agree that if there are minimal risks of carbon leakage and competitiveness risks associated with carbon leakage from the UK ETS for the aviation sector, free allocation should be withdrawn or phased-out? (Y/N) Please expand on your answer and give evidence where possible.</b>
<b>49) Are there any other reasons for maintaining free allocation in the UK ETS? (Y/N) Please expand on your answer and give evidence where possible.</b>

## Summary of Responses

There were 30 responses to question 48, of which 18 (60%) agreed that if there are minimal risks of carbon leakage for the aviation sector, free allocation should be withdrawn or phased-out, five (17%) disagreed, and seven (23%) did not directly respond to the question.

There were 22 responses to question 49, of which 11 (50%) suggested that there are other reasons for maintaining free allocation in the UK ETS, and 11 (50%) disagreed.

Of those that agreed that aviation free allocation should be withdrawn, 10 respondents (33%) argued this would support the UK's decarbonisation objectives and uphold the polluter pays principle. Respondents noted that free allocation is inconsistent with a net zero trajectory, it could undermine the price signal and it would create a market distortion if the EU were to remove free allocation. Three respondents (14%) stressed that the purpose of free allocation is for carbon leakage mitigation and should be withdrawn given that there is minimal evidence of a carbon leakage risk.

Of those that disagreed that aviation free allocation should be withdrawn, three respondents (14%) argued that carbon leakage risk is not minimal for the sector, citing similar concerns about destination switching covered in earlier responses.

Of those that suggested that there are other reasons for maintaining free allocation, five (23%) cited the need for other viable abatement options and three (14%) referenced the financial impacts of COVID-19. Three respondents (14%) argued that if aviation free allocation is to be phased-out, it should be auctioned to support market liquidity. Finally, four respondents (19%) argued that free allocation should be used to support regional connectivity and other policies.

#### Questions

**50) Please provide views on the three proposed options for aviation free allocation, as well as how the trajectory should be set, such as a linear or weighted approach?**

### Summary of Responses

There were 22 responses to question 50, of which seven (32%) supported an early phase-out of aviation free allocation by 2026 on the basis that it was the most ambitious of the options proposed and that it would alleviate the competitive distortions associated with the policy. Three respondents argued that an early phase-out would accelerate decarbonisation within the aviation sector while another two questioned why an immediate removal in 2024 was not considered. Of those that favoured a 2026 phase-out, two respondents stated a preference for a linear reduction of free allocation.

Two respondents (9%) supported an intermediate phase-out of free allocation by 2028 on the basis that it would retain ambition whilst providing a fair adjustment period for aircraft operators.

Eight respondents (36%) supported a later phase-out of free allocation by 2031 on the basis that it would minimise carbon leakage and competitiveness risks attributed to the current scope of the UK ETS and that it would allow for technologies like SAF to scale up. Of those that

favoured a 2031 phase-out, three respondents (14%) stated a preference for a weighted reduction of free allocation.

Five respondents (23%) did not indicate a preference for the options proposed. Of those, two respondents argued the UK ETS should be applied to all departing flights.

Questions
<b>51) Should the Authority consider free allocation trajectory options that could maintain aviation free allocation entitlement past the first phase of the UK ETS (2021-2030)?</b>
<b>57) Are there ways we could mitigate any unintended impacts on regional connectivity that may arise due to changes to aviation free allocation, through the UK ETS or by other means? (Y/N) Please explain your answer and provide evidence where possible.</b>

## Summary of Responses

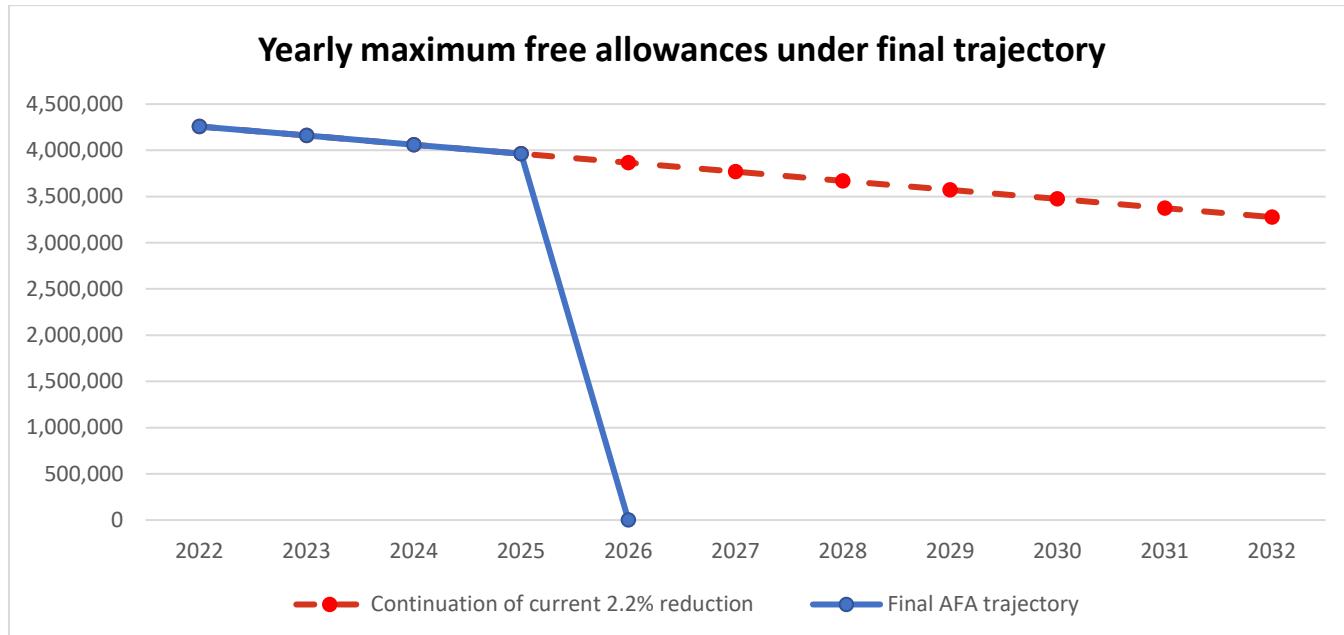
There were 21 responses to question 51, of which 14 (67%) opposed maintaining aviation free allocation past the first phase of the UK ETS (2021-2030). Of those, five (24%) argued that there is no justification for maintaining the policy given the minimal risk of carbon leakage. One respondent argued that subjecting the sector to full auctioning will incentivise aircraft operators to adhere to the polluter pays principle. Alignment with the EU ETS was also favoured, two respondents called for the UK ETS to be as ambitious as the EU ETS.

Seven respondents (33%) favoured maintaining free allocation past the first phase of the UK ETS (2021-2030). Respondents argued that aviation is a hard to abate sector and that changes to aviation free allocation should be aligned with the availability and affordability of decarbonisation technology. Three respondents (14%) called for the hypothecation of UK ETS revenue to support decarbonisation innovation.

There were 15 responses to question 57, of which four respondents (27%) stated regional connectivity is best supported through other policy measures or subsidies outside of the UK ETS. Of those that supported maintaining regional connectivity through other policies, one argued that regional connectivity is not an objective of the UK ETS. Two respondents (13%) highlighted Air Passenger Duty as an example of alternative policy that has been used in the past to support regional connectivity. Two respondents (13%) argued regional connectivity could be maintained by supporting other transport modes, such as rail and bus networks. Five respondents (33%) identified free allocation as a policy tool that could be used to support regional connectivity.

## The Authority Response

The Authority has decided to phase-out free allocation for the aviation sector by 2026.



**Figure 6: Final aviation free allocation trajectory and continuation of current 2.2% reduction**

The Authority recognises that the majority of respondents agreed with the findings of the independent research study that there is a minimal risk of carbon leakage for the aviation sector under the current scope of the UK ETS. The Authority also recognises responses that raised that free allocation should be maintained for other reasons such as supporting decarbonisation within the sector; having considered the conclusion from the independent economic research that free allocation does not influence aircraft operators' marginal abatement decisions, the Authority has decided not to maintain free allocation for reasons other than carbon leakage mitigation. Wider decarbonisation issues can be addressed through other more targeted policy levers such as direct investment in new technology.

We consider that it would be disproportionate to maintain aviation free allocation policy to mitigate the risk of carbon leakage where that risk is found to be minimal. We would like to thank all respondents that provided further evidence. While recognising that some respondents did not agree with the findings of the independent research study, we maintain the conclusion that, under the current scope of the UK ETS, the carbon leakage risk for the aviation sector remains minimal. Although there is a very small positive carbon leakage risk associated with destination and mode switching, it is outweighed by the substantial evidence of negative carbon leakage from, for example, reduced demand on round trips<sup>33</sup>. In addition, there is no evidence to suggest that maintaining aviation free allocation would limit the claimed impacts of these risks.

<sup>33</sup> Positive leakage occurs when a mechanism that decreases emissions within the policy area induces an increase in emissions outside the policy area. Negative leakage occurs when a mechanism that decreases emissions within the policy area induces a decrease in emissions outside the policy area. (p. 27 <https://www.frontier-economics.com/media/5109/economic-research-on-the-impacts-of-carbon-pricing-on-the-uk-aviation-sector.pdf>).

The current aviation free allocation methodology introduces a competitive distortion in the market by allocating free allocation to some airlines (based on old historic 2010 tonne-kilometre (TKM) data) compared to their rivals or new entrants who are ineligible. The earlier the phase-out, the earlier this competitive distortion is removed. The functioning of the UK ETS market will be maintained by removing a market distortion where a carbon leakage risk is minimal and ensuring that auctioning is the primary means of allowances reaching the market.

However, supporting an effective UK ETS market needs to be adequately balanced with supporting industry to adjust to aviation free allocation phase-out. We recognise the impacts of COVID-19 on the aviation sector and the expected increase in operating costs associated with the withdrawal of free allocation. We realise that for these reasons some respondents would have preferred a later phase-out or a weighted reduction in free allocation. We also recognise responses that indicated a preference for an immediate removal of free allocation by 2024 in light of evidence on carbon leakage risk for the sector. One of the core principles of the UK ETS is to provide certainty to market participants by ensuring changes are announced in advance to allow for adequate business planning.

We are therefore proposing a balanced transition to full auctioning by 2026 whereby aircraft operators will receive their existing aviation free allocation entitlement for the 2024 and 2025 scheme years as set out in the aviation allocation table. This means that aviation free allocation entitlement will reduce at a 2.2% annual reduction as currently legislated for until a full phase-out in 2026. A weighted reduction of aviation free allocation will ensure a smooth transition by giving aircraft operators time to prepare for full auctioning in 2026. Annex 4 of the impact assessment to the consultation explains the breadth of the analysis and considerations used to reach this decision.

The UK ETS Authority recognises that the withdrawal of aviation free allocation may introduce a downside pressure on the finances of the UK domestic aviation sector. In some cases, there is a possibility that this pressure may lead certain operators to withdraw capacity on some routes they operate.

We remain clear that the UK ETS is an important tool to drive decarbonisation across domestic and short haul aviation. We are mindful that with the phase-out of aviation free allocation, it is appropriate to consider the impact on regional connectivity across the United Kingdom. In particular, we are conscious of the importance of air connectivity to communities in isolated areas with few other viable means of transport, such as those in the Scottish Highlands and Islands. In those regions air connectivity is often of crucial importance to maintain the viability of those communities. We are similarly conscious of the importance of air travel in linking Northern Ireland to the rest of the United Kingdom due to the lack of rail and road options available.

Given the possible impacts of the phase-out, and ultimate removal, of free allocation for the domestic aviation sector, it is appropriate for the Authority to further assess and review this issue. We will ensure there is appropriate provision to support airlines and individual routes that are in danger of being lost, thus maintaining vital connectivity across the United Kingdom. If required, the Authority, in consultation with the relevant departments across the UK

Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland, will ensure that appropriate mitigations are put in place to prevent negative outcomes for these regions and communities. For example, this could include exemptions and policies outside of the UK ETS.

## Free Allocation Methodology

### Summary of Proposal

The Authority launched a call for evidence on UK ETS free allocation in 2021 supported by a series of roundtable discussions with aviation industry stakeholders<sup>34</sup>. The responses highlighted several issues and inconsistencies with the current methodology for aviation. In particular, the current distribution of free allowances amongst participants in the UK ETS did not reflect current aviation activity. The consultation explored a potential update to the free allocation methodology to ensure equitable and proportionate distribution of allowances to scheme participants relative to their UK ETS activity. The Authority stated that any potential methodology changes would be balanced against the duration of aviation free allocation policy to minimise unnecessary administrative burden associated with data collection exercises.

Questions
<b>52) Should the UK ETS aviation free allocation methodology be updated to use a more recent year? (Y/N) If yes, which year and why? How often should UK ETS aviation activity data be updated in the future? Please expand on your answer and give evidence where possible.</b>
<b>53) Do you think that the aviation benchmark should reflect UK ETS aviation activity? (Y/N) Please expand on your answer and give evidence where possible.</b>
<b>54) Do you think the UK ETS aviation free allocation policy should account for changes in aviation activity and new entrants? (Y/N) Please expand on your answer and provide evidence where possible.</b>
<b>55) How often should aircraft operators report their TKM data under the UK ETS? Alternatively, are there other appropriate data sources the UK ETS could use to monitor aviation activity? Please expand on your answer and provide evidence where possible.</b>
<b>56) How can we ensure free allocation entitlements, including in a transition to full auctioning, are proportionate and equitable for all UK ETS aircraft operators?</b>

<sup>34</sup> <https://www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review-call-for-evidence>

## Summary of Responses

There were 16 responses to question 52, of which 11 (69%) agreed that free allocation methodology should be updated to use a more recent activity year, five (31%) disagreed. Respondents that agreed noted that the current 2010 baseline is inconsistent with the current aviation activity and creates a competitive distortion. Four respondents (25%) supported updating the methodology to use 2019 activity data as it was the last year of aviation activity that was unimpacted by COVID-19. Three respondents (19%) supported updating the methodology to use 2023 activity data. Two respondents (13%) stated that any update to the allocation methodology should explicitly exclude COVID-19 affected years (2020, 2021 and 2022). Finally, four respondents (25%) supported regular updates to the methodology. Of those that disagreed with updating UK ETS aviation free allocation methodology to a more recent activity year, three respondents (19%) argued that there are little benefits in updating the methodology given the proposal to phase out aviation free allocation entirely. Respondents highlighted the complexity and administrative burden involved in a free allocation methodology update.

There were 13 responses to question 53, of which nine (69%) agreed that the aviation benchmark should reflect UK ETS activity, three (23%) disagreed, and one (8%) did not specify. Of those in support, four (31%) advocated aligning the allocation methodology with flight activity covered by the scope of the UK ETS. Two respondents (15%) proposed the benchmark should reflect the type of flight operations arguing that the carbon intensity differs between different types of aviation activity.

There were 12 responses to question 54, of which seven (75%) supported accounting for changes in aviation activity and new entrants. Three respondents (25%) highlighted that changes in aviation activity and new entrants could be accounted for through regular updates to the activity data and noted that regular methodology updates would ensure the benchmark remains representative of aviation activity. Three respondents (25%) argued that accounting for new entrants would minimise competitive distortions between new entrants and established operators. Of those that did not support the proposal, two respondents (17%) argued that accounting for activity changes and new entrants was not necessary given the proposal to phase-out aviation free allocation.

There were 13 responses to question 55, of which seven respondents (54%) stated a preference for an annual update to the activity data. Two respondents (15%) called for the TKM data to be made publicly available to improve transparency of information.

There were 12 responses to question 56, of which four respondents (33%) highlighted that updating the methodology to a more recent year would ensure a proportionate allocation amongst scheme participants. Three respondents (25%) argued that equality will be achieved by phasing-out aviation free allocation as proposed. Three respondents (25%) argued that airlines should be prevented from receiving more free allocation than their verified emissions. Four respondents (33%) argued that the Authority should allow sufficient time for operators to plan for changes. Three respondents (25%) underlined the importance of clarity in policy making and argued that providing a clear and predictable path will allow operators to plan and

avoid sudden shocks to the market. Two respondents (17%) stated that equality would be achieved through expanding the scope of the UK ETS to all UK departing flights.

## The Authority Response

The Authority has acknowledged the respondents' concern that the current aviation free allocation methodology calculation is based on a 2010 activity data which is inconsistent with current aviation activity and creates competitive distortions between participants.

We have carefully assessed the legislative and administrative steps that would have to be taken to update the methodology. This would include, but is not limited to, legislative changes and a data collection exercise followed by a recalculation of free allocation entitlement administered by the Regulators. While some aircraft operators hold the relevant data, others would be exposed to increased administrative burden. A data collection exercise would need to take place in the future with advance notice to ensure that all operators have an equal opportunity to apply for allocation. However, this would be disproportionate and difficult to implement given the duration of the phase-out. In addition, re-calculating free allocation entitlements based on updated activity data is likely to result in a step change in aircraft operators' free allocation, which could affect their ability to adequately plan and prepare for the transition to full auctioning by 2026. We recognise that multiple respondents argued against methodology changes in light of the proposal to phase-out aviation free allocation entirely. The Authority has decided not to update the aviation free allocation methodology and not to account for new entrants in light of the decision to phase-out aviation free allocation by 2026.

We have considered other technical improvements that can be made to the current methodology until aviation free allocation is phased-out. In 2021, the level of aviation free allocation issued to operators surpassed the sector's verified emissions due to the impacts of COVID-19 on aviation activity and, prior to the COVID-19 pandemic, under the EU ETS several operators received more aviation free allocation than their verified emissions. In light of the above, and consideration to responses we received which called for an end to the overallocation of aviation free allowances; the Authority has decided to cap the total amount of aviation free allocation that operators are eligible to receive at 100% of their verified emissions. This ensures that aviation free allocation is distributed appropriately and in line with operators' verified emissions until the withdrawal of aviation free allocation in 2026. The policy intent of aviation free allocation is to mitigate the risk of carbon leakage and the policy did not intend for aircraft operators to receive more allowances than their verified emissions. Continuing to allow some operators to receive more allowances than their verified emissions would be inconsistent with the overarching objective of the UK ETS to incentivise decarbonisation and alignment of the UK ETS cap with a net zero trajectory.

## SAF Call for Evidence

### Summary of Call for Evidence

Sustainable aviation fuels (SAF) are one of the key technologies identified to help decarbonise the aviation sector. Aircraft operators that use qualifying SAF can claim a corresponding reduction in their UK ETS obligations. Following a pilot phase of reporting SAF to a UK regulator, the Authority will be working closely with Regulators to operationalise the policy in full. In the consultation, the Authority sought views on how greenhouse gas (GHG) emissions reductions achieved by use of SAF could be accounted for appropriately in the UK ETS, and how UK ETS SAF policy could interact with the UK Government's planned SAF mandate<sup>35</sup>. This section of the consultation was in the form of a Call for Evidence and did not include policy proposals. Responses will help inform further policy development.

#### Questions

- 58) How do we ensure that GHG emissions from SAF are accounted for appropriately with respect to aircraft operators' UK ETS obligations?**
- 59) Should emissions reductions delivered through SAF supplied to comply with the proposed SAF mandate contribute towards reductions in UK ETS obligations for aircraft operators?**
- 60) If so, how should supply of SAF and its emissions reductions be reported in a way that ensures SAF usage is only reported under one carbon pricing scheme, whilst minimising administrative burden for aircraft operators?**

### Summary of Responses

There were 46 responses to question 58. Sixteen respondents (35%) supported the principle of accounting for GHG emissions appropriately as a means of encouraging SAF with lower lifecycle emissions. The use of lifecycle emissions analysis was also supported by 17 respondents (37%) who further proposed the Carbon Offsetting Reduction Scheme for International Aviation (CORSIA) lifecycle assessment (LCA) methodology as the most appropriate tool for LCA analysis, which is aligned with international standards. Accurate recording of emissions from SAF and airlines was supported by three further respondents as a fundamental aspect of UK ETS obligations. However, 12 respondents (46%) raised concerns that the process of accounting for upstream emissions may be too complex and burdensome for aircraft operators. Eight respondents (17%) addressed the financial difference between SAF and kerosene, and subsequently proposed double and triple crediting of SAF in the UK ETS as a solution. Finally, 14 respondents (30%) argued that stationary installation operators should not be included in obligations from UK ETS when using captured CO<sub>2</sub> to produce

<sup>35</sup> <https://www.gov.uk/government/consultations/pathway-to-net-zero-aviation-developing-the-uk-sustainable-aviation-fuel-mandate>

synthetic fuels and that the responsibility should sit with the aircraft operators when said fuel is burned.

There were 41 responses to question 59, of which 35 (85%) were supportive of the view that emissions reductions delivered through SAF supplied to comply with the proposed SAF mandate should contribute towards reductions in the UK ETS obligations. Four respondents (10%) disagreed and two (5%) provided answers that were unclear. NGOs and non-profit organisations were amongst those who disagreed, reasoning that this approach would lead to double counting of emissions reductions. Nine respondents (22%), including airlines, that responded positively to this question suggested that this would support the development of SAF markets. Eight respondents (20%) raised the general importance of decarbonising the aviation sector and a further five respondents (12%) argued that any policy to incentivise SAF could contribute to UK leadership in this area.

There were 31 responses to question 60. Four respondents (13%) suggested that the UK should establish its own central database (to include methodology accountancy, registry, and document traceability). Nine respondents (29%) suggested that there should be an international database or reporting system to accurately account for the usage of SAF. Three respondents (10%) suggested that SAF mandate certificates should be used as part of the UK ETS to claim emissions reduction benefits. Three respondents (10%) expressed the view that CO<sub>2</sub> captured to feed SAF production should be treated as zero emissions for installations, and that the emissions charge from UK ETS should be placed on the airlines when using the fuel. However, three respondents (10%) suggested that the cost of emissions from captured CO<sub>2</sub> should be the responsibility of the installation. Overall, respondents agreed that there should be a clear record system to accurately account for all emissions in CO<sub>2</sub> capture and SAF production.

## The Authority Response

The SAF mandate will be the key driver of emissions savings for aviation through the use of SAF, by requiring at least 10% (c.1.2 million tonnes) of jet fuel to be made from sustainable sources by 2030. When the mandate begins in 2025, it will obligate an increasing amount of SAF to be blended into the UK jet fuel mix, to help drive down carbon emissions towards net zero.

The Authority will continue to develop proposals on how the UK ETS should treat the use of SAF by aircraft operators and will consult on these in due course. While SAF will continue to be zero rated under the UK ETS in the short-term, the Authority will continue to explore alternative options to SAF being zero rated in the future. We recognise that SAF does not currently achieve zero emissions although it has the potential to do so in the future. We are considering the option of requiring aircraft operators to reduce their claims relative to the lifecycle emissions savings of their SAF over fossil kerosene as is done under CORSIA. We will continue to review this and will consult with concrete policy proposals.

The Authority welcomes stakeholder views on how supply of SAF and its emissions reductions are reported. The Authority is aware that under current UK ETS provisions, aircraft operators

have experienced difficulty in securing proof of sustainability from suppliers who require this documentation to receive reward under the Renewable Transport Fuel Obligation (RTFO). Discussions between the UK Government, the Regulators, and voluntary schemes about potential ways to resolve this issue are ongoing.

## Non-CO<sub>2</sub> climate impacts Call for Evidence

### Summary of Proposal

The UK ETS applies to some additional greenhouse gases other than CO<sub>2</sub> for certain sectors. For the aviation sector, currently the UK ETS only covers CO<sub>2</sub> emissions, even though aviation also impacts the climate through non-CO<sub>2</sub> emissions and their effects.

Emissions from nitrogen oxides (NO<sub>x</sub>) and the formation of contrail cirrus clouds are understood to have the greatest magnitude of the non-CO<sub>2</sub> impacts<sup>36</sup>. Whilst the scientific understanding of non-CO<sub>2</sub> impacts has developed substantially in recent years, there are still multiple challenges for policy development, in particular the large uncertainties regarding the magnitude of non-CO<sub>2</sub> impacts and how to effectively monitor them. Moreover, there is currently no consensus over a suitable metric for comparing the climate effect of CO<sub>2</sub> with non-CO<sub>2</sub> impacts. These metrics' values can also vary over time and with different future aviation fuel types, meaning that some potential actions to reduce non-CO<sub>2</sub> could risk increasing overall warming.

In the consultation we posed high-level questions to gather evidence on the feasibility and appropriateness of incorporating the non-CO<sub>2</sub> impacts of aviation in the UK ETS, with an initial interest in NO<sub>x</sub> emissions. We also recognise there are various measures besides the UK ETS that can target non-CO<sub>2</sub> impacts. This section of the consultation was in the form of Call for Evidence and did not include policy proposals. Responses will help inform further policy development and our approach will continue to be driven by latest scientific understanding.

Questions
<b>62) Should we consider capturing aviation's non-CO<sub>2</sub> impacts in the UK ETS?</b>
<b>63) How could we treat NO<sub>x</sub> in the UK ETS to reflect its differing climate impact compared to CO<sub>2</sub>?</b>
<b>64) How could we monitor aircraft NO<sub>x</sub> emissions, whilst seeking to minimise the additional administrative burden for airlines?</b>

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<sup>36</sup> <https://doi.org/10.1016/j.atmosenv.2020.117834> See Figure 3. Note that the scale of these effects varies significantly. Warming from contrail cirrus is around two times that of CO<sub>2</sub>, whereas warming from NO<sub>x</sub> is around half that of CO<sub>2</sub>. However, the confidence level for these figures is 'low' and these proportions are not fixed.

**65) How could the UK ETS address additional non-CO<sub>2</sub> aviation impacts, such as contrail cirrus? Please explain your answer and give evidence where possible.**

**66) Should we explore any other near term pricing measures, such as charges, to account for non-CO<sub>2</sub> impacts whilst consideration is given to full incorporation into the UK ETS? How could these work in the UK ETS? Please explain your answer and give evidence where possible.**

## Summary of Responses

There were 38 responses to question 62, of which 22 respondents (58%) said that we should not consider capturing aviation's non-CO<sub>2</sub> impacts and 12 respondents (32%), a majority NGOs, said that we should consider capturing non-CO<sub>2</sub> impacts and argued this was important to account for the full climate impact of aviation. Several highlighted that the contribution of non-CO<sub>2</sub> to aviation's climate impact is understood to be significant and so needs to be addressed. Some of these respondents acknowledged the scientific uncertainties but argued 'imperfect' action would be better than no action.

Of those that disagreed, 16 respondents (42%), a majority from the aviation industry, saw the inclusion of non-CO<sub>2</sub> in the UK ETS as premature and thought scientific understanding needed to improve before using methods such as pricing. These respondents emphasised the large uncertainty regarding the magnitude of non-CO<sub>2</sub> impacts, how their effects (both warming and cooling) may change over time, and the need for more research. There were also concerns about trade-offs with CO<sub>2</sub>.

Seven respondents (18%) were concerned about the complexity and difficulty of being able to accurately monitor and measure non-CO<sub>2</sub> impacts, particularly given their differing lifespans and the influence of factors like atmospheric conditions and time of day. Eight respondents (21%) supported using other methods to address non-CO<sub>2</sub> impacts, such as flight path efficiencies, use of SAF and new aircraft technologies. Four respondents (11%) thought that any expansion of the UK ETS to cover non-CO<sub>2</sub> impacts should be consistent across sectors.

There were 19 responses to question 63. Nine respondents (47%) argued that NO<sub>x</sub> should not be included in the UK ETS due to uncertainties about its climate impact which would make accounting for NO<sub>x</sub> emissions with accuracy difficult.

Two respondents (22%) suggested using a form of 'multiplier' against CO<sub>2</sub> emissions in the UK ETS to account for NO<sub>x</sub>, for example based on radiative forcing values or global warming potentials. However, two other respondents explicitly opposed these metrics as inaccurate means of determining the climate impact of NO<sub>x</sub>.

There were 15 responses to question 64. Six respondents (40%) suggested potential methods for monitoring NO<sub>x</sub> emissions, including using the Boeing Fuel Flow Model, an emissions factor proportionate to engine type and fuel burn and the method put forward in a report

commissioned by the European Commission<sup>37</sup>. Three respondents (20%) who referenced potential monitoring methods cautioned against using these in the UK ETS, due to challenges in accurately quantifying the climate impact of NO<sub>x</sub>. Five respondents raised concerns with the accuracy and complexity of monitoring NO<sub>x</sub> emissions.

There were 17 responses to question 65. Four respondents (24%) suggested that a multiplier or a surcharge should be introduced in the UK ETS so that airlines would pay more or surrender additional allowances against their CO<sub>2</sub> emissions. Two respondents (12%) opposed the use of a multiplier, arguing this would not accurately quantify the climate impact of contrail cirrus. Eleven respondents (65%) did not support using the UK ETS to address contrail cirrus. These respondents cited similar concerns raised in response to earlier questions, for example the lack of scientific certainty on climate impact and effective mitigation methods, that other methods would be more effective, and challenges with accurately monitoring contrail cirrus. Three respondents (18%) were concerned about introducing perverse incentives, for example by incentivising airlines to fly longer routes avoiding ice supersaturated areas to reduce contrail cirrus, and therefore potentially increasing overall climate impact by increasing CO<sub>2</sub> emissions.

There were 24 responses to question 66, of which 14 respondents (58%) did not support exploring near-term pricing measures like charges or multipliers. Of those, a majority aviation industry respondents, pointed towards other methods for addressing non-CO<sub>2</sub>. Four respondents (17%) noted there are already NO<sub>x</sub> standards and local airport NO<sub>x</sub> charges aimed at improving air quality, which have a secondary effect of regulating cruise NO<sub>x</sub> emissions. Four respondents (17%) were keen to see other methods explored either in addition to or instead of introducing a charge for non-CO<sub>2</sub> impacts.

Three respondents (13%) argued a charge or multiplier would be ineffective and would not create an incentive for operators to reduce non-CO<sub>2</sub>. Five respondents (21%) argued pricing measures should not be pursued until there is improved scientific understanding of non-CO<sub>2</sub> impacts. These respondents thought additional funding and research was needed and highlighted the importance of establishing an international scientific consensus. Respondents in support, a majority NGOs, argued that introducing a charge would implement the polluter pays principle and account for aviation's total climate impact.

## The Authority Response

The Authority recognises that in addition to the warming caused by CO<sub>2</sub>, aviation also has non-CO<sub>2</sub> climate impacts, which need to be addressed. The Jet Zero Strategy<sup>38</sup> set out the UK Government's overall approach to better understand and mitigate non-CO<sub>2</sub> impacts, recognising recent scientific evidence suggests the best estimate is that roughly two thirds of aviation's current climate impact is due to non-CO<sub>2</sub>.

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<sup>37</sup> CE Delft et al, Lower NO<sub>x</sub> at Higher Altitudes Policies to Reduce the Climate Impact of Aviation NO<sub>x</sub> Emission, 2008

[https://www.researchgate.net/publication/265493774\\_Lower\\_NO\\_x\\_at\\_Higher\\_Altitudes\\_Policies\\_to\\_Reduce\\_the\\_Climate\\_Impact\\_of\\_Aviation\\_NO\\_x\\_Emission](https://www.researchgate.net/publication/265493774_Lower_NO_x_at_Higher_Altitudes_Policies_to_Reduce_the_Climate_Impact_of_Aviation_NO_x_Emission)

<sup>38</sup> <https://www.gov.uk/government/publications/jet-zero-strategy-delivering-net-zero-aviation-by-2050>

Research and analysis carried out thus far suggests that many of the measures to decarbonise aviation may also have a positive impact on reducing non-CO<sub>2</sub> impacts. The Strategy highlighted that where there is evidence to the contrary, the UK Government will carefully consider the overall climate impact and adjust our policy as required.

Current scientific uncertainty regarding the magnitude of non-CO<sub>2</sub> impacts and the lack of consensus over effective monitoring poses challenges for pricing non-CO<sub>2</sub> emissions through mechanisms like the UK ETS. We recognise the imperative of the polluter pays principle and our aim is to start pricing aviation's non-CO<sub>2</sub> climate impacts as soon as scientific understanding and consensus over a methodology becomes clear enough to support this. We will continue to explore the feasibility of including aviation's non-CO<sub>2</sub> impacts in the UK ETS, as well as alternative pricing measures such as standalone charges, or a multiplier within the UK ETS.

Effective monitoring of non-CO<sub>2</sub> impacts would be key to an effective pricing mechanism. As noted in the call for evidence, there are challenges with accurately estimating full flight NO<sub>x</sub> emissions. An accurate CO<sub>2</sub>-equivalent metric would also be required to price non-CO<sub>2</sub> alongside CO<sub>2</sub> in the UK ETS, whilst avoiding perverse incentives and risking overall net-warming, and there is currently no scientific consensus on the correct metric to use.

The UK Government is committed to working with industry and academia to explore a means of estimating and tracking the non-CO<sub>2</sub> impacts from the UK aviation industry, and is scoping out a research programme to support this commitment. Through the programme, we will look to improve scientific understanding of aviation's non-CO<sub>2</sub> climate impacts. We are also aiming to investigate methods for monitoring and modelling these non-CO<sub>2</sub> impacts and evaluate the suitability of existing and alternative CO<sub>2</sub> equivalent conversion metrics to inform future policy development.

The UK ETS could play a meaningful role in better understanding and accounting for aviation's non-CO<sub>2</sub> impacts, for example, through introducing a monitoring and reporting system, and we will further explore the feasibility of this as an initial step towards pricing non-CO<sub>2</sub> impacts. The Authority would carry out a consultation exercise before bringing aviation's non-CO<sub>2</sub> impacts within scope of the UK ETS.

## International Cooperation including UK to Switzerland Flights Call for Evidence

### Summary of Proposal

Questions 67 to 69 regarding flights from the UK to Switzerland have been addressed in the initial Authority response<sup>39</sup>. In November 2022, the UK signed a Memorandum of Understanding setting out the UK's intention to include flights from the UK to Switzerland in the

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<sup>39</sup> <https://www.gov.uk/government/consultations/developing-the-uk-emissions-trading-scheme-uk-ets>

UK ETS as comprehensively as possible by 1 January 2023<sup>40</sup>. Legislation is in force to expand the scope of the UK ETS to include flights from Great Britain to Switzerland with the intention to include flights from Northern Ireland to Switzerland at the earliest possibility. Responses to the remaining question on UK to Switzerland flights (question 70) are summarised below. The Call for Evidence sought views on whether seeking agreement to expand the geographic scope of the UK ETS without linking agreements should be explored for other flights departing the UK mainland that are not covered by carbon pricing schemes.

The UK ETS is currently a standalone carbon pricing scheme, however, given that many aircraft operators will have obligations under the UK ETS in addition to other schemes, those operators are subject to separate regulation increasing their compliance and administrative burdens. The Authority sought to gather evidence regarding compliance with multiple schemes to help inform international engagement and potential cooperation on operational features of the scheme (questions 71-72).

Questions
<b>70) Are there any other flights departing the UK mainland that are not covered by carbon pricing schemes that we should seek agreement with the destination state or territory to include in the UK ETS? (Y/N) Please expand on your answer and give evidence where possible.</b>
<b>71) What areas of cooperation between the UK ETS and other emissions trading schemes, such as the EU ETS, do you think should be prioritised for aviation?</b>
<b>72) How can operational features of the UK ETS be simplified for aircraft operators through cooperation with other schemes?</b>

## Summary of Responses

There were 15 responses to question 70, of which 10 respondents (67%) agreed that there are flights departing the UK mainland that are not covered by carbon pricing schemes that could be included in the UK ETS, five (33%) disagreed. Of those that agreed, nine respondents (60%) argued that the scope of the UK ETS should be expanded to cover all UK departing flights. The main reason cited was that the global carbon pricing scheme for aviation – CORSIA, which covers international flights – was not effective enough. Respondents were concerned about the effects of distortions between aircraft operators within the scope of the UK ETS and aircraft operators outside of the scope of the UK ETS. Of the five that disagreed, two (13%) highlighted that CORSIA already covers international flights and argued that this is sufficient. One respondent (7%) noted that currently, flights between the UK and Crown Dependencies and Overseas Territories are not captured by either the UK ETS or CORSIA.

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<sup>40</sup> <https://www.gov.uk/government/publications/coverage-of-aviation-in-the-uk-and-swiss-emissions-trading-schemes-memorandum-of-understanding#:~:text=This%20MoU%20states%20the%20UK's,participating%20in%20the%20scheme>.

They argued that emissions from these flights should come within scope of one of the schemes.

There were 20 responses to question 71, of which seven respondents (35%) supported UK ETS and EU ETS linking. Benefits cited included improving liquidity, aligning the respective carbon prices and reducing administrative burden for aircraft operators. Four respondents (25%) supported maintaining alignment and consistency between the UK ETS and the EU ETS, in terms of policy direction and operation of the schemes. Benefits cited included avoiding competitive distortions, carbon leakage, and additional administrative burden. Three respondents (15%) showed support for a 'one stop shop' style approach for aircraft operators, where they would report to one authority and submit one emissions report for both the UK and EU ETS to reduce their administrative burden. In addition, seven respondents (35%) commented on how the UK ETS would interact with CORSIA, and how this compared to the EU's approach. Three (15%) argued that the UK ETS should not apply to any international flights, while one proposed that the UK ETS should be expanded to all UK departing flights. Finally, three respondents (15%) argued that UK ETS revenues should be used to fund a price support mechanism for SAF. This was raised in the context of EU ETS proposals to scale up the EU's Innovation Fund and use revenues to support 'Contracts for Difference', and the need for a similar commitment in the UK.

There were 12 responses to question 72. Four respondents (33%) showed support for a 'one stop shop' style approach for aircraft operators. Three respondents (25%) commented on the interaction between the UK ETS and CORSIA. Three respondents (25%) expressed support for UK ETS and EU ETS linking. Two respondents (17%) argued that the UK ETS should not apply to international flights. Another respondent proposed that the UK ETS be expanded to all UK departing flights and the costs of CORSIA deducted.

## The Authority Response

The Authority recognises the importance of international action to tackle emissions from international aviation and the UK's commitment to implementing CORSIA. The Authority acknowledges that some respondents were of the view that the UK ETS should apply to all departing flights. The majority of international flights departing the UK are covered by CORSIA and the UK continues to play a leading role in the work of the International Civil Aviation Organisation (ICAO) through negotiating for ambitious global action to tackle international aviation emissions. Following the UK Government's initial consultation on implementing CORSIA in the UK in 2021 and the outcome of the recent ICAO Assembly, the UK Government is carefully considering the approach to interaction between CORSIA and UK ETS on flights in scope of both schemes,<sup>41</sup> and will consult again on our interaction approach in due course.

The Authority acknowledges that flights between the UK and Crown Dependencies and Overseas Territories (with the exception of Gibraltar) are not currently covered by the UK ETS and/or CORSIA. For the purposes of the Chicago Convention, British Crown Dependencies

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<sup>41</sup> <https://www.gov.uk/government/consultations/implementing-the-carbon-offsetting-and-reduction-scheme-for-international-aviation/implementing-the-carbon-offsetting-and-reduction-scheme-for-international-aviation-corsia>

and Overseas Territories are treated as part of the UK. For this reason, flights between the UK and its Crown Dependencies and all Overseas Territories are considered domestic flights under CORSIA and are not subject to monitoring, reporting and verification (MRV) or offsetting requirements. Any future changes to the treatment of these flights under the UK ETS would be subject to a full public consultation.

The Authority recognises that carbon pricing is most effective when it is deployed widely and across borders. In addition to developing an ambitious carbon pricing system domestically, we are keen to cooperate with other countries on carbon pricing measures to support increased ambition globally. Under the terms of the Trade and Cooperation Agreement (TCA), the UK and EU agreed to cooperate on carbon pricing, including through giving serious consideration to linking our respective carbon pricing schemes. Cooperation and dialogue on carbon pricing, including by considering linking, will continue to be important as both parties strive to reach ambitious climate targets.

The Authority recognises that aircraft operators within the UK ETS face a greater administrative burden than stationary installations given that they often participate in multiple schemes. The Authority has also noted the value in implementing a ‘one stop shop’ style approach for monitoring and reporting emissions to decrease the administrative burden for aircraft operators participating in the UK ETS and the EU ETS. The Authority will consider what steps can be taken to implement the approach, noting that such an approach would require the commitment and cooperation of both parties.

Overall, we are keen to increase multilateral cooperation on carbon pricing, which could include exchange of information, sharing best practices, promoting integrity of systems, or through exploring the case for more practical forms of cooperation, such as linking ETSs with other jurisdictions.

# Chapter 5: Expanding UK ETS coverage within covered sectors

This chapter covers proposals set out in Chapter 6 of the consultation.

We will include carbon dioxide (CO<sub>2</sub>) venting from the upstream oil and gas sector in the UK ETS.

The Authority will not change the 20-megawatt thermal (MWth) and 3MWth thresholds at this time. We will consult again if any changes are considered and will give industry sufficient notice ahead of any changes to the thresholds.

We will work with key regulatory partners to establish how Non-Pipeline Transport (NPT) should best be integrated into the existing UK ETS framework.

We will consult again on the full policy design for new UK ETS biomass sustainability criteria as soon as practicably possible, aiming for before the end of 2023.

## Upstream Oil and Gas – Venting and Flaring

### Summary of Proposal

We considered changes to the scope of emissions from the upstream oil and gas sector. This section contained a consultation on the inclusion of CO<sub>2</sub> venting, a Call for Evidence on the inclusion of methane emissions, and a Call for Evidence on the Monitoring, Reporting and Verification (MRV) of the sector's remaining greenhouse gas emissions, namely nitrous oxide (N<sub>2</sub>O) emissions and emissions from non-combustion processes.

### CO<sub>2</sub> venting

#### Summary of Proposal

We proposed that UK ETS obligations would fall on the operator of the installation that emits vented CO<sub>2</sub>, as is consistent with the current legislation. We did not propose providing any free allocation of allowances for the venting of CO<sub>2</sub>.

#### Questions

**74) Do you agree with the inclusion of CO<sub>2</sub> venting from upstream oil and gas in the UK ETS, and with the approach outlined above regarding MRV, meter installation, point of obligation, and timings? (Y/N) Please provide evidence to support your answer where possible.**

- 75) What threshold, if any, should be set for CO2 from venting? Please give evidence to support your answer where possible.**
- 76) How would inclusion of CO2 from venting incentivise behavioural change and/or decarbonisation? For example, would it incentivise improved design, the use of Carbon Capture and Storage (CCS) or other abatement? Please explain your answer.**
- 77) How would the inclusion of CO2 from venting interact with existing and announced policies and regulations (including any relevant non-decarbonisation policies)?**
- 78) Is the sector likely to be impacted by the inclusion of CO2 from venting in the UK ETS? (Y/N) If so, how would the sector be impacted? For example, could early decommissioning or security of supply be concerns? Please give evidence to support your answer.**
- 79) What other traded sectors, if any, vent CO2? What are the likely number of installations and scale of emissions? Should these proposals be applied to these sectors? Please provide evidence to support your answer.**

## Summary of Responses

We received 31 responses to question 74 asking whether consultees agree to the inclusion of CO2 venting from the upstream oil and gas sector into the scope of the UK ETS. Nineteen respondents (61%) agreed with the inclusion of CO2 venting, while seven (23%) objected to the proposals. Those who endorsed the proposals cited a range of benefits to expanding the scheme which included an increase in covered emissions of the UK ETS, greater liquidity due to more market participants, and an increased incentive to adopt less carbon intensive technologies and solutions. Those who objected to the proposals expressed concern that the proposals would make the UK oil and gas sector less competitive as it would be more exposed to the carbon price, would lead to an increase in energy costs which would trickle down to consumers, and difficulties in installing adequate MRV systems.

In addition, respondents noted several considerations that the Authority should make before implementing its policy. This included calls for an impact assessment to be conducted on what impact the proposals would have on recently commissioned North Sea projects, domestic production and late life installations, consideration for what thresholds should be adopted, and suggestions that policy proposals should also cover methane.

In response to question 75 concerning thresholds for CO2 venting, we received eight responses. Suggestions included bringing at least 80% of emissions from venting into scope, and a de minimis threshold.

For question 76, we received 15 responses. Five respondents (33%) were not convinced that the policy would deliver behavioural change, six (40%) believed the policy would incentivise a drive towards decarbonisation while four (27%) were either neutral or did not answer the

question directly. Those who thought the policy could lead to behavioural changes said there were gains to be made in improving emission-cutting technology, and design or uptake of CCS. Those who believed no change in behaviour would occur argued that the CO<sub>2</sub> emissions from venting are too small to bring about behavioural change, that the costs of abatement technology are too high, and that the inclusion could undermine emissions reduction initiatives in favour of accurate measurement technology.

We received nine responses to question 77. Two respondents (22%) suggested that if emissions from venting were included, but the UK ETS cap was not adjusted, then the price of UK allowances would increase. Other responses suggested that the inclusion of CO<sub>2</sub> venting would be in keeping with the UK's net zero targets.

For question 78, which asked how the upstream oil and gas sector would be impacted by this policy change, we received eight responses, and the decommissioning of oil and gas facilities was the subject of 50% of answers. Three respondents (38%) flagged that Operating Expenses (OPEX) costs would increase if CO<sub>2</sub> venting were included in the UK ETS and that bringing in additional MRV systems would result in extra costs being added to businesses. Respondents expressed concern about late life oil and gas facilities, which may have to be decommissioned early due to increased costs. Respondents stressed the need to carry out analytical work to understand the risk of early decommissioning of late life oil and gas facilities as a result of the inclusion of CO<sub>2</sub> venting. Other respondents noted that earlier decommissioning would be a positive development as it would lead to a sharper decline in CO<sub>2</sub> emissions, or that because of the small volume of emissions involved in venting, its inclusion was unlikely to have a significant impact on the oil and gas sector.

The final question, 79, which asked what other traded sectors might vent CO<sub>2</sub>, also asked multiple follow-up questions such as what the scale of uncovered venting emissions might be and whether those emissions should also be brought into the UK ETS. It received 11 responses. Two respondents (18%) flagged that venting was common in the nuclear, water services, landfill and chemical sectors. Two respondents (18%) were supportive of wider coverage and stated that widespread inclusion of CO<sub>2</sub> venting would improve the liquidity of the UK ETS market, while two other respondents were sector specific and resisted the inclusion of venting in the nuclear and landfill sectors.

## **The Authority Response**

Following discussions with stakeholders and Regulators, we understand that the majority of emissions vented at upstream oil and gas installations are in fact process emissions. In the consultation, table 6.1 indicated that this policy would bring less than 0.01MtCO<sub>2</sub> into the scope of the UK ETS. This figure only accounted for the CO<sub>2</sub> that is inherent in the natural gas that is vented from an installation. The inclusion of vented process emissions, however, will cover the majority of vented CO<sub>2</sub> emissions, as was originally intended, and mean that the total amount of emissions brought into the UK ETS is approximately 0.4MtCO<sub>2</sub>.

The Authority will include process emissions from CO<sub>2</sub> venting from the upstream oil and gas sector in the UK ETS. Any CO<sub>2</sub> emissions that match the criteria laid out in the paragraphs below will have to be covered through the purchasing and surrendering of UK ETS allowances:

'Process emissions' count as any form of carbon dioxide-stripping process (also known as 'gas sweetening') in the upstream oil and gas sector. These processes include, but are not limited to: amine units, glycol units, selexol processes, absorption units, acid gas removal units, membrane technology, and cryogenic methods.

The two paragraphs below are intended as a clear guide to our understanding of 'process emissions' and therefore the types of process that will be brought into the UK ETS:

'Process emissions' are any process, via any means of technology, that removes carbon dioxide from the oil or gas, and then releases it to the atmosphere via either a vent or an unlit flare. This will not include any carbon dioxide that is emitted via an unlit flare that has not come through the carbon dioxide-stripping processes.

The 'upstream oil and gas sector' refers to any onshore or offshore installation that produces or extracts oil or natural gas from the land or the seabed, or crude processing terminals and gas terminals.

We are aware that the installation of meters for purposes of MRV is not always justified, due to cost benefit analysis, technical feasibility, or simply because it cannot be done immediately due to scheduling of installation shutdowns. We acknowledge that these concerns were raised by some stakeholders in response to the consultation. When designing the MRV requirements for this policy, we will therefore consider including alternative monitoring methodologies, such as estimations and modelling.

The threshold for inclusion of an installation into the main UK ETS for this policy will be 1,000 tonnes of CO<sub>2</sub> per annum. Any installation, regardless of whether they are already in the UK ETS because of other activities (such as combustion), that vents process emissions above this level must hold an approved UK ETS permit and will have to purchase and surrender UK allowances for all vented CO<sub>2</sub> process emissions.

The UK ETS obligations for these emissions would fall on the operator of the installation that emits the vented CO<sub>2</sub>. Where venting occurs at a crude processing terminal or a gas terminal, the obligation would fall on the terminal operator.

We will not provide any free allocation of UK allowances for the venting of CO<sub>2</sub>, as there is likely to be minimal financial impact on the sector and we do not anticipate that this policy will lead to carbon leakage.

We will not be adjusting the cap in 2025 to account for the emissions from this policy. As detailed above, the UK ETS Authority has consulted on aligning the UK ETS cap with a net zero trajectory and has agreed to set the cap at the top of the net zero consistent range that was consulted on. Increasing the cap by a small number of emissions to account for the CO<sub>2</sub> from venting in upstream oil and gas would take the cap outside of the range consulted on. We therefore do not intend to further adjust the cap to account for CO<sub>2</sub> venting given that we already intend to legislate to align the cap to a net zero consistent trajectory in 2024.

We recognise that giving sufficient notice for industry to prepare for changes to UK ETS obligations is valuable, and so will introduce this obligation from 1 January 2025. Emissions for 2025 will need to be reported on and allowances surrendered by April 2026.

## Methane Call for Evidence

### Summary of Call for Evidence

We called for evidence on early policy thinking regarding the inclusion of methane emissions from the upstream oil and gas sector in the UK ETS. We proposed that UK ETS obligations would fall on the operator of the installation that emits vented methane, as is consistent with the current Greenhouse Gas Emissions Trading Scheme Order 2020 (“UK ETS Order”). We also stated that a minimum threshold for which to report vented methane may need to be set. The threshold would determine which installations and the quantity of emissions that would fall in scope of the UK ETS.

We further proposed that these changes could be brought in from January 2026, with MRV data being submitted in the same time-period as the applications for the second free allocation period (mid-2024) which includes baseline data from the period of 2019-2023. However, we stated that we will reconsult prior to finalising any decisions and on this occasion only called for evidence and industry views.

#### Questions

**80) Do you agree with the sources of methane from upstream oil and gas as venting, cold flaring, methane slip, fugitive emissions, and other process emissions? (Y/N)**  
Please explain your answer.

**81) How could methane emissions from the sources identified above be accurately MRV'd? In particular, how could methane slip and fugitive emissions be accurately measured or estimated?**

**82) Do you agree that the Methane Action Plan could be used to support and provide data for MRV to occur? (Y/N) Please explain your answer.**

**83) How should methane emissions be converted into CO<sub>2</sub> using a common standard or other approach? In your answer, please consider Global Warming Potentials and atmospheric lifetime.**

**84) Do you agree with the approach outlined above, regarding point of obligation and timings? (Y/N) Please provide evidence to support your answer.**

**85) What, if any, is a suitable threshold for the inclusion of methane from upstream oil and gas in the UK ETS? Please explain your answer.**

**86) How would inclusion of methane from upstream oil and gas emissions incentivise behavioural change and/or decarbonisation?**

**87) What other traded sectors, if any, vent methane? What are the likely number of installations and size of emissions? Should these proposals be applied to these sectors? Please provide evidence to support your answer.**

## Summary of Responses

Ten (53%) of 19 respondents to question 80 agreed with the identified sources of methane as venting, cold flaring, methane slip, fugitive emissions and other process emissions. In addition, four respondents (21%) flagged other sources of methane which should be taken into consideration.

Four respondents (21%) expressed their opposition to the inclusion of sources of methane into the UK ETS by noting the existence of the Methane Action Plan and the risk of passing on costs to consumers. In addition, other respondents argued that CO<sub>2</sub> should remain the primary focus of the UK ETS to avoid adding extra regulatory burdens on operators that their international competitors may not have to comply with.

In response to question 81, ten out of 14 respondents (71%) suggested that existing MRV and monitoring methodologies could be applied to varying degrees. Four respondents (29%) suggested that methane emissions cannot be measured using existing monitoring systems either because it is difficult to measure the emissions with accuracy or because the installation of the required technology would be cost-prohibitive. Other respondents suggested that the UK ETS is inappropriate and that interventions that are less reliant on data may be more appropriate.

Six out of ten respondents (60%) agreed to question 82 which asked whether consultees agree that the Methane Action Plan could be used to support and provide data for MRV purposes.

In response to question 83, ten out of 19 respondents (53%) supported the use of Global Warming Potentials to convert methane emissions into CO<sub>2</sub> equivalent while two respondents suggested that conversion to CO<sub>2</sub> was not strictly necessary, and that a separate pricing mechanism could be used for methane emissions instead.

Question 84 asked whether respondents agreed with the approach outlined in relation to points regarding obligation and timing, and received 14 responses. Eight respondents agreed (57%), four disagreed (29%), and two were neutral (14%). Of those who disagreed, two (14%) argued that the policy was being introduced too soon and they expressed concern that the 2024 and 2026 enforcement dates would not give them adequate time for modifications or for data to be validated. Other respondents encouraged greater action that would reduce emissions faster than the Methane Action Plan, requested clarity or further information regarding the definition of vented methane, and expressed preferences to use industry-agreed emissions factors.

Of the nine responses to question 85, which asked for suggestions for a suitable threshold for the inclusion of methane from upstream oil and gas, only five (56%) addressed the question

directly. Suggestions included 1,000 tonnes per annum, that the threshold should be set as low as practically possible, or that the threshold should cover at least 80% of the emissions.

We received 13 responses to question 86. Eight respondents (62%) said that inclusion would incentivise behavioural change and decarbonisation, due to the financial incentive to reduce methane emissions. This would lead to improvements in technology, methane controls, and emission management practices.

Three respondents (23%) suggested that inclusion would lead to minimal change. Their reasoning varied but included the arguments that the North Sea Transition Authority (NSTA, (previously known as the Oil and Gas Authority (OGA)) Strategy is already driving change, that the small level of emissions would make it difficult to justify any investment, and that inclusion would only lead to decommissioning of oil and gas facilities and therefore problems regarding security of supply.

Question 87 had three sub-questions and therefore received a variety of responses. It received 11 responses. Four respondents (36%) stated that venting methane is a widespread practice that is performed in agriculture, combustion processes, biological waste treatment, and chemical manufacture.

Of the general comments we received in this question, five respondents (45%) said that any scope expansion must come with a commensurate increase in the overall emissions cap and trajectory.

## **The Authority Response**

Expanding UK ETS coverage of the upstream oil and gas sector would provide an additional driver for greenhouse gas reduction across the industry, particularly for methane emissions, given the high Global Warming Potential compared to CO<sub>2</sub>.

As a Call for Evidence, we were keen to receive stakeholders' views on the feasibility of expanding the UK ETS to methane emissions from upstream oil and gas and other traded sectors, and to hear about how such an expansion might interact with or affect current or proposed policies in this area, such as the Methane Action Plan.

We recognise that expansion to a new greenhouse gas could be a complicated development, and fully acknowledge those responses that called for us to further examine the sources of methane emissions, as well as those who asked for a clearer definition of methane venting.

The Authority will review this policy and consult on any changes in due course. We welcome input and engagement from all stakeholders and encourage them to engage when we consult further.

## **Safety venting and flaring Call for Evidence**

### **Summary of Call for Evidence**

Under current UK ETS rules, safety flaring is granted free allocation of allowances. We asked for evidence on how safety flaring and venting of methane should be defined for the purposes

of free allocation, to ensure that only flaring and venting which is necessary for safety reasons receives free allocation. This would ensure that unsafe behaviour is not incentivised and avoid perverse incentives to flare in order to receive free allocation.

### Questions

**88) Is some cold flaring and venting necessary for safety reasons? (Y/N) If so, how could we identify cold flaring and venting of methane conducted for safety reasons as opposed to routine cold flaring and venting? For example, should it be aligned to the Categories of Flaring and Venting defined by the OGA?**

**89) Should there be a free allocation of allowances for safety cold flaring and venting of methane? (Y/N) Please provide evidence to support your answer.**

**90) How should safety flaring be interpreted for the purposes of free allocation?**

### Summary of Responses

We received 17 responses to question 88. Six respondents (35%) stated that cold flaring and venting is necessary for safety reasons. Five respondents (29%) claimed that the high costs of gas mean that venting and flaring of methane is already minimised. Two respondents (12%) suggested that we could use the definitions from the World Bank, or the NSTA to identify safety flaring from cold flaring. Of the remaining responses, three respondents offered sector or site-specific information, for petrochemicals, the national transmissions system, and offshore oil and gas.

For question 89, we received 17 responses. Six respondents answered 'yes' (35%), four answered 'no' (24%), and seven (41%) did not answer the yes/no element of the question. Three respondents stressed the need for free allocation for safety purposes.

However, other respondents stated that free allowances are not provided for non-routine safety cold flaring and venting in other sectors, and therefore should not be given to the oil and gas sector. There were also concerns that giving free allowances to oil and gas may reduce the number available for other sectors, thus increasing the chance of carbon leakage.

Two respondents (12%) agreed to free allowances being given for safety cold flaring and venting but added that safety reasons should be validated or that there should be reductions of free allocation over time in order to incentivise more innovative approaches to dealing with emissions where appropriate.

Although eleven responses were received for question 90, very few addressed the question. One respondent (9%) said that safety flaring should be defined as maintenance or an emergency, such as de-pressurising or a major leak. Another respondent (9%) stated that definitions should be aligned with the World Bank and NSTA definitions of Safety, Routine and non-routine flaring.

## The Authority Response

While the Authority wants to ensure that we are not creating a perverse incentive to emit methane via flaring and venting for safe operations if there are alternative options, we equally recognise the importance of safety flaring and venting.

We also acknowledge the need for clear definitions of flaring, cold flaring and venting for safety purposes, and to develop a greater understanding of the distinctions between routine flaring and venting, and safety flaring and venting. We recognise the clear benefit in exploring how such definitions align with existing industry regulatory processes for consenting and reporting flaring and venting.

We are not proposing any changes at this stage, but we will review this policy in the coming months and reconsult in due course.

## Remaining upstream oil and gas emissions Call for Evidence

### Summary of Call for Evidence

We asked for evidence on the feasibility of reliably quantifying and auditing the emissions from non-combustion processes and N<sub>2</sub>O. We outlined that MRV methods would need to be developed for non-combustion processes, and consideration of the effort required would need to be taken. For N<sub>2</sub>O, although the gas used for fuels and flaring is measured, and gas composition is known in terms of nitrogen content, we recognised that challenges remain in determining the exact quantity of N<sub>2</sub>O emitted as a result of combustion.

#### Questions

**91) Do you agree with the remaining sources of upstream oil and gas emissions as non-combustion processes (process emissions, oil/gas terminal storage, oil loading) and as N<sub>2</sub>O (from combustion, non-combustion processes, and flaring)? (Y/N) Please explain your answer.**

**92) How could the GHG emissions identified above be accurately quantified? How could they be MRV'd?**

### Summary of Responses

Nine responses were received for question 91. Five (56%) agreed with the sources identified, one did not. Three respondents (33%) took this question as an opportunity to object to the expansion of the UK ETS to cover the remaining sources of upstream oil and gas emissions.

Other responses stated their support for reducing the remaining emissions from the oil and gas sector, their objection to fluorinated gases being brought into the UK ETS, and concerns about obligations being placed upon oil refineries.

We received eight responses for question 92. One respondent (13%) stated that MRV for the remaining gases was still in its infancy. This was supported by another respondent (13%) who

commented that estimation based on academic research may be a sensible option in absence of accurate MRV. Other respondents also stated that emissions could be deduced by basic default calculations, periodic sampling or measurements, or engineering estimations.

One respondent (13%) stated that N<sub>2</sub>O is accurately measured with continuous emission monitors across the combustion sector which could be used in other sectors where the release conditions are suitable.

## The Authority Response

We understand that the majority of CO<sub>2</sub> emissions from non-combustion processes are direct process emissions released into the atmosphere via vents or unlit flares and are therefore covered by the inclusion of CO<sub>2</sub> venting as detailed above. However, we also recognise that there may be other sources of CO<sub>2</sub> emissions from the sector that are not currently in scope of the UK ETS.

The Authority understands that these emissions may be very small and so could be difficult to MRV. We will investigate these sources further and assess not only the feasibility of bringing these emissions into scope, but also whether the MRV costs would be proportionate to the quantity of emissions, their burden of regulation, and their potential carbon price. We are not proposing any changes at this point, but we will review this policy in the coming months and reconsult in due course.

As in the case of methane emissions, we recognise the high Global Warming Potential of N<sub>2</sub>O compared to CO<sub>2</sub>. Expansion of the UK ETS to cover another greenhouse gas in this sector should be done in a well-considered and evidence-based way to ensure robustness of the overall scheme. We are therefore keen to develop a greater understanding of the sources of N<sub>2</sub>O from the upstream oil and gas sector.

We note the handful of respondents that commented that while the MRV of greenhouse gases other than CO<sub>2</sub> is still at an early stage, it could be done via calculations, estimations, and sampling. We also note that N<sub>2</sub>O emissions are already in scope of the UK ETS if they are emitted as a result of production of caprolactam, nitric acid, adipic acid, glyoxal and glyoxylic acid. We are not proposing any changes at this stage, but we will review this policy in the coming months and reconsult in due course.

## CCUS Transportation

### Summary of Proposal

The Authority proposed that in addition to allowing for transport via pipeline, the UK ETS be expanded to allow for the transportation of CO<sub>2</sub> through non-pipeline transport (e.g. shipping, rail, and road) by including them as a regulated activity.

By regulating non-pipeline transport, UK ETS operators will be allowed to make carbon subtractions when CO<sub>2</sub> has been permanently stored in a geological storage site.

## Questions

- 93) Do you agree with the proposal that the UK ETS be expanded to allow for the transportation of CO<sub>2</sub> through other forms of non-pipeline transport (i.e. shipping, rail and road)? (Y/N) Please explain your answer.**
- 94) Do you have any evidence to suggest how expanding the UK ETS to include other forms of CO<sub>2</sub> transport may impact the wider UK ETS or other policy areas of the Governments of the UK, either positively or adversely? For example considering the impacts of emissions produced by chosen means of transport. (Y/N) Please explain your answer.**
- 95) What mitigation strategies, if any, do you believe should be applied in relation to CO<sub>2</sub> emissions associated with all forms of CO<sub>2</sub> transport for CCUS (eg. emissions produced by a cargo ship or those associated with the operation of pipelines)? For example, a mitigation strategy might include the requirement for a chosen means of transport to adhere to emissions standards, net proportion of emissions delivered criteria (after deduction of emissions from transportation) or similar sustainability criteria.**

## Summary of Responses

There was a total of 65 responses to question 93 with 100% of respondents endorsing the proposal to expand the UK ETS to recognise non-pipeline transport (NPT) of CO<sub>2</sub> such as shipping, rail and road. Respondents supported the proposals for two reasons. First, respondents noted that expanding the UK ETS to NPT was essential for dispersed sites as they do not have access to pipelines and NPT will ensure that there is a level-playing field for industry by enabling operators who use NPT to make carbon subtractions. Respondents also noted that enabling NPT would lead to greater uptake of CCUS across industry and would also drive further development of CCUS technology and contribute towards decarbonisation.

In response to question 94, respondents recognised NPT would impact the UK ETS and wider policy areas beyond the UK ETS. Around half of respondents out of 65 noted that recognising NPT will support broader development of CCUS technologies and policy, offer great opportunities for industry to decarbonise and support the development of Greenhouse Gas Removals (GGR) projects away from industrial clusters. Many respondents said that NPT will be essential for decarbonising Energy from Waste (EfW) facilities and biomass plants, since the Climate Change Committee has advised a target for all biomass and EfW sites to consider CCS options by the 2030s to ensure they remain aligned with the UK's net zero ambitions. Some respondents raised concerns that only biomass plants and EfW facilities with CCS installed would be regarded as viable options for future investment and dispatch of power. Furthermore, 31 respondents (48%) suggested that recognising NPT could in the long-term help in the decarbonisation of NPT by, for example, encouraging the development and utilisation of non-carbon emitting means of shipping and fuel switching.

In relation to question 95, 35 (83%), said that the Authority should not apply any mitigation strategies in relation to CO<sub>2</sub> emissions associated with all forms of CO<sub>2</sub> transport for carbon capture and storage purposes. Respondents stressed that it was not the responsibility of the Authority to impose mitigation strategies that instead Other Government Departments (OGDs) or other policy levers should be responsible for mitigating transport emissions. Some respondents highlighted existing policies such as the Renewable Transport Fuel Obligations (RTFO) or suggested alignment with existing well-established sustainable criteria of the Renewables Obligation and Renewable Heat Incentive schemes.

Respondents also noted that the Authority risks double-counting or creating a double-penalty framework and adding extra complexity if additional mitigation strategies were introduced. Furthermore, respondents said that there was no need for additional mitigation strategies because transport emissions are already falling and will continue to fall with the greater uptake of renewable fuels and the further development of new technologies. Four respondents (9%) suggested that the Authority should explore options to mitigate emissions arising from non-pipeline transport. These responses came primarily from NGOs or consultancies and included proposals for a net approach, setting emissions standards for NPT or the incorporation of overall transportation emissions in the overall calculation of stored CO<sub>2</sub>.

Some respondents provided data on transport emissions. One respondent noted that emissions from a diesel-fuelled HGV roundtrip would represent around 1-3% of the transported CO<sub>2</sub>, depending on the distance travelled. Another respondent cited research commissioned by Department for Energy Security and Net Zero and conducted by Element Energy which suggests that shipping emissions for CCS may represent approximately 2% of the CO<sub>2</sub> carried<sup>42</sup>.

Respondents also identified policy areas where the Authority should provide greater clarity or areas to consider developing policy further. Twenty percent of respondents across all sectors expressed a desire for the UK ETS to recognise various uses of CO<sub>2</sub> other than its permanent storage in a geological storage site. Respondents in the Food & Drink sector mentioned food grade CO<sub>2</sub> while respondents from the Chemicals and Mineral Products sectors mentioned the process of mineralisation and encapsulation and other potential circular economy uses of CO<sub>2</sub>. In addition, some respondents noted that the UK ETS is one of many regulatory barriers to preventing cross-border transport and storage of CO<sub>2</sub>.

## The Authority Response

We welcome the support for the proposal to recognise NPT of CO<sub>2</sub>. The Authority will work with key regulatory partners to establish how NPT should best be integrated into the existing UK ETS framework. The intent and aim will be to enable UK ETS participants who use non-pipeline transport for CO<sub>2</sub> storage purposes to make carbon subtractions. As noted by respondents, recognising NPT will be essential in encouraging greater uptake of carbon

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<sup>42</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/761762/BEIS\\_Shipping\\_CO2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/761762/BEIS_Shipping_CO2.pdf)

capture technologies outside of the industrial clusters and in driving further industrial decarbonisation.

The Authority notes that the majority (91%) of respondents said that they do not believe the Authority should introduce additional mitigation strategies to tackle CO<sub>2</sub> emissions arising from NPT. However, to provide a robust carbon price incentive, the Authority believes emissions that occur because of transporting CO<sub>2</sub> – such as emissions from ships, rail and road and from compression of CO<sub>2</sub> – should be subject to similar emissions standards as pipeline transport. Not doing so risks creating perverse incentives to transport CO<sub>2</sub> disregarding the CO<sub>2</sub> emitted by the transport itself, and so regardless of whether there is any net CO<sub>2</sub> saving. The next step agreed by the Authority is to explore options for how NPT emissions can be handled through the inclusion of NPT via an appropriate regulatory model with the aim of implementation of the policy by the mid-2020s.

We note the concerns put forward by industry regarding existing regulatory barriers in relation to cross-border transfers of CO<sub>2</sub> and we recognise that there is a strong case for permitting international transport and storage of CO<sub>2</sub> and supporting the growth of CCS technology in reaching net zero. The Authority will therefore continue to work with key partners in developing the appropriate regulatory frameworks to support NPT development and regional decarbonisation efforts within the UK and with international partners. We also acknowledge respondents' comments regarding the expansion of the UK ETS scope to recognise various uses of CO<sub>2</sub> beyond its permanent storage in a geological storage site. The Authority will engage with industry to better understand what forms of carbon utilisation may be appropriate for inclusion in the UK ETS; this depends largely on ensuring that carbon is not emitted at a later stage and that if it is, the carbon is fully accounted for.

## Biomass

### Summary of Proposal

In the consultation, the Authority consulted on proposals to apply new sustainability criteria to biomass fuels combusted in all UK ETS installations. Since the current sustainability criteria only apply to bioliquids, we stated our intention to implement criteria that covered all forms (solid, gaseous, and liquid) of biomass. This would require installations to check whether all forms of biomass combusted meet a new sustainability standard, report any emissions, and purchase and surrender allowances to cover emissions from biomass that do not meet these criteria. We also sought views on which set of criteria to apply, or whether to develop UK ETS specific criteria.

The Authority proposed that to be exempt from the UK ETS, installations and combustion units which generate energy (power, heat, etc.) solely through biomass combustion must exclusively burn biomass which adheres to the relevant sustainability criteria.

We also invited views on the relationship between Hospital and Small Emitters (HSEs) and the proposed UK ETS sustainability criteria. The Authority suggested that we require the sustainability criteria to be applicable to HSEs for the purposes of (a) assessing eligibility to be

a HSE in the second allocation period, (b) calculating emissions targets and (c) determining whether an installation's reportable emissions exceed the emissions targets. An emissions factor of zero would only apply to biomass that meets the sustainability criteria. We proposed that this change come into effect from the start of the second allocation period.

### Questions

**96) Do you agree with the proposal that we implement sustainability criteria for solid, liquid and gaseous biomass for installations? (Y/N) Please explain your answer.**

**97) Which sustainability criteria should the UK ETS apply to solid, liquid and gaseous biomass (RO, CfD etc.), and would there be any value in developing UK ETS specific criteria? Please explain your reasoning.**

**98) What are your views on the proposal that for installations and combustion units which only burn biomass to be exempt from the UK ETS, operators must only use sustainable biomass?**

**99) What are your views on the suggestion that from the start of the second allocation period in the HSE scheme, sustainability criteria will be applied to biomass for the purpose of assessing eligibility, when calculating an emissions target for the installation and when determining whether an installation's reportable emissions exceed the emissions target?**

**100) Do you have any evidence regarding how applying sustainability criteria for solid and gaseous biomass in the UK as proposed may impact the UK ETS and/or other policy areas? (Y/N) If so, please provide this in as much detail as possible.**

**101) Going forward, is there anything else you think we should consider regarding biomass in the UK ETS?**

### Summary of Responses

Of the 66 responses we received to question 96, 59 respondents (89%) agreed with the proposal to implement sustainability criteria for solid, liquid and gaseous biomass for UK ETS installations. 46 respondents (70%) explicitly acknowledged the need for comprehensive criteria to cover all forms of biomass to ensure that feedstocks have been sustainably sourced.

We received 53 responses to the question of which sustainability criteria we should implement. The four most frequently mentioned suggestions were: new sustainability criteria for UK ETS operators (10 respondents, 19%); the alignment or application of the Renewable Obligation (RO) criteria to the UK ETS (10 respondents, 19%); unified or aligned sustainability criteria or principles across the UK (11 respondents, 21%); and a broader request to use existing

sustainability criteria for the UK ETS without specifying which existing criteria should be used (16 respondents, 30%).

Thirty-seven out of 54 respondents (69%) agreed with the proposal in question 98 to only exempt UK ETS installations which exclusively burn biomass that meets our sustainability criteria, citing the negative impacts of unsustainable biomass (the use of which should be discouraged), the carbon neutrality of sustainable biomass, and the importance of only using sustainably sourced biomass for energy. Other responses highlighted support for and concerns around exemption of emissions from waste wood or timber and included calls for criteria to be no more stringent than Renewable Energy Directive (EU) 2018/2001<sup>43</sup> (REDII), so that UK sites are not at a competitive disadvantage to their EU counterparts. Some respondents suggested the expanded UK ETS criteria should include biodiversity and forestry criteria.

Of the 26 respondents to question 99, 18 (69%) agreed with the suggestions regarding the HSE scheme and sustainability criteria. A variety of other comments were made including requests for further analysis upon biomass supply chains, and the importance of clarifying which criteria will be used before addressing HSE interactions.

We received 25 responses to question 100, however, only eight respondents (32%) said that they had evidence regarding the potential impact of sustainability criteria for solid and gaseous biomass on the UK ETS or other policy areas. Six respondents (24%) agreed that there should be alignment between the current sustainability criteria and the reporting mechanisms used in other UK policy areas, and the ones to be implemented in the UK ETS. This would help reduce the administrative burden for operators and ensure a consistent approach to sustainability across the UK economy.

We received 40 responses to question 101. Due to the broad nature of the question, we received a wide variety of responses. Ten respondents (25%) asked us to consider this work alongside various other policies, namely the Biomass Strategy; the other chapters in the consultation on waste, thresholds, and GGRs; and other nature-based greenhouse gas reduction targets. It was made explicit that a consistent approach to sustainability criteria across policy frameworks should be sought.

Eight respondents (20%) requested a credit or certification system for biomethane, bioCO<sub>2</sub>, biofuels, or low-carbon hydrogen. It was stated that such systems could deliver greenhouse gas emission savings without huge upheaval, as well as helping various sites wean themselves off fossil fuels and on to low-carbon alternatives.

## The Authority Response

We welcome the support of the majority of our respondents for implementing sustainability criteria for solid and gaseous biomass. Our aim is to implement criteria that are aligned to other UK policy areas, such as biomass sustainability policy in heat and power sectors.

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<sup>43</sup> Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast).

We recognise the importance of developing UK ETS sustainability criteria, as the criteria used in other UK policies are adapted to the specific sectors that they apply to. As a cross-sector policy, the UK ETS would therefore need its own sustainability criteria. We equally recognise the importance of aligning the UK ETS sustainability criteria, as far as possible, with the criteria used in other policy areas to ensure a unified approach to biomass across sectors and policies.

The UK ETS sustainability criteria are important to delivering effective decarbonisation, as they will financially incentivise operators to ensure that all forms (solid, liquid, and gaseous) of biomass combusted at UK ETS installations adhere to a common sustainability standard. Any unsustainable forms of biomass that fail to meet the criteria, therefore, should be exposed to a carbon price.

Having considered the diverse range of responses to our consultation we deem that there are impacts the Authority should assess further before sustainability criteria can be implemented. These impacts primarily concern the operational and financial consequences for UK ETS operators brought about by the implementation of sustainability criteria for gaseous and solid biomass fuels.

We acknowledge that many respondents wanted the UK ETS criteria to have parity with the other sustainability criteria used across the UK economy, and with the criteria currently used in the EU ETS to minimise any potential competitive disadvantages between UK and EU operators.

The Authority therefore intends to align the UK ETS sustainability criteria to the criteria currently used in REDII. This will align the UK ETS sustainability criteria with the sustainability criteria used in other UK policies, such as the RTFO and the Green Gas Support Scheme, meaning that there will already be some familiarity amongst relevant UK industry with the criteria we plan to implement.

While no changes to this policy area will be made at this stage, we aim to consult again on the full policy design for new UK ETS biomass sustainability criteria before the end of 2023. We are keen to give clarity to the market about our intentions to align the UK ETS sustainability criteria with criteria used in other UK policies, but equally wish to consult again before making a final decision on the policy design and details on how this would work in practice. Another consultation will enable us to better understand and consider the potential market impacts. We also wish to make operators aware that the earliest start date for the new criteria being in force would be 2025.

Several respondents requested a UK ETS-compatible biomethane certification scheme that would serve to exempt emissions from biomethane that meets certain sustainability standards. We acknowledge the role biomethane will have in delivering net zero. While there are other government support schemes for biomethane, we recognise how the UK ETS can support the development of low carbon technologies as part of a package of measures to deliver emissions reductions. We will explore the interactions between biomethane and the UK ETS and expect to set out further details in due course.

## 20MWth threshold and 3MWth aggregation threshold Call for Evidence

### Summary of Call for Evidence

The Authority asked for evidence as to whether the current 20MWth and 3MWth thresholds are causing adverse effects.

#### Questions

**102) Do you have data on the number, scale and/or emissions level of installations that are currently not monitored under the UK ETS because of the two thresholds? (Y/N) If so, please provide this where possible.**

**103) Do you have data regarding the abatement costs of installations paying the carbon price and those not (i.e., exempt, USE, HSE)? (Y/N) If so, please provide this where possible.**

**104) Do you have data regarding the compliance costs of installations and likely compliance costs of those outside of the UK ETS (i.e., exempt, USE, HSE)? (Y/N) If so, please provide this where possible.**

**105) Do you have evidence of distortion in relevant markets caused by the 20MWth threshold (e.g. in the form of smaller installations coming on to the market at an increasing rate)? (Y/N) If so, please provide this where possible.**

**106) Do you have evidence of adverse interactions of the current threshold level with other UK Government or devolved administration policies (e.g. with Carbon Price Support)? (Y/N)**

**107) Do you believe there is other evidence that should be taken into account when considering lowering the 20MWth threshold? (Y/N) If so, please provide this.**

**108) Do you believe that there is a case for lowering the 20MWth threshold to bring more operators of combustion units under the scope of the UK ETS? (Y/N) If so, please state why?**

**109) Do you have evidence of distortion in relevant markets caused by the 3MWth threshold for calculating total thermal input? (Y/N) If so, please provide this where possible.**

**110) Do you believe that there is a case for removing the 3MWth threshold to bring more operators of combustion units under the scope of the UK ETS? (Y/N) If so, please state why?**

**111) Do you believe the UK ETS is an appropriate policy to ensure the decarbonisation of small power generators in alignment with net zero? (Y/N) If yes, please say why. If no, what other policies do you think may be preferable?**

## Summary of Responses

We received responses from 62 organisations in response to the Call for Evidence. Respondents provided a significant amount of qualitative data and although an effort was made to contribute some quantitative data, this was largely lacking and limited to respondents in the power sector. Responses varied considerably across sectors, including those within scope and those outside of the scope of the UK ETS. The varied responses indicate that there is no consensus across industry as to whether the thresholds should be adjusted nor consensus on how the thresholds are impacting different sectors. In discussing and providing evidence on the existing thresholds, respondents commented on multiple other policy areas that might be affected by changes to the threshold. Respondents also offered helpful insights into potential data sources and other considerations which the Authority should take into account in its review of the thermal input thresholds.

It is clear the thresholds are impacting sectors covered by the UK ETS in varying ways and each sector's priorities are different and that differences also exist within sectors themselves. Respondents in the Mineral Products sector focused on the disproportionate burden the UK ETS places on asphalt plants where the compliance costs are reportedly 6925% greater than for a cement plant. Respondents in this sector also suggested that the Authority should give special consideration to production characteristics when considering threshold changes. Respondents across Mineral Products, Ceramics and Energy from Waste suggested that the input threshold should be replaced with an emissions-based threshold and that sectoral flexibility should be considered in which different thresholds apply to different sectors.

There was a considerable amount of disagreement among respondents in the Energy & Power sectors. Some argued that the best evidence that the 20MWth and 3MWth thresholds are causing fragmentation and market distortions can be found in Capacity Market auctions. Respondents provided evidence from auctions showing that most Capacity Agreements for gas plants competing in the <50MWth market are awarded to <8MWth installations, which offers the <8MWth installations a competitive advantage over larger installations participating in the UK ETS. Helpful quantitative evidence was provided by one respondent illustrating how varying thresholds might impact which plants are dispatched in UK power markets.

Counter evidence was submitted by other respondents operating in this sector, suggesting that although smaller gas generators have got a competitive advantage in the Capacity Market due to them not having to pay a carbon price, the impact may be small when compared to the relative volumes being produced. Furthermore, it was also argued that there might be benefits in having such smaller sites not participate in the UK ETS, such as for example, the ability of small gas generators to move to hydrogen power faster than larger generators and that they are able to provide electricity at a lower overall cost to the consumer.

Respondents operating in the Combined Heat & Power (CHP) and Heat Networks space acknowledge that if thresholds were to be lowered, a considerable number of CHPs and heat networks would be captured by the scheme. Respondents highlighted concerns over increased consumer costs if heat networks connected to EfW plants and CHPs are included in the UK ETS. Respondents suggested heat networks should be granted free allocation or receive an exemption under the UK ETS and that there is a risk of being put at a competitive disadvantage with EU counterparts. There was also concern around a lack of clear routes to decarbonisation. For example, respondents noted that CCS is the likely route for EfW and hydrogen and biofuels for CHPs but CCS and hydrogen still lack clear implementation strategies beyond the two industrial clusters and biofuels policy remains uncertain due to delay in the UK Government's publication of the Biomass Strategy. In addition, respondents noted that heat networks already have appropriate routes to decarbonisation in place such as through the Green Heat Networks Fund and Heat Networks Zoning.

Respondents in the Waste sector have suggested that a review of the thresholds might be necessary given that the UK ETS is aiming to integrate the sector by 2028. One respondent suggested that it is possible that if incinerators are included in the UK ETS under the existing 20MWth threshold, then fragmentation of future capacity is likely to occur and some – though a small number – of existing sites will fall under the threshold. Other possible distortions that could occur is if sites below the threshold combust waste with a higher fossil carbon intensity.

Meanwhile respondents in the Food and Drink, Agriculture and Chemicals sectors have suggested that operators with installations that would qualify for the UK ETS by virtue of a lower threshold should be given the option to opt-out of the scheme on the condition they participate in the Climate Change Agreements (CCA) scheme. CCAs, they argue, might be a better route to achieving greater energy efficiency and decarbonisation for small sites in this sector.

## The Authority Response

The Authority recognises that a revision of the 20MWth and 3MWth thresholds is a contentious issue and we acknowledge concerns around the impact potential alterations to the thresholds might have across industry. Based on the qualitative evidence submitted by respondents, the Authority is satisfied with its assumption that the existing combustion thresholds should be reviewed and that the impact of these thresholds across sectors are diverse and varied. However, the Authority also acknowledges that in some sectors, market distortions might be occurring because of other market dynamics of which the combustion thresholds might just be one factor.

The Authority believes that installations of the same nature which are operating in the same sector and competing in the same market should ultimately be paying the same price for their emissions. The Authority will therefore proceed with its review of the thresholds. This will include commissioning a study with external suppliers to gather more quantitative data on combustion plants falling below the thresholds. The data will be integral in producing an assessment of impacts of varying thresholds. While concerns over market distortions have primarily motivated the Authority's decision to launch a review of the thresholds, the Authority

also recognises that a review is required to address other broader policy questions and issues. This for example relates to the integration of the waste sector into the UK ETS<sup>44</sup> and whether the existing thresholds are appropriate for this sector.

Furthermore, the evidence gathered from respondents indicates that a review of the combustion thresholds will have interacting elements with many other policy areas, such as a review of the HSE simplified permitting and Ultra-Small Emitters opt-out schemes and the on-going Government review of CCAs.

We also acknowledge the desire from industry for the Authority to gather more quantitative data and to improve the evidence base around market distortions being caused by the existing thresholds. Based on the evidence gathered under this consultation, the Authority is not minded to proceed with formulating policy proposals. The Authority recognises that the current evidence base is inadequate and acknowledges the risks and challenges facing business across industry if the thresholds are changed in the absence of sufficient evidence and consultation with industry. If any changes to the thresholds are considered, the Authority will proceed with another public consultation and will give industry sufficient notice ahead of any changes to the thresholds.

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<sup>44</sup> See pp. 114-131

# Chapter 6: Expanding the UK ETS to new sectors

This chapter covers proposals set out in Chapter 7 of the consultation.

The Authority will expand the UK ETS to domestic maritime based on vessel activity. We intend for this expansion to be implemented from 2026 and are minded to apply the scheme to vessels over 5000 Gross Tonnage (GT) as outlined within the consultation. We intend to apply the scheme to the entity responsible for a vessel's compliance with the International Safety Management (ISM) Code, and to exempt Government non-commercial activity.

We intend that the Monitoring, Reporting and Verification (MRV) requirements will generally continue per existing processes to ensure continuity where possible for those vessels already experienced in complying with MRV regulations.

We will look to set out additional detail and aim to consult on key aspects of the scheme including implementation, decarbonisation and distributional impacts, and MRV requirements and processes, later in 2023.

The Authority intend to include Energy from Waste (EfW) and waste incineration in the UK ETS from 2028. We aim to consult on the implications of this position by the end of 2023. The Authority intend to include advanced thermal treatment (ATT), advanced conversion technology (ACT) and other related advanced waste technologies (including waste-to-fuel facilities) in the UK ETS. The Authority intends to place the point of obligation for MRV under the UK ETS on the operators of waste incineration and EfW facilities.

We intend to consult further on more detailed proposals for MRV.

We intend to implement a two-year phasing period from 2026-2028, before full cost exposure.

We will adjust the cap to take account of the addition of EfW and waste incineration/maritime to the UK ETS. Any increase to the cap will retain the same ambition in terms of required emissions reductions as the proposed Net Zero (NZ) cap for the current traded sector, and the cap will still reduce in line with the NZ Strategy's sectoral emissions trajectories.

## Expanding the UK ETS to Domestic Maritime

In the Developing the UK ETS consultation, we consulted on expanding the UK ETS to include emissions from domestic maritime. This followed a commitment to explore expanding carbon

pricing in the Government Response to the ‘Future of UK Carbon Pricing’<sup>45</sup>, and also a commitment to exploring expanding the UK ETS to uncovered sectors in the UK Government’s Net Zero Strategy<sup>46</sup>.

We outlined that UK ETS inclusion could overcome a key barrier to decarbonising the sector, which is that the prices of maritime fuels do not currently reflect their environmental costs. UK ETS inclusion could strengthen the incentive to adopt low carbon fuels, and support deployment of fuel-efficient technologies and the introduction of more efficient operating practices.

We set out three options for expanding the UK ETS to include emissions from domestic maritime. Through the consultation, we sought views on these proposed options for inclusion; monitoring, reporting and verification (MRV) of emissions; scope of the scheme; as well as decarbonisation and distributional impacts. Alongside the consultation, the Authority sought the views of the Climate Change Committee (CCC) on our proposals for developing the UK ETS. The CCC provided their response on 11 October 2022<sup>47</sup>.

In this section, we outline that we will expand the UK ETS to include emissions from domestic maritime. We are minded to apply the scheme on an activity basis, to vessels of 5000GT and above travelling on domestic routes. We intend to apply the scheme to the entity responsible for a vessel’s compliance with the International Safety Management (ISM) Code, and to exempt Government non-commercial activity. We aim to consult again on the implementation of the UK ETS for domestic maritime later in 2023.

## Implementation Option

### Summary of Proposals

In the consultation, the Authority outlined a lead option for expanding the UK ETS to include domestic maritime which was based on vessel activity. This would require maritime participants to monitor their emissions from eligible journeys, report their emissions from these journeys and surrender sufficient allowances to cover their emissions. We stated that this lead option would apply to domestic journeys only, which would be defined as a journey starting and finishing at a port located in the UK. This lead option would also place the obligation to comply with the UK ETS on either the vessel operator or the vessel owner. The Authority also invited views on the specific point of obligation, that is whether the requirement to report vessel emissions and surrender the requisite UK ETS allowances should be applied to ship owners or ship operators, for example.

We also sought views on two alternative options. First, a fuel supplied approach, which would see the UK ETS obligation placed on maritime fuel suppliers who would be required to monitor,

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<sup>45</sup> <https://www.gov.uk/government/consultations/the-future-of-uk-carbon-pricing>

<sup>46</sup> <https://www.gov.uk/government/publications/net-zero-strategy>

<sup>47</sup> Climate Change Committee. (2022) Letter: Development of the UK Emissions Trading Scheme (UK ETS) Available at <https://www.theccc.org.uk/publication/letter-development-of-the-uk-emissions-trading-scheme-uk-ets/> Letter from Lord Deben, Chairman of the Climate Change Committee, to Graham Stuart MP, Minister of State at the Department for Business, Energy and Industrial Strategy, copying in the portfolio Ministers of the devolved governments, October 2022, London.

report, and verify emissions arising from their fuel sales, and surrender allowances to cover this. The second alternative option was a hybrid approach and would see some vessels obligated based on activity, and others covered by the fuel supplied approach.

The Authority proposed vessel activity as the lead option because we deemed that there was a lower risk of manipulating or avoiding the system ('gaming'), something we asked about as part of the consultation. We also judged it was more environmentally robust than the fuel supplied option and simpler than the hybrid option.

## Questions

**Q113) Do you agree that our lead option to extend emissions trading to domestic maritime based on vessel activity is the most appropriate? (Y/N) Please explain your answer considering:**

- Whether you agree with the proposed definition of a domestic journey, and whether this creates any loopholes which need to be addressed.
- Whether the scheme should be applied to ship owners or ship operators.

**Q116) How high do you consider the risk of gaming/non-compliance to be under the lead option? In your answer, please consider:**

- How could it be designed out of the system.
- Whether the risk is lower under either of the alternative options.

**Q118) Do you prefer one of the alternative options? (Y/N) Please explain your answer. It would be particularly helpful to understand:**

- For the fuel supplied approach, whether Monitoring, Reporting and Verification (MRV) requirements are possible and practical within existing processes and data collection.
- For the hybrid approach, how the split between the two approaches would be determined, and how a mechanism to avoid 'double charging' of emissions could be designed.

## Summary of Responses

We received 28 responses to question 113 with 23 respondents (82%) supporting the vessel activity approach. Five respondents (18%) disagreed with the approach, but of these, three (11%) supported inclusion on a vessel activity basis but wanted to see the inclusion of international journeys as well.

We asked for further detail on answers to question 113 and 24 respondents provided this.

## Definition of a domestic journey

Four responses (14%) mentioned that the proposed definition may not account for journeys to offshore locations which often return to the same port. Three responses (11%) supported the inclusion of ‘one-port’ journeys and suggested that the definition should be amended to ensure this. One response (4%) also mentioned that the consultation was not explicit on whether the scheme would include emissions at berth or at anchor.

We did not ask a question on inclusion of international journeys, however, this was mentioned in several responses. Eight respondents (29%) mentioned coverage of journeys between the UK and EEA or all international journeys. Of these, seven (25%) were supportive of some forms of international coverage. In addition to this, six respondents (21%) called for the UK to ensure alignment with EU ETS Maritime proposals, particularly on coverage of international journeys. This is discussed in further detail below.

## Point of Obligation

Three respondents (11%) expressed support for a point of obligation applied to vessel owners. Four respondents (14%) expressed support for a point of obligation applied to vessel operators, with two (7%) of these respondents highlighting the responsibility of the operator for decisions affecting vessel emissions, and two (7%) of these respondents anticipating that this would lead to increased demand for more efficient vessels.

Eight respondents (29%) called for a point of obligation applied to either the vessel owner or manager, or to the party responsible for the compliance of the vessel with the International Management Code for the Safe Operation of Ships and for Pollution Prevention (the ISM Code)<sup>48</sup>. Six (21%) of these respondents called for the scheme to include a mechanism to enable the obligated party to recover from the commercial operator the costs of compliance with the UK ETS, in cases where those two parties are different.

## Gaming or non-compliance

Question 116 asked about the risk of gaming or non-compliance with the scheme under the lead option, and we received 14 responses. Six respondents (43%) perceived that this risk was low. Four respondents (29%) considered this risk to be low due to the proposed expansion of the EU ETS to include domestic maritime, and two (14%) suggested the risk would be low with robust data verification.

Six respondents (43%) considered that a threshold of 5000GT could increase the risk of gaming due to ‘rule-beater’ vessels: vessels designed to be just under a compliance threshold to avoid being captured by legislation. Three responses (21%) were concerned about the risk of gaming routes to avoid the definition of an applicable domestic journey. Several responses

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<sup>48</sup> The ISM Code was adopted by the IMO with the purpose of providing a mandatory, international standard for the safe management and operation of ships and for pollution prevention. The Code requires the owner of the ship, or any other party who has assumed the responsibility for operation of the ship and for compliance with the Code, to put in place a mandatory Safety Management System for that ship to ensure compliance with the duties imposed by the Code.

also mentioned that the risk of gaming was significantly higher under a fuel-supplied approach. There were also calls to engage further to understand and mitigate the risks, particularly looking at past routes to highlight the risk of rerouting or making a stop off in other countries to avoid making a journey which is eligible for the UK ETS.

## Preference for alternative options

Question 118 covered this topic, and we received 19 responses. Of these, 18 respondents (95%) stated they did not prefer one of the alternative options. Sixteen respondents (84%) provided further detail on their reasoning.

Ten respondents (53%) cited increased risk of gaming or non-compliance under alternative approaches and three (16%) mentioned increased risk of carbon leakage. In addition, eight (42%) cited impracticality for operators and three respondents (16%) mentioned lower emissions coverage as a reason for not supporting one of the alternative options.

Two (11%) further responses did not express a preference for either of the alternative options but stated that the hybrid approach could even extend coverage to vessels of under 400GT on a fuel supplied basis, as the risk of purchasing fuel overseas was very low for these smaller vessel types.

## The Authority Response

The Authority has considered the consultation responses. It is clear that inclusion of domestic maritime within the UK ETS is supported by stakeholders and that the vessel activity approach has wide support and is preferred over the two alternative options. These views were shared by participants from trade associations, NGOs, energy suppliers and industry. For this reason, the Authority will expand the UK ETS to domestic maritime based on vessel activity. We intend for this expansion to be implemented from 2026 which is the start of the second half of the first phase of the UK ETS and will provide the sector with opportunity to prepare for the scheme.

We will adjust the cap to take account of new sectors being added to the UK ETS in a way consistent with delivering net zero, our Carbon Budgets and other climate targets, such as our Nationally Determined Contributions (NDC). Given how cap and trade schemes work, this adjustment would add allowances to the total cap for the UK ETS and would not be specifically for the maritime sector; the sectors that the emissions actually occur in is determined by the market. Our current estimates for emissions to be included from domestic maritime in the first year of inclusion in the UK ETS (2026) would be equivalent to around 2 million UK allowances, with decreasing amounts each year for the remainder of the phase, as consistent with delivering the above targets. Before making a final policy decision, we will take into account relevant updates to assessments of the pace of emissions reductions needed across different parts of the economy to deliver UK economy-wide climate targets since the publication of the Net Zero Strategy, along with relevant updates to the sector's decarbonisation pathway, including for example the update to the Clean Maritime Plan. We will also obtain CCC advice and aim to consult on this basis later in 2023 and we will outline the final decision after taking these responses into consideration.

The Authority also acknowledges the responses received on the topic of non-compliance and gaming the system. We will set out further detail and aim to consult on how we will address this, including mechanisms to enforce compliance later in 2023.

## Definition of a domestic journey

We considered the information received on the definition of a domestic journey, and we confirm that under the UK ETS this definition will include those journeys which start and end at the same port in the UK, as well as those going from one UK port to another UK port. We also recognise stakeholder feedback regarding the inclusion of emissions at berth or at anchor, and the beneficial impact this would have on encouraging the uptake of shore power, as one element of a wider approach to the decarbonisation of UK ports. We are minded to include both emissions at sea and at berth in UK ports or at anchor within the scope of the UK ETS. We will aim to consult fully on a comprehensive definition of an eligible domestic journey later in 2023.

The Authority recognises responses received about inclusion of international journeys in the UK ETS, particularly to ensure alignment with any schemes introduced by other jurisdictions. Given the importance of achieving a globally applicable policy measure to reduce emissions from international shipping, we fully support the work of the International Maritime Organization (IMO) to achieve this and are focusing our efforts there. We will continue to monitor developments of international schemes, including those from other jurisdictions, and set out further information accordingly.

The Authority is aware that the EU intends to expand the EU ETS to include maritime emissions, including coverage of journeys which start or end outside the EU. We understand their proposal may mean vessels travelling between the Republic of Ireland and the United Kingdom would be subject to 50% emissions coverage under the EU ETS<sup>49</sup>. UK ETS expansion to domestic maritime could create a potential discrepancy in emissions coverage on routes between the Republic of Ireland and Great Britain, and Northern Ireland and Great Britain. This discrepancy was also highlighted through the consultation process and is detailed in the summary of responses to question 123.

We intend to reduce the UK ETS obligations to which vessels travelling between Northern Ireland and Great Britain are subject, in order to ensure equivalence of carbon pricing obligation on routes between the Republic of Ireland and Great Britain, and Northern Ireland and Great Britain. This would mean that vessels' emissions are only subject to 50% of their carbon pricing obligation under the UK ETS, to deliver equivalent treatment to vessels travelling between the Republic of Ireland and Great Britain. This position is subject to the outcome of further consultation, including on the mechanisms which could be used to ensure equivalence, which we aim to consult on later in 2023.

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<sup>49</sup> DIRECTIVE (EU) 2023/959 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 10 May 2023 amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32023L0959&qid=1684312437556>

## Point of Obligation

The Authority intends to apply the point of obligation to the vessel owner, or to whichever party has assumed responsibility for the operation of the vessel and the duties imposed by the ISM Code.

The Authority considers this approach to be compatible with most responses to the consultation. Firstly, it will mean that, where applicable, the party with the existing responsibility for compliance with the MRV requirements will retain this responsibility for the purposes of the UK ETS. Secondly, this approach will align responsibility for compliance with the UK ETS with that of relevant International Maritime Organization (IMO) regulations, such as the Fuel Oil Consumption Data Collection System (DCS).

The Authority also recognises that the party bearing responsibility for compliance with the ISM Code is not in all cases the party responsible for the decisions affecting the greenhouse gas emissions of the vessel (e.g. choice of fuel, route, cargo, and speed). In recognition of the feedback received, to respect the polluter pays principle, and to incentivise both more efficient operation and the use of more efficient vessels, the Authority intends to explore the ability of the obligated party to recover compliance costs from the commercial operator and aims to consult on this later in 2023.

## Scope of the Policy

### Summary of Proposals

In the consultation, the Authority proposed that the UK ETS will apply to vessels over 5000GT. This is because there are already UK MRV regulations<sup>50</sup> which apply to vessels undertaking certain activities and operating on certain routes if they are over this threshold. This would have the benefit of capturing the largest vessels whose operators may be experienced and already equipped for collecting and reporting emissions data for MRV purposes.

Furthermore, the Authority stated that we do not intend for Government non-commercial maritime activity to be in scope of the scheme following the approach normally taken under the Merchant Shipping Act 1995<sup>51</sup>. We also sought views on whether there should be any other exemptions to applying emissions trading to domestic maritime.

### Questions

**Q114) Do you agree with the proposed threshold for the lead option of 5000GT? (Y/N)**  
**Please explain your answer considering:**

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<sup>50</sup> From 1 January 2018, large ships calling at an EU/EEA port were subject to the EU MRV regime. The EU regulation which established the European regime (Regulation (EU) 2015/757) was supplemented in UK domestic law by the Merchant Shipping (Monitoring, Reporting and Verification of Carbon Dioxide Emissions) and the Port State Control (Amendment) Regulations 2017 (SI 2017/825) and retained under the EU (Withdrawal) Act 2018, subject to amendments needed to make it operable in a UK-only context.

<sup>51</sup> Merchant Shipping Act 1995 - <https://www.legislation.gov.uk/ukpga/1995/21/contents>

- Whether there be a de minimis threshold within this, based on emissions or number of journeys, for example.
- What other thresholds could be used instead, or in the future.

**Q117) Do you think there should be any specific exemptions to applying emissions trading to domestic maritime? (Y/N) Please explain your answer including what, if any, exemptions there should be.**

## Summary of Responses

Of the 20 responses received for question 114, nine respondents (45%) agreed with the proposed threshold of 5000GT for the lead option. Five respondents (25%) agreed because 5000GT is the existing threshold for UK MRV, EU MRV and IMO DCS. Three respondents (15%) thought this higher threshold would avoid administrative burden for smaller vessels. Two respondents (10%) supported 5000GT as an initial threshold to be lowered in the future.

Ten respondents (50%) did not agree with the proposed threshold of 5000GT. Eight respondents (40%) thought that a lower threshold would lead to greater vessel and emissions coverage. Six respondents (30%) favoured a 400GT threshold. Six respondents (30%) anticipated potential future changes to the IMO DCS, or to EU MRV upon expansion of the EU ETS to the maritime sector, and that a lower threshold would align with future changes. Five respondents (25%) highlighted a risk of gaming the system with a 5000GT threshold.

Of the 20 responses received for question 117, eight respondents (40%) considered that there should be no exemptions, except for those proposed within the consultation. Four respondents (20%) called for exemptions, these included the following sectors or organisations:

- Lifeline services to island communities
- Fishing sector
- National Health Service
- Royal National Lifeboat Institution
- Dredging

There were also calls from two respondents (10%) each for the exemption of vessels with under 130kW installed power and vessels conducting negative emissions activity or carbon capture.

## The Authority Response

Based on stakeholder feedback, the Authority is minded to apply the UK ETS to vessels over 5000GT as outlined within the consultation. We consider this threshold to be most appropriate given that it aligns with the threshold used for the existing UK MRV regulations. This means

that many vessels over this threshold are already equipped for collecting and reporting emissions data, which will potentially result in a simpler transition into the scheme for many operators. This threshold also has the benefit of avoiding administrative burden for smaller vessels and lighter craft, which was a key theme in the consultation responses received.

Figure 7 estimates the greenhouse gas emissions from UK domestic maritime in 2019 for vessels of 5000GT and above, and the proportion of the total greenhouse gas emissions from UK domestic maritime that this represented. It also compares these estimates with the equivalent estimates for vessels over 400GT and above. We acknowledge that half of respondents called for a lower threshold than 5000GT to capture smaller vessels, with some stakeholders explicitly stating 400GT as preferable. Recognising this desire for a lower threshold, we will keep the threshold under review, to better understand the impacts of lowering the threshold on operators.

The Authority intends to exempt Government non-commercial maritime activity following the approach normally taken under the Merchant Shipping Act 1995. However, these vessels are still obligated to decarbonise their operations in line with the UK's net zero commitments. For instance, the Ministry of Defence published a Climate Change and Sustainability Strategic Approach that sets out the ambition, principles and methods needed for UK Defence to meet the challenge of climate change, in line with the UK's net zero commitments. We aim to consult and set out additional detail on this later in 2023.

**Figure 7: Estimated greenhouse gas (GHG) emissions from UK domestic maritime in 2019<sup>52</sup>**

	Estimated GHG emissions <sup>53</sup>	% of total UK domestic maritime GHG emissions
<b>Vessels of 5000GT and above</b>	2.4 MtCO <sub>2</sub> e	39%
<b>Vessels of 400GT and above</b>	4.6 MtCO <sub>2</sub> e	76%

## Monitoring, Reporting and Verification (MRV)

### Summary of Proposals

In the consultation we proposed that emissions would be calculated based on the volume of fuel used multiplied by the carbon intensity of that fuel, as follows:

<sup>52</sup> Department for Energy Security Net Zero (DESNZ) analysis of National Atmospheric Emissions Inventory (NAEI) data, 2022. Further details on the NAEI shipping emissions inventory can be found in [https://naei.beis.gov.uk/reports/reports?report\\_id=950](https://naei.beis.gov.uk/reports/reports?report_id=950). Where gross tonnage was not recorded in the data for coastal shipping and fishing vessels underpinning the NAEI shipping emission inventory, Ricardo Energy & Environment have estimated this based on overall vessel length.

<sup>53</sup> As a simplifying assumption, these estimates assume that all inland waterways and leisure craft are below 400GT. This has been necessary due to the limitations of the available evidence on the gross tonnage of these vessels. We would welcome any data on this that could enable these estimates to be improved.

*Amount of greenhouse gas emissions for which liable = volume of fuel used on a qualifying journey x carbon intensity of fuel type (the amount of CO<sub>2</sub>e by weight emitted per unit of maritime fuel used)*

We proposed that the UK Government greenhouse gas reporting conversion factors<sup>54</sup> would inform the carbon intensity, recognising that there may be a need to reflect current marine fuel blends or new fuels, and we were keen to seek views on this.

We were also keen to understand whether MRV proposals, particularly those outlined under the lead option of an activity-based approach, would be possible and practical within existing processes. Specifically, we outlined that there was already legislation in place (UK MRV) for the MRV of CO<sub>2</sub> emissions from ships. This was applicable to vessels of over 5000GT undertaking certain activities and operating on certain routes.

We noted that the current approach to the reporting of emissions might need to be revised to meet the requirements of this proposal, including the applicable vessel types, thresholds, and routes.

## Questions

**Q112) Do you agree with our proposal for calculating emissions, based on volume of fuel multiplied by the carbon intensity as per the most recent UK Government greenhouse gas reporting conversion factors? (Y/N) Please explain your answer considering:**

- **Whether additional marine fuels need conversion factors developed**
- **What consideration needs to be given to blended fuels, or renewable and partly renewable fuels.**

**Q115) Would applying MRV requirements on an activity basis be possible and practical within existing processes and data collection? (Y/N) Please explain your answer considering whether additional processes would be required to identify domestic journeys.**

## Summary of Responses

Of the 32 responses received to question 112, 28 responses (88%) were in favour of the proposed approach.

Seventeen respondents (53%) cited a need to develop conversion factors for additional marine fuels. Seven respondents (22%) called for international alignment around conversion factors used by the IMO, while five (16%) other respondents supported the use of the Renewable

<sup>54</sup> See the latest UK government conversion factors and methodology document <https://www.gov.uk/measuring-and-reporting-environmental-impacts-guidance-for-businesses>

Transport Fuel Obligation (RFTO) methodology<sup>55</sup>. On conversion factors for blended, renewable, and partly renewable fuels, three respondents (9%) called for considerations of origin and sustainability.

For question 115, 14 (70%) of the 20 respondents agreed that applying MRV requirements on an activity basis would be possible and practical within existing processes and data collection. Nine respondents (45%) expressed confidence in the practicability of MRV based on the existing or historic compliance of the relevant operators with UK and/or EU MRV.

Concerns about the MRV requirement related mostly to administrative burden. Three respondents (15%) stated that the separation of domestic journey emissions would incur a significant administrative burden, and two respondents (10%) expressed particular concern for operators of smaller vessels.

There were also sub-sector specific concerns about the practicability of MRV for offshore service vessels from three respondents (15%), and for dredging vessels from two respondents (10%).

## **The Authority Response**

The Authority welcomes the helpful responses to the consultation. It is useful to hear that most respondents consider MRV requirements for the UK ETS to be practical under existing processes but we also acknowledge the concerns raised.

The Authority intends that the MRV requirements will generally continue as per existing processes to ensure continuity where possible for those vessels already experienced in complying with MRV regulations. We have judged that there is sufficient time prior to implementation for vessels of a type not currently subject to MRV regulations, such as offshore service vessels, to make the necessary preparations to comply with MRV obligations under the UK ETS. We aim to consult and will set out additional detail on MRV processes later in 2023.

## **Decarbonisation and Distributional Impacts**

### **Summary of Proposals**

In the consultation, the Authority stated that decarbonising domestic transport is a key step in achieving our national commitments to net zero. We noted that one of the key barriers to decarbonising shipping activity is that the price of fuel does not currently reflect its environmental impact.

Drawing on previous research<sup>56</sup>, we highlighted the effective contribution a carbon price could make in encouraging investment in low carbon alternatives in the maritime sector. However, we also recognised the additional barriers to decarbonisation faced by the sector, requiring a

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<sup>55</sup> Under the Renewable Transport Fuel Obligation (RTFO), suppliers of transport biofuels in the UK must be able to show that a percentage of that fuel comes from renewable and sustainable sources.

<sup>56</sup> Completed for the 2019 Clean Maritime Plan - <https://www.gov.uk/government/publications/clean-maritime-plan-maritime-2050-environment-route-map>

broader package of interventions by the UK Government. We endeavoured to keep these under review.

The Authority sought views on how the UK ETS could impact decarbonisation across the domestic maritime sector. We asked for opinions on other possible barriers to decarbonisation, and particularly how this might differ across the range of sector participants. We also sought views on how the UK ETS might interact with other existing or planned policies in the maritime sector.

We emphasised our commitment to ensure that this policy does not unduly impact some parts of society over others, noting the varied nature of shipping services ranging from cargo and passenger transportation; to provision of other services such as offshore wind turbines; amongst other activities.

We sought views on how different stakeholders in the sector might be impacted by the policy, placing a particular focus on ferry services in the UK. We also sought input from stakeholders to understand the diversity of impacts the scheme may have on small, medium, and large enterprises, as well as how these impacts might be felt regionally.

## **Questions**

**Q119) Do you consider that providing carbon pricing will drive decarbonisation in the domestic maritime sector as outlined above? (Y/N) Please explain your answer.**

**Q120) Besides carbon not being fully priced into the market, what other market failures and barriers are present and what policies would be needed to support the UK ETS in decarbonising domestic maritime? In your answer, please consider how this may change over time.**

**Q121) How might the UK ETS interact with existing and planned policies in the maritime sector, including any relevant non-decarbonisation policies?**

**Q122) How would application of the UK ETS to the domestic maritime sector impact participants (including ship owners, ship operators, fuel suppliers) and consumers? In your response, please provide evidence where possible and consider:**

- **Small and medium size operators**
- **Island communities**
- **Competitiveness impacts and carbon leakage risks**
- **Decarbonisation impact for different vessel types and maritime sub-sectors**

**Q123) Have you identified any other impacts, distributional or otherwise, arising from this proposal, which have not been captured by other questions? (Y/N) Please explain your answer, including how any concerns could be addressed.**

## Summary of Responses

Of the 25 respondents to question 119, 18 (72%) agreed that carbon pricing would, to a greater or lesser extent, drive decarbonisation of the domestic maritime sector. Five respondents (20%) anticipated improvements in the operational efficiency of vessels.

However, many who responded positively did so with significant caveats. Eight responses (32%) called for recycling of revenues to support the decarbonisation of the domestic maritime sector. Six responses (24%) stated that decarbonisation potential remains limited until cleaner fuels/technologies become more available at competitive prices. Five responses (20%) stated that the decarbonisation potential remains limited due to the cost or engineering limitations of retrofitting existing vessels.

Additionally, in their response to proposals in this consultation, the CCC noted the potential impact that the policy could have on decarbonisation, stating ‘there is a strong case to include domestic shipping in the UK ETS, given the current weak incentives to decarbonise the sector’<sup>57</sup>.

There were 21 responses to question 120. Some stakeholders commented on market failures and barriers to decarbonisation. Ten respondents (48%) cited the lack of availability of cleaner fuels/technologies. Eleven respondents (52%) cited the cost of adopting cleaner fuels/technologies.

We also received responses regarding other policies to support decarbonisation. Thirteen respondents (62%) called for the development, demonstration, and scaling of cleaner fuels/technologies. Four respondents (19%) called for port-side preparedness (e.g. ensuring necessary infrastructure is in place across ports). Four respondents (19%) called for financial support for first movers.

We received 17 responses to question 121. Ten responses (59%) support alignment with the IMO and/or a review of the application of the UK ETS upon the introduction by the IMO of a market-based mechanism. These respondents suggested this would ensure there is a level playing field with no unnecessary complexity to reporting requirements or double counting of emissions.

Three respondents (18%) noted that international emissions should be included in order for the UK to meet its NDC under the Paris Agreement or the Clydebank Declaration for Green Shipping Corridors.

We received 18 responses to question 122. On the impact of the UK ETS on operating costs for participants, four respondents (22%) (three non-government organisations and one large business) stated that any increase was unlikely to be significant.

Four respondents (22%) cited a negative impact on competitiveness for those transporting mineral products within the UK, as opposed to entering them into the UK from abroad. Three

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<sup>57</sup> Ibid. Climate Change Committee. (2022) Letter: Development of the UK Emissions Trading Scheme (UK ETS).

respondents (17%) from non-governmental organisations stated that studies show minimal impact on competitiveness.

Some respondents stated concerns for smaller operators, such as increased costs and administrative burden, as well as noting their lesser capital to fund decarbonisation and their exposure to potential carbon price volatility. Similarly, two respondents (11%) stated that vessels operating coastal trades are older, with fewer abatement options and smaller margins.

Finally, we received 16 responses from stakeholders to question 123, which asked more generally about any additional impacts of the policy. Seven respondents (44%) expressed concern about modal shift arising from the implementation of the UK ETS to domestic maritime (for e.g. to road or rail transport), and this leading to potentially greater total emissions. Three (19%) of these respondents noted that these modes of transport are not set to be included in the UK ETS as part of the current scope expansion proposals.

One respondent (6%) highlighted a risk of re-routing of roll on roll off vessels via Republic of Ireland, and one (6%) called for the undertaking of an impact assessment due to the reliance on sea freight to move goods between Great Britain and Northern Ireland.

Two respondents (13%) expressed concern for the passthrough of compliance costs to consumers, and two respondents (13%) cited increased costs for lifeline ferry services for island communities. Three (19%) other respondents stated that, as the carbon price is within the spread of fuel prices, the impact on consumers ought to be minimal.

## The Authority Response

The Authority continues to see inclusion of domestic maritime in the UK ETS as an effective driver for decarbonisation of the sector.

Research commissioned by the Department for Transport<sup>58</sup> has confirmed that the current price of conventional marine fuel does not accurately reflect its environmental cost and that this market failure is among the highest impact risks to the goal of decarbonisation. This research<sup>59</sup> indicates that a price signal would be a highly effective driver for change in the domestic maritime sector. Other recent studies<sup>60</sup> also note the important contribution carbon pricing and

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<sup>58</sup> Frontier Economics, UMAS, E4tech and CE Delft (2019) *Reducing the Maritime Sector's Contribution to Climate Change and Air Pollution: Identification of Market Failures and other Barriers to the Commercial Deployment of Emission Reduction Options*. A Report for the Department for Transport. Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/815671/identification-market-failures-other-barriers-of-commercial-deployment-of-emission-reduction-options.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/815671/identification-market-failures-other-barriers-of-commercial-deployment-of-emission-reduction-options.pdf).

<sup>59</sup> Frontier Economics, UMAS, CE Delft and E4tech (2019) *Reducing the Maritime Sector's Contribution to Climate Change and Air Pollution: Scenario Analysis: Take-up of Emissions Reduction Options and their Impacts on Emissions and Costs*. A Report for the Department for Transport. Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/816018/scenario-analysis-take-up-of-emissions-reduction-options-impacts-on-emissions-costs.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/816018/scenario-analysis-take-up-of-emissions-reduction-options-impacts-on-emissions-costs.pdf)

<sup>60</sup> See Baresic, D., Rojon, I., Shaw, A., Rehmatulla, N. (2022) *Closing the Gap: An Overview of the Policy Options to Close the Competitiveness Gap and Enable an Equitable Zero-Emission Fuel Transition in Shipping*. Prepared by UMAS, January 2022, London - Available at [https://www.globalmaritimeforum.org/content/2021/12/Closing-the-Gap\\_Getting-to-Zero-Coalition-report.pdf](https://www.globalmaritimeforum.org/content/2021/12/Closing-the-Gap_Getting-to-Zero-Coalition-report.pdf) and, Marine Capital, Lloyd's Register, UMAS. (2022) *UK Domestic Shipping Mobilising Investment in Net Zero*. A study co-sponsored by the Maritime and Coastguard Authority, November 2022, London – Available at [https://maritime.lrc.org/l/941163/2022-11-30/5yv5t/941163/1669801621zvSdKYcO/UK\\_Domestic\\_Shipping\\_Mobilising\\_Investment\\_in\\_Net\\_Zero.pdf](https://maritime.lrc.org/l/941163/2022-11-30/5yv5t/941163/1669801621zvSdKYcO/UK_Domestic_Shipping_Mobilising_Investment_in_Net_Zero.pdf)

market-based measures could make in bridging the gap between conventional technologies and zero-emission alternatives.

The Authority received input on the additional and varied barriers to decarbonisation. We recognise that the UK ETS represents one part of a wider policy mix necessary to tackle maritime decarbonisation. The Department for Transport held a recent consultation on Plotting the Course to Net Zero<sup>61</sup> which aimed to explore with stakeholders the options for addressing these barriers. This consultation closed in October 2022, and responses to this will inform the updated Clean Maritime Plan, to be published in 2023. The Authority will continue to work across Governments and with stakeholders to ensure a coordinated, system wide methodology towards maritime decarbonisation, of which the UK ETS would form a crucial part.

We acknowledge the useful feedback we received to our open question on distributional policy impacts. We have noted the wide ranging and diverse nature of these responses and that, at times, there was disagreement between respondents, particularly on the impact to business competitiveness across the sector. The Authority will continue to monitor the impact of the policy on competitiveness within the sector along with other potential impacts that could be felt across the broad range of industries within domestic maritime.

We recognise concerns raised about the impact the policy may have on vessels undertaking certain crucial activities and will continue to examine this, along with other possible consumer impacts, throughout our policy development. We are committed to ensuring that the policy does not result in parts of society, or particular regions of the UK, being unduly affected and that the varied nature of the maritime industries are considered.

We are also grateful for evidence supplied on carbon leakage and modal shift. We will consider this as we develop the policy further and aim to set out additional details in further consultation later in 2023.

## Reducing emissions from waste – a Call for Evidence on expanding the UK ETS to include waste incineration and energy from waste

In the Developing the UK ETS consultation, we published a Call for Evidence on expanding the UK ETS to the waste sector. Specifically, we proposed including EfW and waste incineration with no energy recovery. This followed commitments in the Government Response to the 'Future of UK Carbon Pricing'<sup>62</sup> to explore expanding carbon pricing, and in the UK Government's Net Zero Strategy, to explore expanding the UK ETS to uncovered sectors, as well as the Climate Change Committee's (CCC) 2021 progress report which stressed that

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<sup>61</sup> <https://www.gov.uk/government/consultations/domestic-maritime-decarbonisation-the-course-to-net-zero-emissions>

<sup>62</sup> <https://www.gov.uk/government/consultations/the-future-of-uk-carbon-pricing>

Government needed to “address with urgency the rising emissions from, and use of, Energy from Waste”<sup>63</sup>.

We set out how the UK ETS could help reduce emissions from waste. This included encouraging residual waste to be recovered in a way that lowers carbon emissions, as well as providing incentives to invest in processes and technologies which remove fossil plastic in the residual waste stream, and CCS.

The Call for Evidence covered the timing and scope for expansion, how emissions might be measured, and the potential impacts of the policy.

## Timing

### Summary of Call for Evidence

In the Call for Evidence, we proposed exploring expansion of the UK ETS to waste incineration and EfW by the mid-to-late 2020s. This was on the basis that this would align with wider reforms to resources and waste policies later this decade and would help to achieve the UK Government’s target to halve residual waste arisings (excluding major mineral wastes) on a kilogramme per capita basis by 2042 from 2019 levels<sup>64</sup>, the Welsh Government’s Beyond Recycling target for zero residual non-recycled waste by 2050<sup>65</sup>, Scottish Government’s target to reduce waste arisings by 15% and recycle 70% of all waste generated against 2011 levels by 2025<sup>66</sup>, and the Northern Ireland Executive’s ongoing work to reduce waste arisings and move resources further up the waste hierarchy.

### Questions

**124) Do you agree with the proposed timing for when waste incineration and EfW could be introduced into the UK ETS? (Y/N)**

**125) For operators of waste incinerators, EfW plants, and local authorities (LAs), please outline the steps that you will need to take, and the time required to prepare for the expansion of the UK ETS to waste incineration and EfW.**

### Summary of Responses

There were 63 responses to question 124, of which 25 respondents (40%) agreed with the proposed timing for including EfW and waste incineration in the UK ETS. There were 112 respondents who commented with their views on the question, some of whom called for a more specific timing proposal, with 10 (9%) calling for implementation to be before 2028, 18 (16%) saying it should be during 2028, and nine (8%) after 2028. Respondents also highlighted

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<sup>63</sup> The Climate Change Committee Progress Report to Parliament 2021

<https://www.theccc.org.uk/publication/2021-progress-report-to-parliament/>

<sup>64</sup> UK Government New Legally Binding Environment Targets Set Out 2022

<https://www.gov.uk/government/news/new-legally-binding-environment-targets-set-out>

<sup>65</sup> Welsh Government Beyond Recycling 2021 <https://www.gov.wales/beyond-recycling-0>

<sup>66</sup> Scottish Government Managing Waste 2022 <https://www.gov.scot/policies/managing-waste/>

the importance of aligning inclusion with other waste policies, including landfill bans, rollout of CCS and the policies in the Resources and Waste Strategy (RWS)<sup>67</sup>. The majority of Local Authorities (LAs) who responded disagreed with the proposed timing, however, several suggested that phasing in UK ETS obligations could help address some of their concerns. Six respondents (5%), of which most were LAs, said that waste should not be included in the UK ETS at all.

There were 75 responses to question 125. Twenty-four respondents (32%) said that they did not have enough information to say what steps would need to be taken before implementation – this included almost half of LAs who responded to the question. Around half of respondents said that contracts between operators and LAs would need to be re-negotiated. Twenty one (28%) said that time would be required to understand the impacts of the UK ETS, 15 (20%) said time would be required to procure services (e.g. for legal advice), and 21 (28%) said time would be required to build new infrastructure (such as installing new monitoring equipment) and agree a MRV approach between the operator and the LA.

## The Authority Response

The Authority recognises the concerns raised with the timings proposed and agree with respondents that adequate notice is required before including parts of the waste sector in the UK ETS, so that operators and their customers can prepare for implementation.

We also note that in a recent letter from the CCC to Minister Graham Stuart, the UK Government Minister for Energy and Climate at the time, which was copied to the portfolio Ministers of the Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland, the CCC called for the Authority to signal that it will include EfW and waste incineration in the UK ETS “as soon as possible” and to implement this decade<sup>68</sup>.

Therefore, we intend to include EfW and waste incineration in the UK ETS from 2028. This will give a five -year period for the sector and their customers to prepare for implementation. We are minded to include a two-year phasing period, from 2026-2028, where installations will monitor their emissions, but we will consult on this further (see our response to question 141 for further detail). The Authority aims to consult later by the end of 2023 on the details of implementation.

The Authority notes stakeholder comments on the timing of UK ETS expansion alongside other waste policies. By implementing in 2028, the UK ETS will be expanded to waste:

- Several years after the Beyond Recycling strategy policies have been implemented in Wales,

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<sup>67</sup> UK Government Resources and Waste Strategy for England

<https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england>

<sup>68</sup> The Climate Change Committee Development of the UK Emissions Trading Scheme Letter to Minister Graham Stuart 2022 <https://www.theccc.org.uk/publication/letter-development-of-the-uk-emissions-trading-scheme-uk-ets/>

- After the Deposit Return Schemes (DRS) for drinks containers and Extended Producer Responsibility (EPR) scheme has been introduced in all four UK nations,
- After relevant recycling policies have been introduced across all four UK nations, including consistent collections in England,
- After the business, public and third sector recycling regulations have come into force in Wales,
- After any further restrictions on waste to landfill across the UK, including the ban on landfilling biodegradable municipal waste in Scotland, have been introduced.

The Authority is not minded to implement later than 2028: this date balances the need to give stakeholders adequate notice and the need to decarbonise the waste sector as soon as possible.

We will adjust the cap to take account of new sectors being added to the UK ETS in a way consistent with delivering net zero, our Carbon Budgets and other climate targets, such as our NDC. Given how cap and trade schemes work, this adjustment would add allowances to the total cap for the UK ETS and would not be specifically for the waste sector; the sectors that the emissions actually occur in is determined by the market. Our current estimate for emissions to be included from the waste sector in the first year of their inclusion in the UK ETS would be equivalent to around seven million UK allowances for waste in 2028, with decreasing amounts each year for the remainder of the phase, as consistent with delivering the above targets.

Before making a final policy decision, we will take into account relevant updates to UK Government's assessment of the pace of emissions reductions needed across different parts of the economy to deliver UK economy-wide climate targets since the publication of the Net Zero Strategy. We will also obtain CCC advice and we aim to consult by the end of 2023 on this basis, and we will outline the final decision after taking the responses into consideration.

## Point of Obligation

### Summary of Call for Evidence

We proposed that the UK ETS should cover the incineration of fossil material by all waste incinerators. This means that the UK ETS obligation for monitoring, reporting and verification of emissions would be placed on all operators of waste incinerators. For EfW, this would include conventional incineration, advanced thermal treatment (ATT) and advanced conversion technology (ACT). We also noted that consideration will be needed to situations where incineration is the best and only legal option (e.g. certain healthcare wastes).

### Questions

**126) Do you agree that the UK ETS should be expanded to include waste incineration and EfW? (Y/N) Please outline your reasoning, including alternative options for decarbonisation of the sector outside of the UK ETS.**

**127) Do you agree that all types of waste incinerators should be included in the UK ETS? (Y/N) If you believe certain incineration activities should be exempt, e.g. incineration of hazardous or certain healthcare waste, please provide details and specify which waste stream.**

**128) Do you believe ATT should be included in the UK ETS? (Y/N) What challenges could arise as a result of including ATT, if any, that are different to conventional waste incineration plants?**

**129) Do you agree that the point of MRV obligation for the UK ETS should be placed on the operators of waste incinerators and EfW plants? (Y/N) Please outline your reasoning in as much detail as possible and provide evidence to support your views.**

**130) If the point of MRV obligation is placed on operators of waste plants, should waste companies/operators or customers (either LAs or commercial and industrial customers) be responsible for meeting compliance obligations? (Y/N) Please outline your reasoning in as much detail as possible and provide evidence to support your views.**

**131) Do you believe that the Small and Ultra Small Emitter schemes that are currently available to eligible UK ETS participants should also be available to waste incinerators and EfW plants? (Y/N) Please provide details including, where relevant, whether your organisation is likely to be eligible for these schemes based on current rules.**

## **Summary of Responses**

There were 104 responses to question 126, of which 83 respondents (80%) agreed that the UK ETS should be expanded to include waste incineration and EfW. There were 125 respondents who commented their views on the question, many of whom caveated their support for UK ETS expansion, including 59 (47%) who expressed concern that expansion would risk unintended consequences (e.g. LA cost burdens and carbon leakage from waste exports) and that the UK ETS should only be expanded if the risks are limited. This included most LAs and LA groups who responded to the question. Fifty (40%) said that the UK ETS should only be expanded if it is aligned with other policies such as those outlined in Defra's RWS and the Waste Industrial Carbon Capture (ICC) business model. Thirty-two (26%) said that their support for UK ETS expansion was dependent on the timing of implementation, most of whom were LAs and LA groups. However, 34 (27%) said that expanding the UK ETS to waste incineration and EfW would drive decarbonisation and be vital to the sector's decarbonisation, while 20 (16%) said that policies targeting waste upstream should be used instead.

There were 87 responses to question 127, of which 49 respondents (56%) disagreed that all types of waste incinerators should be included in the UK ETS. There were 101 respondents who commented their views on the question, of which 38 respondents (38%) said that clinical waste should be excluded and 23 (23%) said that hazardous waste and waste containing persistent organic pollutants (POPs) should be excluded. Twenty (20%) said that small emitters should be excluded, most of whom were LAs and LA groups, with the reason mainly being the disproportionate costs of decarbonisation relative to revenue. Conversely, of those who agreed, eight (8%) said that doing so would ensure a level playing field.

There were 81 responses to question 128, of which 65 respondents (80%) agreed that ATT should be included in the UK ETS. There were 95 respondents who commented their views on the question, of which 27 (28%) said that this would ensure a level playing field, which included

most waste management companies and EfW operators who responded to the question. Eighteen (19%) said that ATT produces emissions at a similar level to incineration and therefore shouldn't be treated any differently. Fourteen (15%) said that they were not aware of any commercial ATT plants currently in operation. Conversely, seven (7%) said that the inclusion of ATT would limit advancements in this technology which will be important for other sectors' decarbonisation pathways.

There were 91 responses to question 129, of which 89 respondents (98%) agreed that the point of MRV obligation for the UK ETS should be placed on waste plant operators. There were 95 respondents who commented with their views on the question, of which 37 (39%) noted that operators have the expertise and equipment required for accurate MRV. Twenty-four (25%) said that operators have existing emissions monitoring/reporting obligations under permitting requirements.

There were 67 responses to question 130, of which 41 respondents (61%) agreed that if the point of MRV obligation is placed on the operators of waste plants, then they should also be responsible for meeting compliance obligations. There were 94 respondents who commented with their views on the question, of which 18 (19%) noted that operators have the expertise and equipment required for accurate MRV and 19 (20%) said that there are existing permitting requirements on operators to monitor and report their emissions.

There were 81 responses to question 131, of which 58 respondents (72%) said that the UK ETS Small and Ultra Small Emitter schemes should also be available to waste incinerators and EfW plants. There were 86 respondents who commented with their views on the question, of which 22 (26%) said that the cost of decarbonisation as a proportion of revenue would be too high for smaller plants. Nine (10%) said that doing so would ensure consistency with other sectors covered by the UK ETS. Conversely, 19 respondents (22%) who disagreed with making the scheme available to waste incineration and EfW plants stated that doing so would result in an uneven playing field for participants in the waste sector. This included most waste management companies who responded.

## **The Authority Response**

We will proceed with expansion of the UK ETS to include waste incineration and EfW. The Authority notes the strong support for expansion among respondents, although this was often dependent on the need for careful consideration of timing, alignment with other waste policies and avoiding the potential for unintended consequences to the waste hierarchy.

The Authority recognises the concerns raised about the inclusion of incineration of hazardous and healthcare waste in the UK ETS, particularly where there is a legal requirement for these wastes to be incinerated. We understand this material is often incinerated in smaller, specialist facilities, which may be less able to decarbonise or who may be disproportionately affected by the compliance or MRV burdens of the UK ETS. We understand, however, that some hazardous and healthcare waste, particularly waste containing POPs, can be incinerated at conventional EfW rather than specialist facilities. We also note that emissions from the incineration of hazardous and clinical waste make up 4% of the UK's total waste incineration

and EfW emissions<sup>69</sup>. We are not minded to exempt hazardous waste from the UK ETS. However, we will further consider any risks this might pose, such as carbon leakage (waste exports) or increased waste crime, and aim to consult on potential mitigation options by the end of 2023 if necessary. Similarly, we are not minded to exempt clinical waste, and note, based on currently operational facilities and their emissions, that all specialist clinical waste facilities would be below the proposed small emitter thresholds for waste (see MRV section below). We will further consider the implications of this position, particularly in relation to the cost impacts for health services in the UK, and aim to consult on by the end of 2023 if necessary.

We recognise the varied technologies and products that can be used to generate energy from waste. For example, there are technologies which can convert waste into fuels. In some cases, these products may contribute to reductions in emissions in other sectors. However, we are committed to ensuring that any expansion of the UK ETS to waste incineration and EfW maintains a level playing field across different technologies, to ensure that fossil elements are removed from the residual waste stream. The Authority intends to include ATT, ACT and other related advanced waste technologies (including waste-to-fuel facilities) in the UK ETS. However, further work will be carried out to determine how emissions from these facilities will be counted under the UK ETS.

The Authority intends to place the point of obligation for MRV under the UK ETS on the operators of waste incineration and EfW facilities. We share respondents' views that operators are better placed to undertake MRV obligations. The facilities are the direct source of emissions and operators are already subject to pre-existing requirements to monitor some emissions, in line with environmental permitting regulations in England, Wales, Scotland and Northern Ireland. Consequently, operators will already have some expertise and more of the equipment necessary to carry out MRV.

If MRV obligations are placed on the operators of waste incineration and EfW facilities, then compliance obligations should sit with the same party, since the level of measured emissions will dictate the number of allowances that need to be purchased and surrendered. Additionally, respondents noted that wider compliance obligations, such as obtaining environmental permits, already form a part of the contractual agreements between operators and their customers, and we share their assumption that UK ETS compliance would form a part of this.

Most respondents stated that the Hospital and Small Emitter and Ultra Small Emitter provisions that are currently available to eligible UK ETS participants should also be available to waste incinerators and EfW plants. The Authority agrees with stakeholders that some small emitters should be exempt from full participation within the UK ETS. Regarding the Hospital and Small Emitters provisions, the Authority is minded to use the existing UK ETS threshold of equal to or less than 25,000 tonnes of CO<sub>2</sub>e per year. This threshold would apply to fossil emissions only. We are not minded to use the existing UK ETS threshold of 35MW thermal input, on the basis

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<sup>69</sup> 2020 UK Greenhouse Gas Emissions: Final Figures – Dataset of Emissions by End Users. Calculated by dividing 2020 incineration emissions for Biological Waste, Clinical Waste & Chemical Waste by incineration emissions for Municipal Solid Waste, Biological Waste, Clinical Waste & Chemical Waste.

<https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2020>

that the thermal input of a facility will depend on the heterogeneous content of their waste. Further work is required to understand the interaction with MRV options, any adverse implications of this position and how to mitigate them, such as any carbon leakage implications or the risk of operators building smaller facilities to avoid the UK ETS. We aim to consult on those risks by the end of 2023. The existing ultra-small emitters threshold (less than 2,500 tonnes of CO<sub>2</sub>e) will still apply, so participants in the waste sector below this threshold could opt out of the UK ETS.

The Authority response to the Call for Evidence on the 20MWth minimum threshold for participation in the UK ETS can be found in Chapter 5.

## Monitoring, Reporting and Verification (MRV) of emissions

### Summary of Call for Evidence

We proposed that the UK ETS would apply to the processing of fossil waste only. This would mean that participants would only have to surrender UK allowances for their fossil emissions, in line with IPCC standards on estimating the climate impact of waste incineration<sup>70</sup>. We proposed two options for determining the UK ETS obligations for each facility, by estimating the fossil content of the waste that is being treated or incinerated:

- Option A: Individual plant monitoring, which would require individual facilities to determine the ratio of fossil and biogenic CO<sub>2</sub> that is being emitted from their facility. This could use the radiocarbon (C-14) method or the “balance method”.
- Option B: Emissions factor approach, which would use an estimate for the composition of the waste, which would then be applied to each facility’s CO<sub>2</sub> emissions to determine the amount of fossil CO<sub>2</sub> being emitted.

### Questions

**132) Which MRV proposal do you believe should be implemented to determine the UK ETS obligation for waste incinerators and EfW plants?**

**i) If Option A, please provide your views on which methods could be used, along with any information on the practicality of their implementation and likely costs.**

**ii) If Option B, please provide your views on how these emissions factors should be calculated, along with any information on the practicality of implementation and likely costs.**

**In your answer, please outline how frequently fossil emissions should be monitored under both options and consider whether there are other suitable MRV options that we have not identified.**

**133) Do you believe that one of the MRV options proposed is more likely to lead to perverse incentives (e.g. more waste diverted to landfill) or to unintended consequences as a result of applying the UK ETS to waste incineration and EfW?**

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<sup>70</sup> IPCC Standards on Estimating the Climate Impacts of Waste Incineration  
[https://www.ipcc.ch/site/assets/uploads/2018/03/5\\_Waste-1.pdf](https://www.ipcc.ch/site/assets/uploads/2018/03/5_Waste-1.pdf)

**Please consider different scenarios and provide evidence to support your views where possible.**

**134) Do you believe any additional greenhouse gases, other than CO<sub>2</sub>, that are emitted by EfW plants or incinerators, should be covered by the UK ETS? (Y/N) If so, please provide details on which gases and how it could work in practice.**

## Summary of responses

There were 88 responses to question 132. Thirty-five respondents (40%) were in favour of Option A. Thirty-one respondents (35%) noted that this was the more accurate method. Nine respondents (10%), including most waste management companies, suggested that the greater accuracy of determining fossil emissions could incentivise greater action in reducing fossil content in residual waste streams. Twelve respondents (14%) said that Option A was more expensive. Eleven respondents (13%) were in favour of Option B, with 10 respondents (11%) stating that this was the cheaper and simpler method. Ten respondents (11%), of which half were waste management companies, were supportive of permitting a hybrid of the two methodologies, which commonly included setting a default regional or national emissions factor set deliberately higher than the average, or allowing facilities to use individual plant monitoring methods. Fifteen respondents (17%), most of whom were LAs, said that any method of MRV chosen needed to effectively consider the local circumstances of the EfW facility and the waste supplied to it. Twenty-seven respondents (31%), the majority of which were LAs or LA groups, provided no view or said there was not enough information to provide an informed view.

There were 78 responses to question 133. Forty-eight responses (62%) raised the risk of diversion of waste to landfill. Twenty-three respondents (29%) said application of the UK ETS to waste incineration and EfW could increase the amount of waste exported as refuse-derived fuel (RDF). However, the perverse incentives noted in these responses tended to relate to the UK ETS expansion to the sector, rather than as a consequence of one of the proposed MRV options. Regarding Option B, seven respondents (9%), the majority of which were waste management companies, raised that this could lead to under or over-recovery of costs from LAs by operators, and nine (12%) said that there would be no incentive to reduce fossil content in their waste streams. Twenty-four (31%) respondents raised concerns over the additional costs and administrative burdens of MRV, and the majority of these related to Option A. Twenty-one respondents (27%), mostly from LAs and LA groups, said that there were no unintended consequences foreseeable or otherwise it was not clear, and more information was required.

There were 60 responses to the Y/N element of question 134, of which 36 respondents (60%) said that non-CO<sub>2</sub> greenhouse gases that are emitted by waste incinerators and EfW plants should not be covered by the UK ETS. There were 77 respondents who commented with their views on the question, of which 27 (35%) said that non-CO<sub>2</sub> emissions should be addressed by other means, while 23 respondents (30%) highlighted that CO<sub>2</sub> was the main greenhouse gas emitted from facilities and the focus of the UK Government's Net Zero Strategy. Six

respondents (8%) said that non-CO<sub>2</sub> greenhouse gas emissions in the sector should be included when other sectors covered by the UK ETS start including them.

## The Authority response

The Authority acknowledges the mixed feedback on MRV, and we are committed to exploring these options in further detail, including accuracy, preparation and operating costs, sampling frequency, capacity, possible calculation methods for emissions factors, and alternatives. We will also explore in more detail the applicability of the current UK ETS monitoring requirements for biomass<sup>71</sup> and their suitability for residual waste. We aim to consult by the end of 2023 on more detailed proposals for MRV.

The Waste ICC Contract<sup>72</sup> requires emitters that hold a contract to use the C-14 method to determine their fossil CO<sub>2</sub> emissions. UK Government and the Authority is seeking to ensure that the decisions made on MRV for the UK ETS and Waste ICC business model are complementary to avoid additional burdens.

The Authority recognises the importance of accurate apportioning of fossil content between different waste suppliers at facilities which accept waste from multiple sources, to reflect recycling efforts. This would encourage and reward reductions in the fossil content of residual waste.

The main greenhouse gas covered by the UK ETS is CO<sub>2</sub>, although other emissions are also covered for specific activities. We are aware that waste incineration and EfW facilities emit other pollutants in addition to CO<sub>2</sub> but note the feedback from stakeholders that these are already regulated and should be addressed by other policies. The Authority intends to cover fossil CO<sub>2</sub> emissions in expanding the UK ETS to waste incineration and EfW. However, we may explore covering other greenhouse gases in the future, such as methane, should the UK ETS be expanded to the wider waste sector.

## Distributional and market impacts

### Summary of Call for Evidence

We sought further detail on the potential impacts on the waste hierarchy and to what extent operators of facilities could pass any UK ETS costs through to their customers.

#### Questions

- 135) How would the application of an ETS to waste incineration and EfW impact stakeholders (including operators of waste incinerators, operators of EfW plants, LAs, consumers, customers)?**
- 136) Could the introduction of a carbon price incentivise waste operators and/or LAs to improve their operations or processes to reduce fossil waste being incinerated? (Y/N)**

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<sup>71</sup> UK ETS: monitoring and reporting biomass in installations

([https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1033859/uk-ets-monitoring-reporting-biomass-installations.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1033859/uk-ets-monitoring-reporting-biomass-installations.pdf))

<sup>72</sup> The variation of the 'generic' ICC contract for the waste management sector, given the differences between the waste management sector and other industrial sectors supported through the ICC business model.

**Please outline your reasoning in as much detail as possible and provide evidence to support your views.**

**137) Could the introduction of a carbon price incentivise LAs to support households to improve recycling practices? (Y/N) Please outline your reasoning in as much detail as possible and provide evidence to support your views.**

**138) Is there opportunity (in the medium-long term) for the carbon price to incentivise waste operators and/or LAs to invest in carbon capture and storage infrastructure, to reduce fossil carbon emissions? (Y/N) Please outline your reasoning in as much detail as possible and provide evidence to support your views.**

**139) In the event of the carbon price being applied to waste operators, will waste operators be able to pass through their costs to customers (including LAs)? (Y/N) Please explain in as much detail as possible why, how, and to what extent this may or may not occur.**

**140) For LA owned plants, would unitary authorities and waste disposal authorities be the only authorities exposed to the carbon price – in the event of waste operators passing through costs? (Y/N) Please explain in as much detail as possible and provide evidence to support your views.**

**141) Do you believe that government should consider phasing in ETS obligations to the sector over time? (Y/N) If yes, please outline why, how, and to what extent phasing options could be provided.**

**142) Would operators of incineration/EfW plants be exposed to competitiveness impacts abroad and carbon leakage risk, in the event of being exposed to the carbon price? (Y/N) Please explain in as much detail as possible and provide evidence to support your views.**

**143) Have you identified any other distributional impacts (including wider environmental or social impacts) arising from this proposal? (Y/N) Do you have views on how government could address these concerns?**

## **Summary of responses**

There were 89 responses to question 135. Sixty respondents (67%) raised that the costs of compliance with the UK ETS would likely be passed through to some extent, which included many LAs and waste management operators. Thirty-one (35%) said that there were likely to be waste incineration and EfW gate fee increases, including most waste management operators who responded to the question. Twelve (13%) said that these increases could cause loss of third-party income which could in turn result in further gate fee increases. Eighteen respondents (20%), most of whom were LAs, raised concerns about costs being placed on them as this may reduce service provision elsewhere. Twenty-five respondents (28%) suggested that costs would be eventually passed through to households or consumers, with 14 (16%) saying council taxes might have to be increased. Twenty-one respondents (24%), most of whom were LAs, raised that producers should be bearing the costs of the UK ETS.

There were 77 responses to question 136, of which 65 (84%) said that the introduction of a carbon price could incentivise waste operators and/or LAs to reduce fossil waste being incinerated. There were 89 respondents who commented with their views on the question, of which 35 respondents (39%) said that carbon pricing could incentivise investment or behaviour change which will bring about decarbonisation. However, many responses highlighted the need for improved infrastructure, with 25 (28%) saying that improved recycling infrastructure was needed, 22 (25%) saying that CCS was dependent on government support and 19 (21%) saying that heat export and network infrastructure was required. Twenty respondents (22%) said that more developed secondary markets are required for recycled materials, while 10 (11%) raised that some materials that are recycled are not of a high enough quality or are too contaminated for current markets. Nineteen respondents (21%) raised that producers should bear the costs of the UK ETS. Stakeholders also mentioned that operators and LAs have limited control over the waste (and the fossil content of that waste) that they receive.

There were 74 responses to question 137, of which 53 (71%) answered that yes, introducing a carbon price could incentivise support for improved household recycling. There were 77 respondents who commented with their views on the question, most of whom were LAs, of which 38 (49%) noted that the UK ETS could result in behaviour change for LAs and 15 (19%) said that this could also be achieved for households. Respondents also suggested other ways that household recycling practices could be improved, with 25 (32%) saying that engagement and education campaigns would help, but 23 respondents (30%) said that government support would be needed to support these types of activities due to the financial pressures on LAs. Seventeen respondents (22%) suggested some of the revenue generated by the UK ETS could be hypothecated to support this. Thirty-one respondents (40%) said that the other waste reforms taking place over the 2020s, such as those set out in the RWS, should be the priority.

There were 69 responses to question 138, of which 51 respondents (74%) agreed that a carbon price could incentivise investment in CCS infrastructure. There were 83 respondents who commented with their views on the question, and of these, 31 (37%) were positive about the UK ETS acting as an incentive for investment in CCS, which included LAs, waste management operators and trade associations. Forty-seven respondents (57%) mentioned the expense of CCS deployment and that it would need government support. Twenty-eight (34%) said that it was difficult to install outside of clusters and 24 (29%) said the technology was not yet mature. Seventeen respondents (20%) raised that CCS deployment was suited to facilities with longer contracts and therefore longer payback periods, and 14 (17%) mentioned deployment was age prohibitive with it being difficult to deploy on older facilities. Fourteen respondents (17%), most of whom were waste operators or trade associations, raised that investment was required from the Government in developing the right infrastructure and transport and storage solutions. Nine respondents (11%) suggested that negative emissions revenues could support incentives to invest in CCS. Ten respondents (12%), mainly waste management operators in the context of CCS deployment, raised that there needed to be uses or offtakers for the captured carbon to facilitate deployment.

There were 69 responses to question 139, of which 67 respondents (97%) said that yes, waste operators would be able to pass the cost of a carbon price onto their customers. There were 83 respondents who commented with their views on the question, of which 62 respondents (75%)

noted that cost pass-through between operators and suppliers would occur and 55 (66%) mentioned Qualifying Change in Law (QCIL) clauses within contracts. This was raised by the vast majority of LAs, LA groups and waste management operators who responded to the question. However, 12 respondents (14%) said that it was not certain that all costs would be passed through, with 15 (18%) saying that it would depend on the contract situation and 10 (12%) suggesting that Government should introduce guidance on this issue. No LAs suggested that costs could not all be passed through – these responses all came from waste management companies, EfW facilities and trade associations. Twelve responses (14%) raised that gate fees at facilities were likely to be increased as a result. Twenty-two respondents (27%) highlighted that if costs are passed through, there needed to be a mechanism to allow for the apportionment of exact costs between multiple waste suppliers. Ten respondents (12%) said that New Burdens should apply or Government should provide funding to cover the increased costs.

There were 54 responses to the Y/N element of question 140, of which 48 respondents (89%) said that for LA owned plants, unitary authorities and waste disposal authorities would not be the only authorities exposed to any pass-through costs of the carbon price. There were 65 respondents who commented with their views on the question, of which 27 (42%) said that waste collection authorities (WCAs) may face carbon costs. Fourteen responses (22%) mentioned the costs the UK ETS would pose to third parties and the commercial and industrial (C&I) sector.

There were 83 responses to the Y/N element of question 141, of which 63 respondents (76%) agreed that the Government should consider phasing in UK ETS obligations to the waste sector over time, including all LAs who responded. There were 92 respondents who commented with their views on the question, of which 37 (40%) said that phasing could improve understanding of the UK ETS and allow time for LAs and operators to adjust ahead of full cost exposure. Thirty-two respondents (35%) said phasing could help align the UK ETS with other waste policies. Several phasing options were mentioned by respondents – an MRV only period, phasing through free allocation of allowances, phasing by part of the waste system (e.g. starting with EfW and waste incineration, and expanding to recycling in the future), phasing by carbon price exposure and phasing by facility (e.g. include newer facilities earlier than older ones). Of those who disagreed with phasing, some respondents argued it would delay the impact of including the sector in the UK ETS.

There were 70 responses to the Y/N element of question 142, of which 63 respondents (90%) stated that a carbon price would expose plant operators to competitiveness impacts abroad and carbon leakage risk. There were 81 respondents who commented with their views on the question, of which 68 (84%) noted that waste exports could increase. Nine (11%) said that landfill rates could increase. Thirty-three (41%) said that a tax should be placed on waste exports if a carbon price is imposed domestically. Nine respondents (11%) said that a waste export ban should be imposed before a carbon price, while two said the same for landfill. Sixteen respondents (20%) said that the UK ETS should be extended to exports, and eight (10%) said the same for landfill.

There were 64 responses to the Y/N element of question 143, of which 49 respondents (77%) said that yes, other distributional impacts could arise from expansion of the UK ETS. There were 67 respondents who commented with their views on the question, of which 26 (39%) and 29 (43%) respectively raised the risks of diversion of waste to landfill and to RDF or solid recovered fuel (SRF). Fifteen respondents (22%) mentioned the risk of increasing the incentives for waste crime. Fifteen respondents (22%) raised that the costs of the UK ETS could be passed through to households or consumers.

## The Authority response

The Authority acknowledges the wide-ranging feedback from stakeholders on the impacts that the policy may have.

We believe that the UK ETS could facilitate reductions in emissions and increased efficiency of EfW plants. This could be achieved through incentivising increased levels of recycling, mixed waste sorting to remove fossil content from residual waste, and CCS. The UK ETS could potentially also incentivise heat offtake, which would make the facility more efficient, depending on final policy design. However, we acknowledge the barriers to some of these decarbonisation options which were raised by stakeholders, such as the cost and infrastructural difficulties around CCS and heat offtake and the relative technological immaturity of chemical recycling.

There are other policies which support the deployment of some of these decarbonisation options and aim to overcome specific barriers, which would support the objectives of the UK ETS. However, we acknowledge the difficulties of deploying CCS for those outside of the CCS clusters but note that the UK Government's Waste ICC business model provides support to waste management emitters to decarbonise through ongoing revenue support and, for initial projects only, a capital grant funded by the CCS Infrastructure Fund of up to, but not including, 50% of total capital costs.

To address some of the barriers to heat network development, policies on heat network zoning, development of a regulatory and market framework and support funding for heat networks are due for implementation across the UK. Where heat is a devolved issue, such as in Scotland, policies and funding will be specific to that devolved government. These could help support heat offtake from EfW facilities.

Stakeholders frequently mentioned the importance of a circular economy approach, focusing on promoting prevention of waste and re-use in addition to recycling. It has also been stressed that behavioural change at the household and producer level is required to decarbonise the sector. We acknowledge additional policies to the UK ETS are required to facilitate this, such as those set out in the UK Government's RWS, Welsh Government's Beyond Recycling strategy<sup>73</sup>, Northern Ireland Executive's Waste Management Strategy<sup>74</sup>, Scottish

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<sup>73</sup> Welsh Government Beyond Recycling 2021 <https://www.gov.wales/beyond-recycling-0>

<sup>74</sup> Northern Ireland Waste Management Strategy 2022 <https://www.daera-ni.gov.uk/articles/waste-management-strategy>

Government's Circular Economy Route Map Consultation<sup>75</sup>, and this is discussed in our response to question 144.

Stakeholder feedback strongly indicates that some level of cost pass-through will occur between operators of incinerators and EfW facilities and their customers because of QCiL clauses in contracts. We understand this may raise the costs of waste disposal, particularly for LAs. The Authority is committed to exploring these cost impacts in further detail before establishing the exact policy design for how EfW will be included in the UK ETS, and we note that the UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland are committed to supporting councils to deliver high-quality public services<sup>76</sup>.

We also understand that there are decarbonisation opportunities in the waste management sector that can be realised by a wide range of participants. This means that if the costs of the UK ETS are borne by only one group in particular, the expansion of the UK ETS may not fully achieve its objectives. Therefore, the Authority is committed to exploring different mechanisms for distributing costs of the UK ETS fairly, for example through linking to EPR.

We agree with respondents that phasing in UK ETS obligations to the sector over time could support LAs and operators to better understand the UK ETS, prepare for full cost exposure and manage the implementation of the UK ETS alongside other waste policies.

The Authority has considered the different options for phasing that respondents recommended. We are minded to implement a two -year period where operators will monitor, report and verify their emissions from 2026-2028, before full cost exposure. This will allow both operators and their customers to better understand how the UK ETS reporting cycle functions, and to understand the potential cost impacts for customers. We will propose how this period will work, including the specific requirements on operators and others, in the subsequent consultation.

Some respondents suggested phasing cost exposure to the UK ETS over time e.g. paying only 20% of the carbon price in the first year, 40% in the second year etc. While this may reduce the risk of sudden exposure to a high carbon price, the UK ETS is a market mechanism, and as such the carbon price can fluctuate. This approach therefore does not necessarily guarantee a gradual price increase.

Several respondents also suggested phasing through free allocations. However, free allocation of allowances is used to mitigate the risk of carbon leakage and is not appropriate to use as a mechanism for phasing. As noted below, we will carry out further work on carbon leakage (waste exports) risks and mitigation options, should it prove necessary. Chapter 2 of this Government Response also contains detail on free allocation reform.

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Scottish Government's Circular Economy Route Map Consultation 2022 <https://consult.gov.scot/environment-forestry/scotlands-circular-economy-routemap/>

<sup>76</sup> At the Autumn Statement 2022 the UK Government provided local authorities in England with access to up to an additional £2.8 billion for adult social care, discharge, and other services in 2023-24, increasing to £4.7 billion in 2024-25.

Some respondents suggested phasing by facility, starting with new facilities first on the basis that it would be easier for them to decarbonise. While we recognise that newer facilities are more likely to be able to install CCS, as noted previously, there are policies coming into force to encourage decarbonisation across the system (including producers and citizens, as well as facility operators). On that basis, we do not intend to phase by age of facility.

Finally, a small number of respondents recommended phasing by part of the waste sector, e.g. starting with EfW and waste incineration, and then including landfill, recycling and/or wastewater in the future. As set out in the Authority response to question 146, we do not propose including sectors beyond EfW and waste incineration at this time, but the UK ETS Authority will continue to explore expanding the scope of the UK ETS to other parts of the waste sector in the future.

The Authority notes the concerns raised by respondents regarding carbon leakage from the export of waste and the risk of incentivising waste to be sent to landfill. The extent of these risks will be investigated, and should it prove necessary, we will develop mitigation options, considering those noted by respondents to the Call for Evidence. We also note that Defra plan to consult in 2023 on implementing a non-OECD plastic waste exports ban, which will mitigate against waste export risk. Additionally, we will continue to monitor the development of the EU Parliament's proposals to extend the EU ETS to waste incineration and EfW facilities as part of their Fit for 55 package and will consider subsequent impacts on waste exports.

Stakeholders have also raised concerns around the UK ETS increasing the incentivisation of waste crime, as well as affecting domestic energy production. We acknowledge these concerns and will take them into consideration in future policy development.

## Interaction with planned and existing policies

### Summary of Call for Evidence

We outlined other policies, both those in place and planned, that would help to decarbonise the waste sector. In particular, we outlined how CCS is likely to play an important role in helping to meet ambitious climate targets, but that adoption of this technology may be more challenging for waste plants located outside industrial clusters and planned CCS transport and storage infrastructure. The Authority also noted the policies in place across the UK to increase recycling and reduce the amount of residual waste sent for treatment.

### Questions

**144) What additional policies would be needed to support the UK ETS in decarbonising waste incineration and EfW? How would this change over time?**

**145) How would the expansion of the UK ETS to waste incineration and EfW interact with existing and planned policies in waste incineration, EfW, and waste management more broadly, as well as any other relevant non-decarbonisation policies?**

**146) Are there other parts of the waste management system that should be included in the scope of the UK ETS? For example, landfill or wastewater. (Y/N) Please explain in as much detail as possible and provide evidence to support your views.**

## Summary of Responses

There were 82 responses to question 144, most of which suggested additional policies that could complement UK ETS scope expansion to waste. This included 33 respondents (40%) who called for additional upstream policies to reduce residual waste going to EfW and waste incineration. Eleven respondents (13%) said that Government should increase the ambition of existing waste policies, including the RWS policies. Thirty responses (37%) called for EfW infrastructure, such as CCS, to be further developed and incentivised by Government, and nine (11%) said the Government should further support heat offtake. Other responses suggested policies that could help reduce perverse incentives should waste be included in the UK ETS. Twenty-four respondents (29%) said that UK ETS rollout should be accompanied by a mechanism to limit RDF exports, and 21 (26%) said it should be accompanied by further disincentives for landfill. Other responses focused on aligning UK ETS expansion to waste with existing policies, including 22 (27%) which referenced the RWS policies, and 14 (17%) that said implementation should align with planned landfill bans across the UK.

There were 73 responses to question 145. Forty-four respondents (60%), 30 of which were LAs and LA Groups, agreed that expansion of the UK ETS to waste incineration and EfW could interact with existing and planned policies, particularly the RWS policies. Twenty-one (29%) said expansion should align with any landfill bans, nine (12%) said it should align with any landfill tax reforms and 11 (15%) said it should align with further support for CCS. Six respondents (8%) said expansion of the UK ETS to waste should be accompanied by support for waste to fuels. Seventeen (23%) called for additional upstream policies to support decarbonisation of the sector.

There were 80 responses to question 146, of which 65 (81%) agreed that there are other parts of the waste management system that should be included in the scope of the UK ETS. There were 80 respondents who commented with their views on the question, of which 27 (34%) stated that landfill should be included within the scope of the UK ETS, while nine respondents (11%) opposed its inclusion, and eight respondents (10%) called for the application of an alternative mechanism for landfill. Fourteen respondents (18%) stated that RDF exports should be included in the UK ETS, while three respondents (4%) opposed its inclusion. Sixteen respondents (20%) stated that all residual waste facilities should be included, and nine respondents (11%) said that the inclusion of other parts of the waste management sector was required to ensure a level playing field.

## The Authority Response

The Authority agrees that, while the UK ETS can play an important role in supporting the waste sector to decarbonise, other policies coming into force between now and 2028 will need to work alongside UK ETS scope expansion. This includes rollout of CCS, upstream policies such as those in the RWS in England, Beyond Recycling Strategy in Wales, Waste Management

Strategy in Northern Ireland, Circular Economy Route Map Consultation in Scotland, EPR and further restrictions on waste to landfill. We also recognise that additional policies may need to be developed to support this and ensure the overall policy is coherent. The Authority will ensure UK ETS expansion to waste complements the delivery of planned and any additional policies, as well as the decarbonisation of the waste sector in general.

We note the areas in which respondents said further government support is required, such as additional CCS support and further upstream policies.

Respondents also raised the importance of tackling carbon leakage from waste exports and the risk of additional waste being sent to landfill, in response to questions 144 and 145. Please see the Authority's response to question 142 which covers this issue.

The Authority notes the calls to include other parts of the waste management sector in the UK ETS, as well as the need to ensure a level playing field while also respecting the waste hierarchy. Whilst we do not propose including other parts of the waste sector at this time, the Authority will explore the potential impacts of including other parts of the waste management sector in the UK ETS in the future.

# Chapter 7: Calls for evidence on greenhouse gas removals and agriculture and land use emissions

This chapter covers proposals set out in Chapter 8 of the consultation.

**The Authority believes that the UK ETS is an appropriate long-term market for GGRs. We intend to include engineered Greenhouse Gas Removals (GGRs) in the UK ETS, subject to further consultation, a robust MRV regime being in place and the management of wider impacts.**

The Authority believes that the UK ETS may also offer an appropriate long-term market for high quality nature-based GGRs, subject to further work to consider the range of potential issues brought forward through the Call for Evidence and by the CCC regarding permanence, costs and wider land management impacts. The Authority will aim to carry out a further consultation on inclusion of GGRs in the UK ETS in 2023.

Each member of the Authority will use the findings from the Call for Evidence to identify and consider all the options for improving Monitoring Reporting and Verification (MRV) as a valuable tool to help the agriculture and land use sector decarbonise. The Authority is not proposing to expand the UK ETS to include agriculture at this time.

## Call for evidence on the role of the UK ETS as a long-term market for greenhouse gas removal (GGR) technologies

### Summary of Call for Evidence

This Call for Evidence explored the potential role of the UK ETS as a long-term market for greenhouse gas removal (GGR) technologies<sup>77</sup>. The Authority explored the potential benefits of inclusion of GGRs in the UK ETS; the key considerations for policy design; the range of associated market participation criteria; and different ways of integrating and phasing GGRs into the market over time.

The next section summarises the views heard from the Call for Evidence and the following section sets out the Authority's position on the role of the UK ETS as a long-term market for GGRs and next steps.

<sup>77</sup> Greenhouse Gas Removals (GGRs) is a term used to describe methods of removing greenhouse gases (GHG) from the atmosphere. There are a diverse range of GGR methods broadly falling into two categories: biological or nature-based approaches such as afforestation or engineered approaches such as Direct Air Carbon Capture and Storage (DACCs).

## Role of the UK ETS

Questions
<b>147) Do you believe the UK ETS could be an appropriate long-term market for GGRS? (Y/N) Please explain why, highlighting benefits and risks where possible.</b>

There were 98 responses to question 147. Seventy-eight respondents (80%) agreed that the UK ETS could be an appropriate long-term market for GGRs, 33 of whom agreed on the basis of a number of conditions. Nine respondents (9%) disagreed that the UK ETS was an appropriate long-term market. Eleven responses (11%) did not directly agree or disagree, but outlined key considerations both in favour of and in opposition to the question.

**Supporting GGR deployment:** many responses that agreed said that inclusion of GGRs in the UK ETS would establish demand and incentivise higher deployment of GGRs. They suggested that UK ETS inclusion would provide a market signal to drive investment into GGR projects, support the reduction of costs over time and stimulate competition between the technologies. Respondents also highlighted that the polluter pays principle would be maintained by including GGRs in a scheme that includes some of the hardest to abate sectors, such as energy intensive industry and aviation. Response also suggested that including GGRs in an existing, credible compliance market will help to provide confidence for GGR projects.

Just under half of the responses that agreed with the question did so on the basis of various conditions. These included:

**Technology choice:** A large number of responses argued that only removals with permanent storage should be included. Others raised concerns that low quality GGRs, or poor implementation, could undermine the credibility of the UK ETS. Some pointed towards the likelihood of reversal events, in which carbon is re-released, as an important factor when considering inclusion. A large number of responses highlighted the importance of co-benefits and argued that including nature-based GGRs in the UK ETS could capitalise on these.

**Monitoring, Reporting and Verification:** several responses emphasised the importance of MRV. Some argued that the ability to quantify volumes of removals more easily for Bioenergy with Carbon Capture and Storage (BECCS) and Direct Air Carbon Capture and Storage (DACCs) made them more favourable compared to the potentially large and unknown volumes from nature-based solutions. Relatedly, some pointed towards the difficulty of MRV for nature-based solutions.

**Complementary policies:** some pointed out that GGRs are not a homogenous group, arguing that different solutions are at different stages of commercial and technological readiness and therefore require different forms of financial incentives. A number of responses referred to the need for other policies to support GGR deployment before or alongside market integration, such as through business models and revenue support.

Responses also focused on wider themes, including:

**Impact on the UK ETS:** several respondents pointed towards improved liquidity in the UK ETS market as a benefit of GGR inclusion. A number argued that the UK ETS may need to be expanded to new sectors that will likely need GGRs in the future. One argued that GGR uptake should be limited in the UK ETS to ensure that there is GGR capacity for those outside of its scope. A number argued that in future the UK ETS should be a net negative market.

**Interaction with VCMs:** respondents also covered the interaction of UK ETS integration and voluntary carbon markets (VCM). Several responses argued that monitoring, reporting and verification (MRV) in a compliance market such as the UK ETS will improve VCM standards. Others suggested that GGR projects should be able to sell in both voluntary and compliance markets, provided that there is no double counting of sequestered emissions. Furthermore, a number of respondents pointed out that voluntary carbon codes for woodland and peat already exist in the UK and could therefore be well suited for inclusion.

**Disagreed with the question:** Some argued that including GGRs would make it challenging to maintain the incentive to decarbonise – that trading within a market like the UK ETS requires fungibility, and inclusion of GGRs would therefore mean substituting reductions with removals. Such responses argued that reduction and removals should be viewed as complementary and not substitutes. Similarly, others argued that biogenic carbon taken up by natural ecosystems (nature-based GGRs) is not equivalent or ‘fungible’ to the carbon released through burning fossil fuels, as such removals have very different timescales when compared with reducing emissions now. One raised the risk that GGRs may not deliver as expected in terms of the amount of carbon removed, and inclusion could therefore undermine the UK ETS.

**Additionally, the Authority sought advice from the Climate Change Committee (CCC):** The Committee recommended that ‘in the longer term, as we approach net zero, it would be sensible to include engineered removals (e.g. those based on carbon capture and storage) in the UK ETS, so that participants with remaining emissions pay for engineered greenhouse gas removals to balance these.’ Furthermore, the CCC advised against the inclusion of nature-based removals. This was because ‘storage of carbon in natural sinks is important but lacks the guarantee of permanence needed for an ETS’ and because of the difference between current expectations of future UK ETS prices and the cost of afforestation.<sup>78</sup>.

#### Questions

##### **148) How could the design of the UK ETS be adapted to include GGRs while still maintaining the incentive to decarbonise for ETS participants?**

There were 59 responses to this question. The proposals have been grouped into common themes.

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<sup>78</sup> Climate Change Committee Letter: Development of the UK Emissions Trading Scheme (UK ETS) - <https://www.theccc.org.uk/publication/letter-development-of-the-uk-emissions-trading-scheme-uk-ets/>

**Managing the supply of removals:** a large number of the responses offered examples of how the Authority could manage the supply of GGRs credits into the UK ETS market, so as to maintain an incentive to decarbonise. This included proactive allowance management around key supply and demand events, such as major GGR projects coming online. Others argued that the Authority should limit the amount of GGRs that participants can use, or reserve GGR credits for market stability mechanisms. Other proposals included reducing the UK ETS cap as GGR credits come into the market, using credits to replace free allocation or only allowing domestic projects into the market. Several respondents proposed ways in which a GGR unit could be valued: for example, it should be worth less than an emissions allowance or by discounting the volume of GGRs introduced into the market based on their permanence.

**Phasing integration:** Some respondents proposed separating the GGRs and UK ETS markets initially, as part of a phased approach to integration, because a separate market would allow for stronger government oversight and transparency of voluntary carbon removal investments, promote greater consistency in MRV across projects and enable more comprehensive monitoring and assessment of the overall level of removals being delivered. Additionally, respondents suggested that markets could be integrated when there is confidence and adequate safeguards that the inclusion of negative emissions in the UK ETS will not act as a disincentive to reduce emissions. Some respondents argued for permanently separate markets for reductions and removals to avoid exaggerating the expected future contribution of negative emissions in climate models. Additionally, they argued separate markets would avoid obscuring the extent and pace of the investment needed to deliver negative emissions.

**Managing use of credits:** Several respondents suggested introducing sectoral criteria for emissions reductions or the requirement for a suitable emissions reduction strategy before accessing GGRs in the market. Others suggested that use of GGRs for UK ETS compliance purposes should be limited to certain sectors. Several responses proposed that participants should be encouraged or required to hold a portfolio of GGRs, designating what proportion of this would be nature-based and engineered.

**Defining a credit:** some respondents also suggested that the Authority could maintain the incentive to decarbonise through the definition of what constitutes a GGR credit. This included proposals to set a threshold for inclusion based on permanence, although one respondent highlighted that this could introduce a risk of providing too little incentive for innovation above that threshold. One respondent proposed that GGR units should only be issued to participants once storage has taken place.

Some respondents argued that the Authority should not be concerned about protecting the incentive to decarbonise given that GGRs are so costly. They argued that as the cap falls over time, participants will then be incentivised to use GGRs. Similarly, others pointed out that because of the high cost of permanent removals, participants would seek to decarbonise more fully ahead of utilising GGRs. One respondent suggested that government can control the pace of development of permanent removals through the business models process and therefore does not need to worry about oversupplying GGR units.

A number of respondents raised the importance of avoiding ‘mitigation deterrence’, whereby emissions reductions are avoided or delayed by the introduction of new measures such as GGRs. One argued that, if participants were permitted to bank and borrow GGR credits as they can currently with emissions allowances, this would allow them to emit more in the current trading period, potentially locking these sectors into a high carbon pathway based on the assumption that GGR delivery will mitigate this. They pointed out that if GGRs do not deliver as expected this will jeopardize net zero targets.

#### Questions

**149) To what extent could the UK ETS price signal incentivise development of the full range of GGRs, including engineered and nature-based GGRs, given the expected differences in the projected costs?**

There were 66 responses to this question. A large number of respondents argued that the UK ETS price signal would likely incentivise the cheapest GGR solutions at the expense of more costly ones. Many of these pointed towards further support for currently expensive technologies to make them cost competitive in the future; similarly, others suggested that once costs are brought down for engineered solutions, the price signal would incentivise their take up. A number argued that the UK ETS would likely never deliver the right price signal necessary to deliver permanent removals, whilst one suggested that relying on the UK ETS alone would more likely lead to an undersupply of these removals. Conversely, one respondent argued that the price signal is needed now to incentivise investment decisions for engineered removals.

Many respondents suggested that the Authority should take a technology neutral approach if including GGRs in the UK ETS. They argued that this would ensure that the most appropriate GGRs are developed in line with market drivers, with some arguing that this would not lead to overreliance on a handful of technologies. In a similar vein, several respondents proposed that revenues raised from the introduction of GGRs into the UK ETS could be used by government to procure a portfolio of GGRs across a range of industries.

#### Questions

**150) What impacts or opportunities could arise for the UK voluntary carbon market, if GGRs were included in a compliance market like the UK ETS? For example, what impacts, or opportunities could there be for voluntary carbon market schemes such as the Woodland Carbon Code?**

**151) What impacts or opportunities could arise for the emerging markets for wider ecosystems services (e.g. biodiversity, flood management, water quality) if GGRs were included in a compliance market like the UK ETS?**

For question 150 there were 52 responses and for question 151 there were 29 responses.

A large number of respondents argued that inclusion of GGRs in a compliance market such as the UK ETS would have a positive impact to VCMs. Many argued that the development of robust MRV standards, supported by the Government, could lead to the adoption and better scrutiny of standards within VCMs. Others argued that with integration, both the UK ETS and VCMs would see greater investment and long-term certainty, an increase in demand and reductions to costs, as well as greater competitiveness.

In relation to ecosystem services, a number of respondents argued that integration into the UK ETS could deliver economic value and help to develop a wider market. Respondents also suggested that farmers could benefit if ecosystem services were delivered and rewarded through environmental payments. However, one respondent suggested that if pricing for GGRs in the UK ETS is high then it could be unfavourable to the development of an ecosystem services market if additional income from other services is not required. They pointed towards the Woodland Carbon Code, which delivers many other ecosystem services beyond carbon removal, such as biodiversity, flood management, water quality, air quality, and recreation and well-being. Similarly, another respondent suggested that pricing GGRs based on carbon where other co-benefits may exist may not drive outcomes that the UK desires.

There were a number of responses that highlighted possible negative impacts. A number argued that inclusion could lead to a reduction in VCM activity and shift the balance of GGRs, leading to higher quality GGRs only being included in compliance markets and lower quality GGRs in VCMs. Other responses raised concerns that the delivery and development of VCMs could be undermined and one respondent argued that inclusion could lead to the fragmentation of existing standards.

Questions
<b>152) Are there any impacts, constraints or unintended consequences that need to be managed if incorporating GGRs within an ETS?</b>

There were 57 responses to this question. A large number of respondents argued that a robust MRV regime will be needed to integrate GGRs into the UK ETS. Many responses raised the issue of land management impacts that could arise from the inclusion of nature-based solutions in the UK ETS, such as potential for long-term land use change to impact food production in the UK. Others focused on socioeconomic development, such as increased land prices and the impact on local communities. Some responses suggested measures to counteract these effects, such as only allowing projects on land purchased before a certain date, setting net worth criteria for landowners, or creating a comprehensive spatial-based land use framework. Some respondents from the farming sector argued that there is not enough removal capacity for nature-based solutions for use by other sectors beyond the residual emissions from agriculture.

## Developing a framework of criteria for eligibility for the UK ETS

### Questions

**153) Do you think there are other eligibility requirements we should consider and what are these?**

In the Call for Evidence, we considered different eligibility requirements for GGRs in a domestic market. These included:

- Robust MRV of emissions.
- Ensuring that carbon removed from the atmosphere is permanent or intended to be permanent. For approaches such as nature-based GGRs that could be impermanent, considering arrangements to minimise the risk and compensate adequately for any re-release of carbon back into the atmosphere.
- Clear property rights for any GGR credits or allowances in the market, to ensure that liability is established and maintained, including in the event of a re-release of carbon back into the atmosphere.

There were 51 responses to this question. Some respondents did not think there were additional criteria beyond those already set out above.

Some responses set out principles the Authority should adhere to. For example, a number argued that eligibility should be broad and technology neutral. Two responses (4%) also pointed towards existing principles that have been developed, such as the International Carbon Reduction and Offset Alliance and Oxford Offsetting Principles. Likewise, and similarly to responses to question 148, a number of respondents proposed eligibility requirements for participants in that they must demonstrate abatement and decarbonisation before being able to purchase GGRs.

### Questions

**154) What MRV criteria need considering for GGRs and what steps need to be taken to ensure a framework of criteria is robust, cost-effective, and scalable:**

- a) For nature based GGRs?
- b) For engineered GGRs?

There were 47 responses to this question. A large number of responses relating to both engineered and nature-based GGRs covered the following specific criteria:

- When removal started and finished and volume and rate of CO<sub>2</sub> removed
- Duration, permanence and quantification of storage

- Lifecycle emissions through capture, processing, transport and storage, and potential leaks in GGR value chain
- Baseline CO<sub>2</sub> against which the project is measured
- Measurement and monitoring plans for storage, including frequency and how they might change over time
- Double counting
- Environmental and social impacts
- Technical readiness, economic feasibility and potential for large-scale deployment
- Additionality

Many responses suggested the use of existing methodologies for MRV, such as those set out in the business models process for different technologies, existing international standards or those from VCMs, and considering the UK Forestry Standard and Woodland Carbon Code for afforestation. In the same vein, a number suggested that a range of MRV methods will be needed for accuracy across different GGR solutions and that MRV will likely have to evolve over time. Many responses called for the adoption of an independent MRV regulator or certification body, as well as the use of independent third-party verification bodies accredited by the UK Accreditation Service.

#### Questions

**155) For GGRs that have a risk of carbon being re-released into the atmosphere, are there any potential solutions we should consider enabling market participation?**

**156) What are challenges of integrating non-permanent removals alongside permanent removals in the UK ETS and how can these be overcome?**

There were 43 responses to question 155 and 36 responses to question 156.

A large proportion of respondents suggested applying a price discount to account for levels of permanence or by weighting credits based on the risk of reversal. Others proposed a volume-based discount based on levels of permanence. One respondent argued that GGRs with a high risk of re-release should not be included and others suggested setting a threshold, for example 30 or 50 years of storage. Other proposals included tonne-year accounting, issuing time limited credits for non-permanent solutions or a buffer pool of credits to be set aside to account for the risk of re-release or project failure.

Conversely, one respondent argued that discounting should not be used as it limits what can be done if re-release occurs given that non-permanence has already been factored into the price. More broadly, a number of respondents highlighted the overall challenge of integrating both non-permanent and permanent removals, with two respondents raising concern that it could devalue the UK Allowance price. There were also a number of responses to question

154 that focused on the importance of permanence, arguing that non-permanent or ‘temporary’ removals should not be included.

#### Questions

##### **157) Who should own the rights of a possible GGR allowance or credit in a possible future market – the buyer, or the seller?**

There were 33 responses to this question. Eighteen respondents (55%) proposed that the ownership of GGR credits should sit with the seller or generator of those credits until the point of sale, at which point they would transfer to the buyer. A further six respondents (18%) stated simply that the buyer of credits should hold the rights.

A number of respondents questioned where liability for storage of emissions should sit even if the rights are transferred on purchase of GGR credits. One respondent (3%) proposed that when leakage occurs, the purchaser of the GGR credit should be obligated to purchase additional allowances to compensate. A number of respondents who also supported ownership transferring to the buyer suggested that liability for delivery of the removal and leakage should remain with the GGR operator. Many concurred that those with liability for leakage should be obligated to buy emissions allowance should it occur. Two respondents argued that, even if rights transfer at the point of sale, the supplier would have a contractual obligation to deliver the removals.

Five respondents (15%) argued that the rights should remain with the generator or seller of the GGR credit. One respondent (3%) argued that they should still have the ability to divest rights to another entity through the sale of a GGR product. Some respondents suggested forms of leasing; for example, one suggested that the rights to the GGR could be leased to the buyer through the market, but that ownership should remain with the generator, and another suggested a similar mechanism whereby the buyer rents the allowance for a specific time. One respondent (3%) highlighted the importance of tracking the transfer of ownership through a registry, to allow a proper audit trail, streamline issuance and ensure no double counting.

#### Questions

##### **158) What can we learn from other countries on ownership and liability for greenhouse gas removals?**

Responses highlighted European initiatives, such as the guarantee of origin market which tracks transfer of certification, the lessons learnt from inclusion of hydrofluorocarbons in the EU and the current work being developed on MRV standards for GGRs. Others highlighted the California Air Resources Board and CCS Protocols as well as the California Low Carbon Fuel Standard. Some also focused on VCM, for example how purchases are transacted through Microsoft, Stripe and Apple, as well as the Voluntary Carbon Market Integrity Initiative.

## Potential market designs

### Questions

#### **159) Should GGRs be incorporated into the UK ETS or would it be preferable to establish a separate, but linked, market for GGRs?**

There were 55 responses to this question. Twenty-six responses (47%) supported the introduction of a separate GGR market that would be linked to the UK ETS. Nine responses (16%) supported the establishment of a separate market that would eventually fully integrate with the UK ETS. Nineteen respondents (35%) supported the full integration of GGRs into the UK ETS, although many argued that this support would depend on the design of the scheme, MRV and types of GGRs that would be included.

A number argued for a separate market for certain types of GGRs, for example, for those that offer non-permanent storage or those that have more complex MRV. Some responses proposed that a voluntary carbon market could act as a separate GGR market. Some responses raised uncertainty as to what the benefits of a separate market would be, for example where the demand would come from or the value of additional complexity. There were a small number of responses that rejected the proposition that GGRs should be included in the UK ETS or in a linked market.

### Questions

#### **160) Are there other market designs or proposals we should consider for longer-term GGR deployment that would be preferable to inclusion in the UK ETS?**

There were 24 responses to this question. Several responses argued that short-term support measures would be needed for certain types of GGRs, with some suggesting that this would apply whether they are included in the UK ETS or not. Other options raised included Contracts for Difference (CfD) support, tariffs, advanced market commitments, tax breaks, obligation schemes and existing VCMs. A number of responses suggested that consideration will need to be given regarding how sectors outside of the UK ETS would use GGR credits should they be integrated into the scheme.

There were a small number of responses that did not think that GGRs should be integrated into the UK ETS, with one arguing that more R&D funding is required for engineered solutions and a common regulatory framework is needed to oversee separate nature-based markets.

## Phasing GGRs into a market

### Questions

#### **161) How and when could eligible GGRs be phased into a market such as the UK ETS?**

#### **162) Should any GGR approaches, or methods be considered for earlier inclusion in a market than others? Why should we consider these?**

**163) Should we trial eligible GGRs in a market or scheme before fully integrating to an existing market like the UK ETS? How and when could this happen?**

There were 45 responses to question 161, 31 responses to question 162 and 33 responses to question 163.

For responses relating to how and when GGRs could be phased into the UK ETS, a large proportion suggested implementation between 2024 and 2026. The reasons provided were: alignment with UK CCS project completion, alignment with wider UK ETS changes, and alignment with business models. Several respondents said inclusion was linked to wider developments, such as the transport and storage network, GGR projects launch dates and GGR MRV. A small number of respondents suggested inclusion should take place from 2030 and beyond.

Several respondents suggested that engineered removals should be considered for early inclusion because of their important contribution to carbon budgets. Some respondents argued that nature-based GGRs are market-ready and therefore should be considered for early inclusion. Other respondents suggested that all GGRs that meet suitable MRV standards should be considered for early inclusion subject to suitable MRV standards. Some respondents did not think any GGRs should be included earlier.

A number of respondents argued there should be no trials, suggesting that existing markets could be used to adopt global standards and learn best practice. Some respondents suggested trials would be useful, with some arguing for a trial period as soon as possible or trials based on technology type and their readiness for integration. A number of respondents suggested that a separate market for GGRs that is linked to the UK ETS would, in effect, act as a trial and should be pursued.

### Other sources and evidence

**Questions**

**164) Are there any relevant sources of evidence and expertise we should use to help inform our thinking?**

There were 11 responses to this question. The following initiatives were raised: Oxera's 'Market design for negative emissions in the UK ETS' report, the Oxford Offsetting Principles, Voluntary Carbon Markets Integrity Initiative, reports by the Coalition for Negative Emissions, the European Commission's Sustainable Carbon Cycles Initiative.

## The Authority Response

The submissions we received have been valuable in helping to inform the Authority's approach to UK ETS and GGR policy. The Authority would like to thank all individuals and organisations who took the time to respond.

### **The UK ETS as a long-term market for GGRs**

The Authority believes that the UK ETS is an appropriate long-term market for GGRs. We will only include GGRs that meet robust standards set by the Authority.

The Authority intends to include engineered GGRs in the UK ETS, subject to further consultation, a robust MRV regime being in place and the management of wider impacts. As engineered GGRs begin to be deployed, inclusion in the UK ETS will incentivise investment in GGRs, provide a source of demand for GGRs from polluting sectors and futureproof the UK ETS so it continues to play a key role in delivering net zero.

The Authority also recognises the importance of nature-based solutions in delivering and sustaining net zero. The Authority believes that the UK ETS may offer an appropriate long-term market for high quality nature-based GGRs, subject to further work to consider the range of potential issues brought forward through the Call for Evidence and by the CCC regarding permanence, costs and wider land management impacts. The UK already has high quality, government-endorsed voluntary carbon standards in place for nature-based removals, such as the Woodland Carbon Code which has robust additionality criteria in place and mechanisms to reduce the risk of reversal. We will explore the potential of these internationally recognised and robust frameworks to provide a foundation on which to bring nature-based solutions into the future UK ETS.

The primary method of achieving net zero will be to decarbonise, and the UK ETS provides a market-based framework to incentivise this to happen cost effectively. However, we will not meet net zero without both engineered and nature-based GGRs – they will be needed to remove the remaining greenhouse gas emissions from sectors that cannot decarbonise fully and will therefore play an important role in meeting emissions targets across the four governments. Governments across the UK have a clear role to play in responsibly deploying GGRs to meet net zero. This role will change over time as the sector matures and GGRs become more established. One of the fundamental barriers to GGR deployment is the lack of predictable and established demand and price for engineered and nature-based removals. The absence of a predictable revenue stream weakens the investment case for GGRs, particularly for technologies where high capital, research and development, and operational costs may act as a barrier to deployment.

This barrier can be overcome by delivering a competitive market for GGRs in which polluters have a strong policy or financial incentive to invest in GGRs to compensate for their remaining emissions. This could be achieved by including GGRs in the UK ETS, essentially allowing UK ETS sectors to use negative emissions generated by GGR developers for compliance. This could also move us closer towards an integrated market framework within which businesses can make economically efficient choices between paying to emit, paying to remove emissions,

or investing to lower emissions. Such a framework could sustain net zero – or net negative – beyond 2050 whilst enabling growth.

A market alone will not be enough to overcome the barriers facing GGR deployment. In the short-term there is also a role for the UK Government in providing bespoke support for initial projects to de-risk investment decisions and provide revenue certainty for technology developers. The UK Government explored how the right incentives and standards can be deployed to boost the growth of GGRs through the Engineered GGRs Business Models and Power Bioenergy with Carbon Capture and Storage (BECCS) consultations in 2022. The design of these business models will seek to alleviate financial barriers to GGRs and support the growth of the sector at the pace and scale needed to achieve the ambition of the Net Zero Strategy. The UK Government has stated its ambition to transition this support to a long-term competitive market, and there is potential for these early contract-based mechanisms to be combined with integrating GGRs in the UK ETS. The full benefits of a market-based approach will need to be balanced with the need to provide bespoke support to ensure sufficient deployment of GGRs to meet our climate targets.

For nature-based GGRs, the UK Government launched the Nature for Climate Fund in 2021, providing over £760 million towards woodland creation and management and peatland restoration. It has launched innovative private-public partnerships such as the Big Nature Impact Fund, launched skills and training programmes creating new jobs and set up innovation funds. The UK Government also published its Nature Markets Framework in March 2023 setting out plans to facilitate the expansion of high-integrity markets for ecosystem services, including nature-based carbon removals. UK Government also launched the Natural Environment Investment Readiness Fund (NEIRF)<sup>79</sup> in 2021 to support innovation and pipeline development for ecosystem services markets, including climate mitigation.

In Wales, £32 million has been committed to two new Woodland Creation Grants to fund farmers and other landowners to create woodland. The Welsh Government is also working with landowners to create a National Forest for Wales. Last year a woodland finance working group recommended approaches to securing investment in woodland creation without negatively disrupting existing communities. The National Peatland Action Programme (NPAP) is funding the restoration of peatland across Wales and has so far invested over £5 million and restored 1,600 hectares (ha). In October 2022, as part of the Biodiversity Deep Dive, the Minister for Climate Change announced the NPAP would increase restoration from a target of 600ha pa to 1800ha pa by 2030 in order to deliver Wales' net zero commitments for peatland.

In Scotland, the 2020-2021 Programme for Government in Scotland allocated an additional £100 million to Scottish Forestry to increase new planting alongside £30 million to Forestry and Land Scotland to expand Scotland's national forests and land by an additional 18,000 hectares a year by 2024-2025. A further £20 million was allocated to increase nursery stocks further.

In Northern Ireland (NI), the Department of Agriculture, Environment and Rural Affairs (DAERA) have committed to establishing 9,000 ha of new woodland by 2030 through the

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<sup>79</sup> <https://www.gov.uk/government/publications/apply-for-a-grant-from-the-natural-environment-investment-readiness-fund/how-to-apply-for-a-natural-environment-investment-readiness-fund-grant>

Forests for Our Future afforestation programme. The current NI forestry strategy aims to achieve 12% forest cover in NI by 2050 and targets land controlled by private individuals, businesses, charities and councils. The Northern Ireland Peatland Strategy is a draft policy with conservation and restoration ambitions for peatlands within Northern Ireland. The Vision of the Strategy is that peatland habitats in Northern Ireland are protected, enhanced and managed sustainably for wildlife, people and climate.

## **Key considerations for policy design**

The potential benefits of inclusion of GGRs in the UK ETS depend heavily on careful design and implementation. The UK ETS is a key tool to deliver net zero – inclusion of GGRs would need to be managed carefully in order to maximise the opportunities of GGR inclusion and to maintain the effective functioning of the market and overall integrity of the scheme.

Below we set out the key considerations for this area and how the Authority proposes to approach these questions through further work on market design, technology and timing. These will inform any decision taken by the Authority in this area.

### **Market design**

To integrate GGRs into the UK ETS market, the Authority will explore how to create a new tradeable unit for negative emissions. Further consideration will be given to the creation of this GGR allowance or credit and how it will represent the removal of carbon dioxide (CO<sub>2</sub>) (or the equivalent for other greenhouse gases) from the atmosphere, taking into account the permanence of the carbon stored. The Authority will consider how UK ETS participants will be able to purchase, trade and surrender these to meet their annual compliance obligation as they do currently with emissions allowances. A well-designed, credible GGR allowance and its careful introduction into the market will ensure that the environmental integrity of the UK ETS and market confidence is maintained.

To create this new tradeable commodity, the Authority would need to set market eligibility requirements for GGR projects. At a minimum this would mean setting out robust MRV requirements so negative emissions can be quantified, taking into account the permanence of the removal, clarifying the rights and liabilities that come with the trading of a GGR allowance and the geographical scope of potential projects. These requirements would provide market confidence, ensuring only high quality, permanent and robust removals are allowed in the UK ETS. A key message from the Call for Evidence responses was to align these requirements with existing best practice from other initiatives, and with the work that the UK Government is already doing as part of its support for GGR business models.

Once a GGR allowance has been defined, the Authority will then have to consider how it is integrated into the UK ETS over time. Most responses to the Call for Evidence favoured creating a link between GGR and the UK ETS markets, or full integration from the outset, rather than an entirely separate market. The pathway that we follow will depend on further consultation, taking into account the cost and deployment profile of GGRs over time, the implications for the UK ETS and the overall value for money.

Voluntary carbon removal markets will also play an important role in helping to deploy GGRs by unlocking private capital and reducing support costs to government. The Authority will explore how GGRs can be integrated into the UK ETS, providing a sustainable source of long-term demand through the compliance market, whilst also maximising the potential benefits of voluntary markets.

Integration of GGRs in the UK ETS will be managed in a way that ensures decarbonisation is prioritised and participants are incentivised to abate their emissions as much as reasonably possible. To avoid GGRs substituting for necessary emissions reductions, the CCC's initial advice recommended an appropriate reduction in the number of government issued UK ETS allowances as GGR allowances are introduced into the market. This would mean the overall allowance cap and trajectory for the UK ETS would be maintained even as GGRs are included. The Call for Evidence responses also highlighted other ways to ensure the incentive to decarbonise is maintained. The Authority will consider all these options further. It is important to stress that the risk of mitigation deterrence is expected to be limited in the early years of integration of GGRs in the UK ETS – the Net Zero Strategy pathways do not expect high levels of engineered GGR deployment, relative to the UK ETS cap, until the 2030s, and there will be a time lag before certain nature-based solutions sequester a high amount of carbon relative to the UK ETS cap.

## GGR technologies

At the heart of market-based approaches such as the UK ETS is the principle of technological neutrality. The Authority sets a cap which sets an overall limit on emissions – within this cap, operators are free to make the most cost-effective decisions, giving them flexibility on whether and when they invest in decarbonisation. The technology neutrality principle should be maintained when considering inclusion of engineered and nature-based GGRs. Having GGRs compete for demand in the same market could also drive innovation and spur improvements in cost and performance. Over time, the market could therefore promote those GGRs which market participants believe are the most cost effective. The Authority's role would be to set robust standards to ensure that the GGRs that are delivered are high quality, robust and contribute to wider government policy.

The Authority intends to include engineered GGR technologies, subject to further consultation, a robust MRV regime being in place and the management of wider impacts, in line with the initial advice from the CCC. This could include technologies within scope of the proposed Engineered GGR Business Model, Power Bioenergy with Carbon Capture and Storage (power BECCS) Business Model, and Industrial Carbon Capture Business Model (including Waste). This is not an exhaustive list of all the technologies under consideration. The Authority recognises that novel approaches could emerge that have the potential to remove greenhouse gases cost-effectively and at scale and therefore could be well suited to integration in the UK ETS.

### **Case study: Direct Air Capture (DAC) powered by nuclear power plant**

The UK Government is funding a variety of innovative GGR technologies, including several first-generation Direct Air Capture (DAC) technologies through the DAC and Greenhouse Gas Removals Innovation Programme. The objective of this programme is to produce several operational pilot plants by 2025, as well as realising investment, jobs, skills, and technology in this nascent sector.

One example of a project being funded is a consortium led by Sizewell C, who are developing an innovative heat-powered DAC demonstrator plant designed to capture low carbon waste heat from a nuclear power plant. This technology could offer increased efficiency and less reliance on electricity, therefore reducing the cost of removing carbon dioxide from the atmosphere. A scaled-up DAC plant linked to Sizewell C could utilise around 400 MW of heat from the nuclear power plant to capture 1.5 million tonnes of CO<sub>2</sub> per year.

The Authority will also explore the inclusion of nature-based GGRs. The CCC have raised questions around the permanence of nature-based removals and whether UK ETS inclusion could over-reward afforestation given current expectations of future UK ETS prices. The Call for Evidence also highlighted concerns about the wider land management impacts of introducing nature-based solutions. The Authority will take these into account when considering the inclusion of nature-based solutions, including the Woodland Carbon Code which has robust additionality criteria in place and mechanisms to reduce the risk of reversal. We will work with the CCC to protect the environmental integrity of the UK ETS whilst supporting the deployment of a diverse range of GGR technologies. In 2023, the existing Woodland Carbon Guarantee scheme will be used to competitively discover the woodland carbon price absent from other grant support for tree planting, helping to address current information gaps. The UK Government will also publish a Land Use Framework, setting out how we will balance multiple demands on our land including climate mitigation and adaptation.

### **Case study: the UK Woodland Carbon Code**

The Woodland Carbon Code sets out requirements for UK voluntary projects that aim to sequester carbon through woodland creation. It provides quality assurance standards for woodland projects to generate high integrity, independently verified carbon units. As well as carbon sequestration, projects also provide social and environmental benefits. These include biodiversity and habitat creation, improvements in health and wellbeing, benefits for farming, local employment and educational opportunities. The Code is internationally recognised for high standards of sustainable forest and carbon management and is endorsed by the International Carbon Reduction and Offset Alliance (ICROA), the global umbrella body for carbon reduction and offset providers in the voluntary market.

The Woodland Carbon Code has a number of mechanisms in place to ensure that the generation of carbon units are robust and verifiable. To support the permanence of the carbon stored, the scheme requires projects to set out a land management regime for the

duration of the project (up to 100 years) and any mitigating action needed to minimise loss. Projects are also required to contribute to the Woodland Carbon Buffer, which pools 20% of all units generated to safeguard the investment made by carbon buyers and protects the integrity of verified units. The Buffer can be used in the event of reversal events and projects are required to re-plenish it depending on whether the event was avoidable or unavoidable. Trees being removed from the land will also require a felling licence, with minor exceptions, and felling licences are currently subject to restocking notices. This will in effect maintain the land as woodland into the future (beyond the 100 years of a WCC agreement) by mandating the replacement of any removed trees.

## Timing and next steps

The Authority will aim to carry out a further consultation in 2023 on the inclusion of engineered and nature-based GGRs in the UK ETS. This will address how we could design the market, what market eligibility requirements we could set and when inclusion may take place alongside other relevant considerations.

The CCC have recommended that engineered removals are included in the UK ETS when they are mature (e.g. once there are multiple facilities operating) because the UK has not yet deployed such technologies at scale. However, several Call for Evidence responses argued for early inclusion as a means of providing confidence to investors to support more rapid deployment and reduce costs for GGR projects.

Timing would be assessed broadly against the considerations set out above regarding:

- The creation of a GGR allowance informed by a robust MRV framework to ensure that such allowances would represent real and verifiable climate benefits;
- Wider GGR policy, such as the development of business models for engineered GGRs and frameworks such as the Woodland Carbon Code, and an assessment of how UK ETS integration could support these different mechanisms;
- The role of VCMs in providing another source of demand for GGRs and an assessment of how to maximise their potential alongside UK ETS integration;
- The evolution of the UK ETS over time, including the changes outlined in the rest of this Government Response;
- The impact of inclusion of GGRs on the UK ETS and its participants, as well as the impacts of inclusion on GGR deployment;
- The relationship between expected GGR costs over time and the prevailing carbon price, and what integration would mean for how GGRs are funded.

This will determine a pathway by which GGRs could be integrated into the market. The Authority will consider the role of pilots and phasing GGRs into the UK ETS as part of this.

## Call for Evidence on how agriculture and land use emissions can be suitably measured, reported and verified

### Summary of Call for Evidence

This section summarises the findings of the Call for Evidence on the MRV of agricultural greenhouse gas (GHG) emissions on farm. MRV provides us with an opportunity to understand more about the source and scale of emissions in the agriculture sector, which can in turn also inform decision making by food producers, retailers, and government.

The Call for Evidence considered the potential role of MRV in agricultural business, to improve business level decisions, productivity and to reduce GHG emissions from growing food (whether animal or plant based). It sought evidence on if and why MRV is a challenge in this sector, and the role of government, businesses, and innovative technologies in overcoming these challenges.

A series of questions was asked about business activities within the farm ‘gate’; the Call for Evidence did not consider associated embedded emissions from processing and transport emissions of food or other agricultural products.

### Summary of Responses

We received 29 responses from across a range of sectors, including trade associations, farmers unions, public bodies, NGO/coalition groups, and businesses. We asked nine questions about the use and application of MRV and received 154 answers, along with more general views.

### Use of Monitoring, Reporting and Verification (MRV)

#### Summary of Responses

Question
<p><b>165) For farm businesses: are you currently using carbon audit tools? (Y/N)</b></p> <p><b>a) If so, which one(s), and what farm practices or management have you changed as a consequence of using the tool?</b></p> <p><b>b) If no, what has prevented you from using these tools?</b></p>

We received 17 responses to question 165 on the current use of carbon audit tools by farm businesses.

The first part of this question was directed at farm businesses and whether they currently use carbon audit tools. This was either not answered by, or was not applicable to, most respondents. There were three (18%) ‘yes’ responses, and three (18%) ‘no’ responses. A further two (12%), from membership organisations, cited a 50:50 split between ‘yes’ and ‘no’ in the replies received from their members.

On the question of which tools are currently being used, the most frequently mentioned were AgreCalc (seven responses (41%)), Farm Carbon toolkit (four responses (24%)), and the Cool Farm Tool (three responses (18%)). AgreCalc was identified as a tool particularly used by farmers in Northern Ireland and Scotland.

A small number of respondents detailed specific farm practices that have been changed as a consequence of using the tool, including improved soil, nutrient and livestock management, tree and hedgerow planting, reducing energy costs and increasing use of renewables. Respondents also highlighted opportunities to use the tools for benchmarking and baselining, to identify savings, and to support supply chain relationships and contractual obligations.

On factors preventing the use of carbon audit tools, farming sector organisations highlighted the difficulties farmers face in using them along with the lack of incentive or benefits. Time, complexity or cost of completing audits and/or implementing changes was mentioned by six respondents. A wider grouping of respondents cited concerns with the tools or calculators themselves.

Respondents also pointed towards existing toolkits and carbon calculators throughout the Call for Evidence responses, such as the Farm Carbon Toolkit, AgreCalc and Bangor University's Carbon Footprint tool. Respondents also highlighted the work of CSXCarbon and a report from World Wide Fund (WWF) on the opportunities of carbon markets. One respondent shared a report by Natural England highlighting a habitat probability map using satellite imagery.

Question
<b>166) What are the barriers to implementing robust Monitoring, Reporting and Verification of greenhouse gas emissions, and how can we improve record-keeping?</b>
<b>a) In the agriculture sector</b>
<b>b) In the land use sector</b>

We received 21 responses to question 166 on the barriers to implementing robust Monitoring, Reporting and Verification of GHGs and how record keeping can be improved.

Eight of the respondents, from across the range of respondent-types, cited cost or burden. Four of the respondents commented on the lack of incentives for farmers and/or businesses, with two commenting that carbon auditing benefits consultants rather than farmers.

Eight of the respondents from a variety of sectors expressed variability or lack of standardisation in calculators, codes and models as a barrier limiting confidence in MRV.

Four respondents raised concerns about the accuracy of data. A further five commented on complexity or difficulty in measuring GHGs for the sector, and specifically carbon sequestration.

Five respondents, all representative bodies for the farming sector, highlighted barriers to farmer engagement and use of tools, including time and difficulty in collecting, submitting and making use of data. Three of these respondents also commented that tools do not reflect different farm systems, business structures or unique circumstances.

Suggestions for improving record-keeping were made by ten respondents from across the different sector interests. Streamlining data collection and analysis was included in four responses, specifically the use of technology, existing applications, and online systems. Three respondents commented on a registry or platform for MRV.

<b>Question</b>
<b>167) Remote sensing technologies and earth observation could be used to compliment carbon reporting tools. Do you have any concerns about utilising this technology and what could reassure you?</b>

Sixteen respondents answered question 167 on using remote sensing technologies and earth observation to compliment carbon reporting tools.

The most common concerns about utilising these technologies were accuracy (eight responses (50%)), scalability (four responses (25%)) and cost (three responses (19%)). Two respondents (13%) highlighted the challenges of cost and access to remote sensing technologies for small farm holdings. Three (19%) suggested that purchasing countrywide Light Detection And Ranging (LiDAR) data and analysing it through one agreed set of software would be most effective.

A number of data challenges were raised, including selecting the most appropriate data sources and modalities, understanding the models used to interpret the data, and issues with data protection and ownership.

Suggestions on ways of providing reassurance centred around accuracy, robustness and building confidence. Three respondents (19%) commented on trialling and testing remote sensing technology and two on the importance of ground-truthing. The need for further research and stakeholder involvement was also raised.

In answering this question, 13 respondents (19%) from across all types also reflected on the benefits of using remote sensing and new technologies e.g. drones. Their comments included: more robust, frequent and repeatable measurements; the potential to revolutionise reporting and give greater confidence to industry; reducing costs from sampling on-farm and streamlining data collection.

<b>Question</b>
<b>168) How can carbon audit and reporting tools be used in conjunction with other business planning mechanisms?</b>

Thirteen respondents answered question 168 on how carbon audit and reporting tools can be used in conjunction with other business planning mechanisms.

Around half of the responses highlighted the benefits of carbon audit tools for assessing GHG sources and sinks and for identifying opportunities to reduce emissions from different management practices on farm, including evidence from the Farm Practice Survey which found

that 67% of farm businesses considered the importance of GHGs when taking decisions. As part of business planning, this could help improve business/resource efficiency (four responses), prioritise areas for action (two responses), and identify cost savings (one response). Three responses (23%) commented on the opportunity to improve environmental sustainability and protection; this was also linked with improving productivity and profitability. The use of carbon tools to take strategic decisions on carbon assets and identify additional income through diversification and carbon markets was mentioned by four respondents (31%).

The importance of robust data and analysis (three responses (23%)) remained a common theme, with an emphasis on verification and benchmarking to support decision-making. Two respondents (15%) commented on the need for additional measures alongside MRV, such as knowledge transfer, skills development, incentives and investment, to drive action at the farm level.

## Application of MRV to decarbonise the agriculture sector

### Summary of Responses

Question
<p><b>169) How can MRV be best utilised for the purpose of:</b></p> <ul style="list-style-type: none"><li><b>a) Decarbonising agriculture</b></li><li><b>b) Identifying both emissions mitigating and negative emissions opportunities, eg. through carbon sequestration</b></li><li><b>c) Attracting investment for carbon management in agriculture and the land use sector?</b></li></ul>

Eighteen respondents answered question 169 on how MRV can be best utilised. The question sought answers to the three purposes outlined above, and respondents answered some, or all, of these sub-sections.

Eleven respondents (61%) reflected on the best ways to utilise MRV for decarbonising agriculture. Their suggestions included both the requirements for MRV (an agreed methodology/alignment of tools), and how it could support decarbonisation (educating farmers to see their total land emissions; encouraging alternative land-use and new management practices e.g. peatland conservation).

In response to how MRV can be utilised to identify mitigating and negative emissions opportunities, ten respondents contributed recommendations. Four respondents (22%) mentioned the need for confidence in accounting, and two of those stressed the importance of national accounting across farming and land use sectors. It was also stated that government should assess how to deliver a method to balance sustainable food production with negative emissions and sequestration for long-term economic business sustainability (three responses). The need to integrate more sectors and improve the national GHG inventory was also mentioned.

There were seven responses (39%) on attracting investment for carbon management. Four respondents (22%) asserted that accurate, robust and high MRV standards can be utilised to overcome problems around additionality, leakage, permanence, and measuring and verifying actual carbon gains from on-farm sequestration. In turn, this would increase farmer and investor confidence, and support market development. Three respondents (17%) highlighted the Woodland Carbon Code and Peatland Code as a ‘mechanism’ for providing carbon sequestration opportunities and reducing emissions.

Many respondents stated further benefits that utilisation of MRV could achieve, these included: informing better farm decision-making; supporting the accuracy of supply chain scope 1 and 3 reporting; helping to assess the impact of national and devolved policy decisions; and aiding nature and biodiversity recovery.

Question
<b>170) Should eligibility to trade in sequestered carbon on farms be conditional on the vendor demonstrating that an acceptable level of farm emission reduction has been achieved? (Further work would be needed to define ‘acceptable’ levels of emissions reduction and could be sub-sector or farm specific).</b>

Nineteen respondents answered question 170 on whether eligibility to trade should be conditional on the vendor demonstrating an acceptable level of farm emission reduction.

Of these, we received three direct Yes/No responses, two (11%) responded ‘yes’ and one responded ‘no’ (5%), however there were several positive responses and a few opposing views.

Included in the positive responses was the need to provide an emissions reduction strategy for the agriculture and land-use sector; and to provide compensation of emissions through nature-based solutions, in addition to, and not as an alternative to, reducing emissions.

The opposing responses asserted that it should be independent and up to individual businesses to decide to sell credits or not, and that over time it will become conditional to demonstrate an acceptable level of farm emission reduction before trading.

In addition, eight respondents (42%) raised concerns, including around scope and exclusions, costs and unintended consequences.

Question
<b>171) Which sectors within agriculture &amp; land use should we prioritise to establish baseline data with MRV?</b>

Thirteen respondents answered question 171 on which sectors to prioritise to establish baseline data with MRV.

Views varied from agreeing that some sectors should be prioritised to believing that it is unfair to prioritise any one sector.

Five respondents (39%) believed that priority should not be given to any one sector and were unclear as to why priority should be given to any sector. Their reasons included: many UK farms have mixed status; some tools are perceived to be more advanced than others; and that all sectors should be prioritised to ensure accurate data.

However, five respondents (39%) suggested sectors that should be prioritised. The most frequently mentioned were the dairy sector (four responses) and the beef, pig and sheep sectors (three responses).

It was also raised that any scheme should not incentivise a drop in production, leading to increasing imports and potential emissions offshoring.

Question
<p><b>172) What do you consider government's role should be in farm and land use based MRV?</b></p> <p><b>a) Should government consider mandating the use of MRV for the sector or sub-sectors?</b></p> <p><b>b) To support this, should government introduce standardised protocols or tools, beyond the voluntary PAS2050 code?</b></p> <p><b>c) Or alternatively, should government provide a standardised framework for the market to develop protocols to achieve the data reporting outcomes required?</b></p>

We received 20 responses to question 172, some of these responded to parts (a)-(c), but in most cases, the sub-questions were either not answered or were not applicable.

On whether government should mandate the use of MRV, we received two definitive responses - one (5%) 'yes' and the other 'no' (5%). Four further respondents indicated that they did not support government mandating the use of MRV.

On whether government should introduce standardised protocols or tools (beyond the voluntary PAS2050 code), there were two (10%) direct 'yes' responses, out of six responses in total. All answers leaned in favour of the introduction of standardised protocols or tools.

The third part of the question posited the alternative for government to provide a standardised framework for the market to develop protocols to achieve the required data reporting outcomes. Of the nine respondents, most were broadly supportive of this approach. Five responded directly with a 'yes' (25%).

Sixteen respondents (80%) answered this question more generally on the role of government in farm and land use based MRV. Several respondents proposed that government provide

support to overcome initial financial barriers, including to enable data collection and embed GHG auditing, action, and review into farm businesses. Similarly, three respondents (15%) suggested that government support farmers and land managers through incentive programmes for reducing agricultural GHG emissions and exploring sequestration potential.

Two respondents (10%) suggested that government should prioritise differently; by focusing on education and investment in areas such as standards development, data collection, advice, and information systems.

A small number emphasised a great and urgent need for harmonisation through the standardisation of measurement, and across MRV protocols. It was also noted that further discussions were necessary to determine whether harmonisation would extend to include the Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland, and that it would be beneficial for the Governments to run pilots to aid decisions to standardise tools or provide a standardised framework. The need for government to work in partnership with industry to develop protocols was also raised.

Question
<b>173) Is voluntary monitoring, reporting and verification in the agricultural and land use sectors likely to achieve sufficient uptake and accuracy to improve business efficiency, decarbonisation and decision making by farmers, retailers and government?</b>

Eighteen respondents answered question 173 on whether voluntary MRV is likely to achieve sufficient uptake and accuracy.

A range of different views were expressed on this question and there was a lack of consensus. Four respondents (22%) stated that voluntary reporting would not be sufficient. Three respondents (17%) preferred voluntary reporting and felt that legislation should be a final resort.

Most of the respondents suggested measures to aid voluntary uptake, these included: regulated markets and market mechanisms to purchase carbon credits; agreed nationwide standards/recording and data capture/accounting methodologies; stimulated demo/trial approaches; and the removal of barriers to implementation e.g. cost, up-skilling and training, along with effective communication of the benefit to businesses, were suggested by a few respondents.

There were also many responses that mentioned incentivisation, including through the supply chain, e.g. in the dairy sector, where it is estimated that 40% of UK dairy farms have undertaken a carbon footprint, many due to contractual arrangements with their milk buyers.

## The Authority Response

The Authority would like to thank all individuals and organisations who took the time to respond to the Call for Evidence. The submissions have been valuable in identifying and exploring key

themes relating to MRV opportunities for the agriculture sector, barriers to the use and application of MRV, and how to improve carbon auditing.

As set out in the consultation, the Authority is not proposing to expand the UK ETS to include agriculture at this time. However, the consultation on the UK ETS provided a suitable opportunity for the UK Government, Welsh Government, Scottish Government and the Department of Agriculture, Environment and Rural Affairs (DAERA) for Northern Ireland to issue the Call for Evidence, to begin understanding and enhancing the MRV of emissions for the agriculture and land use sectors.

The Call for Evidence is a vital first step in developing our understanding of current levels and approaches to MRV across the sector, and the next steps to be taken to strengthen the robustness in MRV of emissions across farm businesses. The findings will be used by the UK Government, Welsh Government, Scottish Government, and DAERA for Northern Ireland to identify and consider all the options for improving MRV as a valuable tool to help the sector decarbonise.

As set out in the UK Government's 'Net Zero Growth Plan', the findings from the Call for Evidence alongside additional evidence gathered through ongoing research projects will be used to develop a harmonised approach for measuring carbon emissions from farms in England. The UK Government will also set out by 2024 how farmers will be supported to understand their emission sources through carbon audits and take further actions to decarbonise their businesses, including through Environmental Land Management schemes.

## **Opportunities and barriers to the use and application of MRV in agriculture**

The Authority recognises the benefits and potential value of access to scientifically robust and trusted carbon accounting tools for use at the farm level. This is key to informing the source and scale of GHG emissions, and in assessing opportunities to reduce emissions from different management practices on farm.

Use at the farm level can enable farmers to unlock private investment to support the transition to low carbon farming as well as increase broader understanding of GHG emissions. Improved data collection through the use of these tools can provide productivity benefits by enabling businesses to identify potential areas to make efficiency gains, apply innovations and improve farm management, for example through developing and implementing a nutrient budget and management plan on farm. All of these can contribute to positive behavioural change and improve overall business efficiency.

Within the Call for Evidence chapter, we recognised the lack of a standard approach to farm-level emissions monitoring and reporting, and that variable data results from farm carbon assessment tools have led to low confidence in the value and reliability of carbon audits. This was also clearly recognised within the responses as a significant barrier to wider uptake of MRV across the agriculture sector.

The responses highlight a range of difficulties that farmers face in using carbon audit tools, including the cost, time and complexity involved in collecting, submitting and making use of the

data. Respondents also indicated that tools do not adequately reflect farm businesses and structures, nor sufficiently account for all carbon interactions in the system, particularly carbon sequestration.

## **Improving MRV for agriculture**

The feedback from the Call for Evidence supports the need for robust MRV tools with improved consistency. It also suggests a potential role for government in helping establish a framework for tools, as well as driving greater uptake of tools in the sector and innovation in new technologies.

## **Strengthening the framework/ standardisation of tools**

The need to improve carbon audit tools, by making them more scientifically robust and harmonised in their modelling and, ultimately, data outputs, but also by making them more straightforward and user-friendly, would give greater confidence to farmers and help increase uptake. It would also give greater confidence to investors to further stimulate private investment and help drive the sector to decarbonise.

Respondents suggested that government should play a role in introducing standardised protocols or frameworks for carbon audit tools, and the market, to achieve required data reporting outcomes.

To better understand the deviation between carbon audit tools and identify areas to strengthen for greater data output consistency, Defra has commissioned a two-year '[Harmonisation of Carbon Accounting Tools for Agriculture' research project](#)'. Model farms representing Defra's ten Robust Farm Types are being used to investigate the extent to which commonly used carbon calculators diverge in their estimates of carbon footprints. This project is due to end in summer 2023 and aims to target the development of improved methodological guidance to improve the consistency of results across tools, as well as assisting users in the selection of the most suitable tool for their farm business needs.

Existing guidance on farm-scale auditing of emissions, in the form of the Publicly Available Specification (PAS) 2050 standard, was co-developed by Defra and provides information on how to develop MRV standards for agricultural products. However, this is voluntary guidance and currently does not go far enough to limit divergence between tool outputs. The findings of the 'Harmonisation of Carbon Accounting Tools for Agriculture' research project could provide a first step towards improved standards and guidance, including through our ongoing work with the British Standards Institute, and supporting the development of common metrics and standards through the Food Data Transparency Partnership.

Building on the findings from this Call for Evidence alongside outputs from these existing work areas, Defra will develop a harmonised approach for measuring carbon emissions from farms in England.

## **Supporting the uptake of carbon audits across agriculture**

Responses from the Call for Evidence also point to a role for government in helping address the initial cost barrier to the use of carbon audit tools. Some responses proposed that government should provide support through incentive programmes.

In Scotland, support for farmers to undertake Carbon Audits has been provided under the ‘Farm Advisory Service’ and under ‘Preparing for Sustainable Farming’. Through the Farm Advisory Service, farmers can access subsidised advice and resources aimed at increasing the profitability and sustainability of farms and crofts. The latter focuses on incentives to farmers and crofters, including funding towards a carbon audit, to help them understand their carbon emissions and on-farm sequestration, identifying recommendations that can lower these emissions and increase efficiencies.

Across Wales, farmers registered with Farming Connect can receive support for calculating the carbon footprint of their businesses. The Welsh Government is considering what role the Sustainable Farming Scheme (SFS) can play in bringing data together in a consistent and user-friendly way, to help farmers understand their carbon footprint. An options appraisal is currently underway which is investigating a Wales-specific carbon calculator which could be rolled out through the SFS. The SFS proposals, which are currently subject to a Co-Design process, propose that the carbon calculator is a universal action under the scheme but could also be made available to farmers who do not choose to enter the SFS. The calculator will be combined with knowledge transfer and innovation services so that farmers are guided through actions specific to the carbon calculator results for their farm.

In Northern Ireland, DAERA is developing an industry-led farm carbon benchmarking programme. This programme will help enable farmers to acquire a knowledge and understanding of the sources of GHG emissions and capture on their own farms.

In England, support is currently provided through Defra’s ‘Future Farming Resilience Fund’ which offers free business advice for farmers. Six of the independent providers are offering advice around carbon audits as one of the Defra-funded services available until March 2025. Looking forward, by 2024 Defra will set out how farmers will be supported to understand their emission sources through carbon audits and take further actions to decarbonise their businesses, including through Environmental Land Management schemes.

As part of Defra’s Environmental Land Management Test and Trial Programme, the National Farmers’ Union (NFU) Net Zero Test and Trial explored how carbon calculator benchmarking can help farmers in England understand their current environmental GHG performance, and how this may inform land management planning. It considered the role of advice and support in the use of GHG calculators to raise levels of awareness and encourage behaviour change to progress to net zero. The findings, as published in a report in December 2021, demonstrated the value of advice, including support from suitably qualified advisers, in helping farmers understand carbon audit tool data outputs and improving the likelihood of successfully reducing emissions following an audit. The findings are continuing to inform policy scoping as part of the reform of agricultural policy in England.

Looking forward, we want farmers and land managers to be able to make informed choices about reducing emissions and seizing sequestration opportunities by blending private investment opportunities with our new government support schemes. The payment principles set out in 2021 confirmed our aim to ensure that participants in the new Environmental Land Management schemes can earn income from both public and private sector sources so long as they are compatible, pay for different or additional outcomes and do not pay for the same action twice.

In March 2023, the UK Government published its Nature Markets Framework<sup>80</sup> for scaling up private finance for nature recovery and sustainable farming through nature markets. This set out core principles for market growth and our plans to support the development of new standards for a range of ecosystem services.

### **The role of supply chain agreements in driving uptake of carbon audits**

A further opportunity for incentivising the use of carbon audits in the sector is through supply chain contractual conditions. Large companies are already required to report on scope 1 and 2 GHG emissions, and the Food Data Transparency Partnership (FDTP) will explore how to extend this to capture Scope 3 emissions – those across the supply chain which fall outside of the businesses direct control. Working with key industry and civil society stakeholders the FDTP will consider the development of consistent reporting protocols and data for scope 3 emissions. This will build on work currently happening where several larger retail companies have, or are exploring, carbon auditing of farm businesses under contract to them. This was recognised by the Call for Evidence and the responses received which pointed to the example of the dairy industry, where it is estimated that 40% of UK dairy farms have undertaken a carbon footprint assessment, many due to contractual arrangements with their milk buyers.

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<https://www.gov.uk/government/publications/nature-markets>

# Chapter 8: Operational amendments to UK ETS

This chapter covers proposals set out in Chapter 9 of the consultation.

The Authority has decided not to implement appeal routes for Authority decisions at this time. We will keep this under review.

We are including the failure to submit information penalty and the proposed deficit notice (and associated penalty). This will come into effect by late 2024 or 1 January 2025.

## Appeal Routes

### Summary of Proposal

In the UK ETS Order<sup>81</sup>, article 70 sets out the right of operators, aircraft operators and other persons in the scheme to appeal against certain decisions made by the regulator and registry administrator. The UK ETS Regulators are the OPRED, EA, SEPA, NRW and the NIEA. The Order does not give operators the right to appeal against decisions made by the Authority.

We considered providing a statutory appeal route against several decisions made by the Authority.

Question
<b>187) For which other decisions made by the Authority would it be desirable to provide a statutory appeal route?</b>

### Summary of Responses

The Authority received four responses to this question. All four were broadly in favour of providing a statutory appeal route for decisions made by the Authority but did not provide evidence as to why this was desirable or necessary. Two responses mentioned specific decisions that it would be desirable to see an appeal route for, notably the activity level changes (ALC) process and associated allocation of free allocation.

### The Authority Response

Given the limited response and evidence provided on this question, the Authority has decided not to implement appeal routes for Authority decisions at this time. We will keep this under

<sup>81</sup> <https://www.legislation.gov.uk/ukdsi/2020/9780348209761/contents>

review and in the case of further evidence emerging from stakeholders as to why we should implement such appeal routes, we will revisit these proposals and consult further on specific appeal routes.

## Penalties

### Summary of Proposals

In the Developing the UK ETS consultation, the Authority consulted on the inclusion of one penalty and a new type of enforcement notice, called a deficit notice, backed up with a penalty if it is not complied with.

The new penalty relates to the failure to submit information to Regulators detailed in article 27A of the UK ETS Order. The deficit notice alters the procedure for instances where operators fail to surrender sufficient allowances for their emissions by the surrender deadline.

#### Failure to submit information

We proposed that a penalty would apply when operators of installations fail to submit to Regulators the information detailed in article 27A of the UK ETS Order. This article relates to information to be submitted before the 2026-2030 allocation period where an operator does not make an application for free allocation or to be in either of the opt-out schemes. Where operators fail to comply with the notification requirements, they should be liable to a penalty of £5,000.

#### Deficit notice

Currently, when an operator or aircraft operator fails to surrender allowances by the surrender deadline, as required by the Order, they are subject to an inflation-adjusted penalty of £100 per allowance not surrendered. The difference between allowances required and allowances surrendered (the ‘deficit’) is added to their reportable/aviation emissions for the next scheme year. However, failure to surrender the associated allowances does not currently incur an additional £100/allowance penalty.

The Authority proposed that the regulator must issue a ‘deficit notice’, requiring the operator or aircraft operator to surrender the deficit of allowances by a deadline. This deadline will be the following 30 April, except in situations such as where the deficit arises in a permit surrender or revocation situation, when the deadline will be set by the Regulator. If the operator or aircraft operator does not comply with the deficit notice, we proposed that a mandatory penalty should be imposed. The mandatory penalty will be calculated as a product of the number of outstanding allowances and 1.5x the carbon price calculated under article 46 for the relevant scheme year. Additionally, we proposed that if the deficit is not surrendered within a further month of the deadline, a Regulator may issue an ‘initial notice’ so that a daily penalty starts to accrue until the deficit is surrendered. This daily penalty should be set at a daily rate of £1,000 for each day that the operator or aircraft operator fails to surrender the deficit, beginning with the day on which the initial notice is given.

## Surrender and revocation provisions.

Under the UK ETS, an operator's permit may be surrendered or revoked. In these cases, a surrender or revocation notice is issued, which contains a number of requirements. In surrender / revocation situations, if the operator does not surrender enough allowances to comply with the requirements of the surrender/revocation notice, it will be liable to a civil penalty. However, there is no express obligation to surrender any deficit of allowances, which is inconsistent with the policy principle that allowances should always be surrendered to cover emissions. It was proposed that the new deficit notice should cover these situations, as well. Regulators would also gain powers to obligate operators who have surrendered/revoked permits to make up any deficit in allowances if historic emissions reporting errors are uncovered.

### Questions

- 190) Do you agree with the inclusion of this £5000 penalty in the UK ETS? (Y/N) Please explain your answer.**
- 191) Do you agree with the recommendation that, instead of the deficit being added onto the next year's surrender obligation, the Regulators should be empowered to issue a deficit notice to require operators/aircraft operators who fail to surrender allowances to cover any deficit? (Y/N) Please explain your answer.**
- 192) Do you agree that the deficit penalty should be applied in two parts, the first being a mandatory penalty when an operator or aircraft operator fails to make up a deficit by the date specified in a deficit notice, and the second a discretionary daily penalty that applies if the operator/aircraft operator has not made up the deficit within a month of the deficit notice deadline? (Y/N) Please explain your answer.**
- 193) Do you agree with the suggested penalty amounts, with the mandatory penalty calculated as the number of outstanding allowances multiplied by 1.5x the relevant carbon price and the additional daily penalty set at £1,000 a day until the operator/aircraft operator surrenders the deficit? (Y/N) Please explain your answer.**
- 194) Do you agree with the recommendation that the Regulators should be empowered to issue further notice requiring operators who fail to surrender allowances in line with surrender / revocation notices to surrender the allowance deficit? (Y/N) Please explain your answer.**
- 195) Do you agree that penalties for the above should align with those proposed for the failure to surrender allowances to cover a deficit in non-surrender / revocation situations? (Y/N) Please explain your answer.**

**196) What are your thoughts on implementing powers to pursue operators after their permit has been surrendered / revoked if historic errors are discovered in emissions reporting? Please explain your answer.**

## Summary of Responses

We received 12 responses to question 190 regarding the inclusion of the £5000 penalty, with seven (58%) in favour. Respondents in support of the inclusion highlighted that this would bring the UK ETS in line with other Environmental Permitting legislation and building a robust enforcement regime for the UK ETS will be important for its credibility and for its ultimate success in delivering emissions reductions. Of those that did not agree, some highlighted that businesses may have financially confidential data that they legitimately do not want to submit, and they could be exempted from disclosing this.

In response to question 191, eight (62%) of the 13 respondents agreed with the proposal. One respondent highlighted that the allowance surrender requirements and deadlines embedded within the monitoring, reporting and verification (MRV) process is clearly outlined and sending out a signal of non-compliance will ensure consistency across all participants. Two (15%) respondents who disagreed with the proposal highlighted that operators might be prevented from securing allowances to meet their deficit due to lack of liquidity in the carbon market. One comment was that as the scheme years' allowances and cap run year-on-year it does not seem appropriate for a deficit in the scheme year to be attributed to a future year.

In response to question 192, seven (58%) of the 12 respondents were in favour of two-part implementation. In response to question 193, seven (47%) of the 15 respondents were in favour of the penalty amounts. In response to question 194, 11 (73%) of the 15 responses were in favour of the proposal. In response to question 195, 10 (71%) of the 14 responses agreed that the penalties should align with the deficit penalty above. Of those in support, respondents agreed that penalties should be sufficiently disciplinary as to encourage compliance with the scheme. Of those in disagreement, one suggested that the proposal was heavy handed and agreed that the penalty should be applied on a discretionary basis. Two (13%) respondents to question 193 suggested that penalty amounts were steep/excessive. Three (25%) respondents to question 192 highlighted the need for clear guidance from the regulator on the circumstances in which the discretionary daily penalty would/would not be applied.

## The Authority Response

The Authority will introduce the failure to submit information penalty, as it is proportionate and consistent with how similar breaches are treated in the UK ETS.

Operators have a statutory duty to submit the information contained in article 27a of the UK ETS Order. Whilst the existing duty can be enforced by an enforcement notice under article 44 of the UK ETS Order, a direct penalty will allow smoother and more consistent enforcement and will bring the situation in line with similar enforcement mechanisms in the wider UK ETS. We will aim to implement by 1 January 2025 at the latest.

The Authority has decided to include the deficit notice and associated penalty, as proposed. The separate protocols for the accounting of allowances for recent emissions and allowances to cover deficits from previous scheme years will help ensure clarity. The proposed deficit notice provides a targeted mechanism to enforce operators to surrender any deficit of allowances, which is consistent with the policy principle that allowances should always be surrendered to cover emissions. The Authority recognises concerns raised about the level of the fines, but notes that they must be set sufficiently high to effectively encourage compliance with the obligations that the scheme sets on operators. The penalty amounts have been agreed as they are proportionate to the type of breach to which they will apply.

The Authority notes concerns about the availability of allowances for operators but that mechanisms are in place to ensure liquidity in the UK carbon market. We will aim to implement the deficit notice/penalty by 1 January 2025 at the latest.

We will also implement the proposal outlined above to extend these deficit notices and penalties to cases where operators have surrendered their permits or had them revoked, on the same timescale.