



UK Government



Scottish Government
Riaghaltas na h-Alba
gov.scot



Llywodraeth Cymru
Welsh Government



Department of
Agriculture, Environment
and Rural Affairs

An Roinn
Talmhaíochta, Comhshaoil
agus Gnóthaí Tuaithe

Department o'
Fairmin, Environment
an' Kintra Matters

www.daera-ni.gov.uk

Report on the Functioning of the UK Carbon Market for 2023

A joint report from the UK ETS Authority



© Crown copyright 2024

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3 or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: psi@nationalarchives.gsi.gov.uk.

Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.

Any enquiries regarding this publication should be sent to us at: emissions.trading@energysecurity.gov.uk

Table of Contents

1. Introduction	4
2. UK ETS Infrastructure	5
UK Emissions Trading Registry	5
3. UK ETS participants	6
Installations overview	6
Aviation overview	6
Registry account holders	7
4. Functioning of the Carbon Market	8
Supply: UKAs released in 2023	8
Free allocation	8
Participating in UK ETS auctions	9
Auction results in 2023	9
Cost Containment Mechanism	11
5. Market Oversight	12
6. Compliance	13
Compliance statistics for the 2023 scheme year	14
Emissions	14
Surrender obligations	14
7. Conclusions and outlook	16

1. Introduction

The UK Emissions Trading Scheme (UK ETS) was established on 1 January 2021 by the UK ETS Authority (UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs for Northern Ireland, (DAERA)) to incentivise cost-effective carbon emissions reduction in the industrial and power sectors (“Operators”), and aviation sectors (“Aircraft Operators”) as part of our plans to deliver against our net zero commitments.

This report on the functioning of the UK carbon market for scheme year 2023 represents a synthesis of existing publicly available material. It is presented in accordance with the UK ETS Authority’s commitment to provide transparency wherever possible in the performance of the scheme.

2. UK ETS Infrastructure

The UK ETS was established by The Greenhouse Gas Emissions Trading Scheme Order 2020 (the Order). The Order was subsequently amended by several statutory instruments to refine the scheme. These included provisions for the free allocation of UK Allowances (UKA) and the UK ETS Registry, as well as a series of technical and operational amendments to improve the running of the scheme. Regulations under the Finance Act 2020 established rules for auctioning UKAs and mechanisms to support market stability.

UK Emissions Trading Registry

The UK Emissions Trading Registry (the “Registry”) tracks the number of UKAs held in scheme participants’ accounts and the transactions between accounts. As part of their compliance obligations, Operators and Aircraft Operators are required to use the Registry to surrender UKAs equal to their reportable emissions or aviation emissions respectively. As well as containing the accounts for Operators and Aircraft Operators, the Registry contains trading accounts which are used for the holding and trading of UKAs.

The Registry is provided and maintained by the UK ETS Authority, with the Registry Administrator (the Environment Agency on behalf of all regulators) carrying out the day-to-day operations and acting as the point of contact for the holders and authorised representatives of Registry accounts.

The Manage your Emissions Trading Scheme (METS) system is used for the permitting, monitoring, reporting and verification of UK ETS participants activities under the UK ETS.

3. UK ETS participants

The UK ETS applies to energy intensive industries, the power generation sector and the aviation sector. Activities in scope of the UK ETS are listed in Schedule 1 (Aircraft Operators) and Schedule 2 (Operators) to the Order.

Installations overview

The UK ETS applies to regulated activities which result in greenhouse gas emissions, including combustion of fuels on a site where combustion units with a total rated thermal input exceeding 20MW are operated (except in installations where the primary purpose is the incineration of hazardous or municipal waste).

Under the hospitals and small emitters (HSE) scheme, there are simplified provisions for hospitals and installations with emissions lower than 25,000t CO₂e per annum, where the installation carrying out the activity of combustion has rated thermal capacity below 35MW. HSEs are subject to emissions targets instead of having UKA surrender obligations. There is the option for HSEs to participate in the main scheme if they so wish.

If eligible, installations with emissions lower than 2,500t CO₂e per annum may obtain ultra-small emitter (USE) status. USEs are not required to hold a permit but are still required to monitor emissions and must notify their regulator if they go over the threshold.

There are six power generating stations in Northern Ireland that do not participate in the UK ETS as they remain as participants in the EU ETS, under the terms of the Windsor Framework, to protect the operation of the Single Electricity Market on the island of Ireland.

Aviation overview

In 2023 flights covered by the UK ETS included UK domestic flights, flights between the UK and Gibraltar, flights departing the UK to European Economic Area States, and flights departing Great Britain (England, Scotland and Wales) to Switzerland conducted by all Aircraft Operators, regardless of nationality. As in the EU ETS, certain flights are exempt from regulation, for example, humanitarian flights. Further information is available at <https://www.gov.uk/guidance/uk-emissions-trading-scheme-for-aviation-how-to-comply>.

Registry account holders

Installations - In 2023 681 installations had obligations to surrender UKAs. This applies to installations with an open registry account and reported emissions in 2023 greater than zero.

Aviation - There were 387 aircraft operator holding accounts held by Aircraft Operators with obligations to surrender UKAs for the 2023 Scheme Year. This applies to aircraft operators not excluded from the UK ETS in 2023 with an open registry account and reported emissions greater than zero.

Trading accounts - There were 202 trading accounts held in the Registry in 2023.

4. Functioning of the Carbon Market

Supply: UKAs released in 2023

In the response to the 'Developing the UK Emissions Trading Scheme' consultation, the Authority committed to resetting the UK ETS cap for the 2021-2030 phase to be consistent with our net zero objectives. This meant reducing the cap to 936 million UKAs, a drop of 30% over the course of this phase. This adjustment still allows flexibility to manage market and carbon leakage risks.

To smooth the transition to the net zero cap, the UK ETS Authority announced it would release 53.5 million additional UKAs from the reserve pots to the market between 2024 and 2027, thus ensuring no sudden drop in UKA supply between 2023 and 2024. These allowances have already been created in previous scheme years within the overall cap limits, so the strength of overall ambition will not be affected.

For the calendar year 2023, the UK ETS Authority initially issued 36,856,294 UKAs through free allocation and 78,737,500 UKAs via auction.

Free allocation

To reduce the risk of carbon leakage to UK businesses, operators in vulnerable sectors covered by the UK ETS can apply to be provided with a free allocation of UKAs.

The table at <https://www.gov.uk/government/publications/uk-ets-allocation-table-for-operators-of-installations> contains a preliminary list of each installation's free allocation for the 2021-2025 allocation period. This includes amendments to stationary installations' free allocation due to an activity level change (ALC).

The annual ALC reporting process ultimately determines whether an installation is receiving too much, or too little, free allocation based on their actual emissions data for the two previous years. When the level of activity at an installation either increases or decreases by more than 15% when compared to the Historic Activity Level (HAL), the level of free allocation entitlement is adjusted. This may mean retrospectively adjusting free allocation entitlement through an allocation period (i.e. 2021-2025). Free allocation entitlement for the next allocation period will be determined by collecting new baseline data in 2025.

The list of free allocation entitlements for Aircraft Operators for the 2021-2025 allocation period can be found at <https://www.gov.uk/government/publications/uk-ets-aviation-allocation-table>. Aviation free allocation is only awarded to Aircraft Operators that are captured by the scheme in that scheme year. The amount of free allocation awarded to an Aircraft Operator may also be adjusted where it exceeds emissions in a scheme year. Aircraft Operators are not subject to the ALC process described above.

Participating in UK ETS auctions

Participants (Operators, Aircraft Operators and traders) wishing to take part in UK ETS auctions must register as bidders with ICE Futures Europe (ICE), the contracted auction platform provider. Delivery of UKAs following any successful bid from the primary market, and trading of UKAs on the secondary market can only take place within the Registry, the online application used to record where UKAs are held. Auctions of UKAs were hosted on a fortnightly basis on the ICE platform during 2023.

Auction results in 2023

The total number of UKAs available for auction in 2023 was 78,737,500.

The 2023 auction calendar was first published by ICE on 28 October 2022, with a revised version published by ICE on 5 September 2023. The revised calendar took account of the updated figures for Aircraft Operators' aviation free allocation entitlements, which increased from the initial estimate. The amendment to the 2023 auction volume was a reduction of 119,500 UKAs spread across auctions to the end of the year from and including the 20 September 2023 auction.

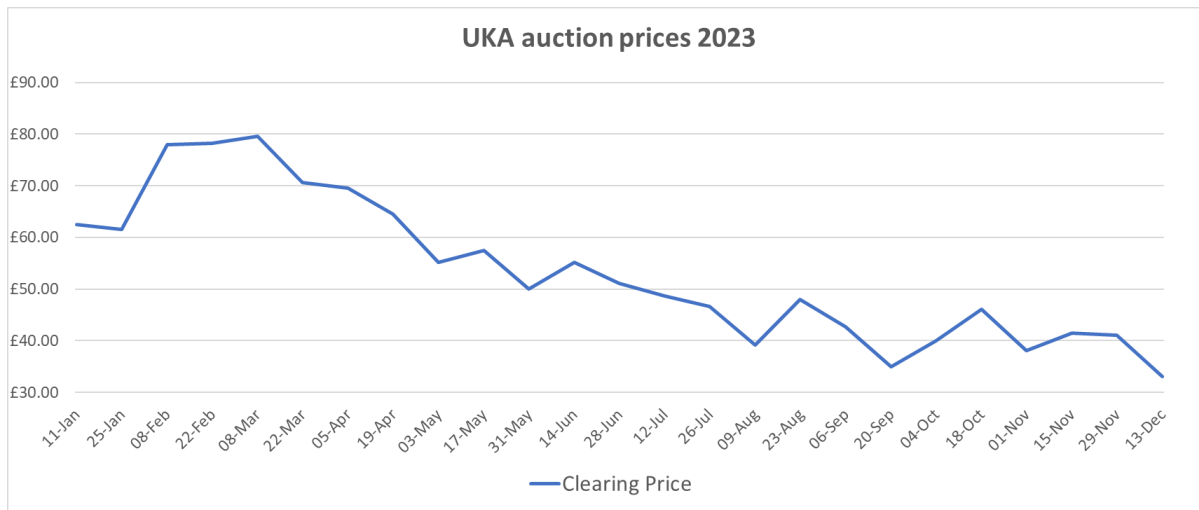
All 25 auctions in 2023 successfully cleared. The number of UKAs auctioned and the clearing price at each auction in 2023 are set out in Table 1 below.

Table 1: Auction outcomes for the 2023 scheme year

Auction date	No. of UKAs auctioned	Clearing price	Revenue
11-Jan	3,154,500	£62.50	£197,156,250
25-Jan	3,154,500	£61.56	£194,191,020
08-Feb	3,154,500	£78.00	£246,051,000
22-Feb	3,154,500	£78.24	£246,808,080
08-Mar	3,154,500	£79.55	£250,940,475
22-Mar	3,154,500	£70.70	£223,023,150
05-Apr	3,154,500	£69.51	£219,269,295
19-Apr	3,154,500	£64.50	£203,465,250
03-May	3,154,500	£55.22	£174,191,490
17-May	3,154,500	£57.50	£181,383,750
31-May	3,154,500	£50.05	£157,882,725
14-Jun	3,154,500	£55.25	£174,286,125
28-Jun	3,154,500	£51.12	£161,258,040
12-Jul	3,154,500	£48.61	£153,340,245
26-Jul	3,154,000	£46.62	£147,039,480
09-Aug	3,154,000	£39.22	£123,699,880
23-Aug	3,154,000	£48.03	£151,486,620
06-Sep	3,154,000	£42.75	£134,833,500
20-Sep	3,137,000	£35.00	£109,795,000
04-Oct	3,137,000	£40.00	£125,480,000
18-Oct	3,137,000	£46.12	£144,678,440
01-Nov	3,137,000	£38.11	£119,551,070
15-Nov	3,137,000	£41.52	£130,248,240
29-Nov	3,137,000	£41.12	£128,993,440
13-Dec	3,136,500	£33.10	£103,818,150

The clearing price at auctions in figure 1 ranged between a low of £33.10 (13 December) and a high of £79.55 (08 March). The total number of bidders per auction fluctuated between 15 and 20 total bidders per auction. On the secondary market, the carbon price (i.e. the end of day settlement price for the futures contract) ranged between £33.60 (13 December) and £80.00 (22 February).

Figure 1: UKA auction prices for the 2023 scheme year



Cost Containment Mechanism

The UK ETS has a Cost Containment Mechanism (CCM) that is triggered if current prices are elevated for a sustained period relative to a historic average. The CCM is triggered if the average of the end-of-day settlement prices for the UKA December futures contract over a given month is more than 3 times higher than the comparator prices of the reference period (i.e. the average price of such contracts for each of the three previous months) for 6 consecutive months. The UK ETS Authority must then assess the nature of the price movements in question and decide whether and to what extent to intervene by bringing increased supply to future auctions. Further information is available at <https://www.gov.uk/government/publications/taking-part-in-the-uk-emissions-trading-scheme-markets/taking-part-in-the-uk-emissions-trading-scheme-markets>.

The CCM was not triggered in 2023.

5. Market Oversight

The Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 sets out that the carbon allowances of both the EU ETS and UK ETS (i.e. EUAs and UKAs) are “financial instruments”. This means that rules applicable to traditional financial markets, including carbon derivatives traded on leading platforms or over-the counter (OTC), also apply to the spot segment of the secondary carbon market (transactions in emission allowances for immediate delivery in the secondary market). This segment is thus put on equal footing with the derivatives market in terms of transparency, investor protection and integrity. Oversight in the primary market for UKAs is covered by the Greenhouse Gas Emissions Trading Scheme Auctioning Regulations 2021, other than issues related to market abuse.

Other pieces of financial markets legislation apply. For example, the UK Market Abuse Regulation (UK MAR) which covers transactions and conduct involving emission allowances, on both primary and secondary markets. The Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 also applies.

The Financial Conduct Authority (FCA) is responsible for monitoring the market under the existing market abuse rules, both with respect to the auctions and the secondary market. The FCA has the power to impose remedial action or sanctions when they decide that certain behaviours give rise to market abuse. To allow the FCA to carry out their market monitoring task, the financial markets legislation establishes several reporting and transparency requirements applicable to trading venues. This includes the requirement for trading venues and investment firms to communicate to the FCA detailed data on transactions in emission allowances or their derivatives, carried out on the trading venues and OTC. The reporting requirements also include an obligation for trading venues and investment firms to provide the FCA with position data as regards emission allowances as part of the transparency requirements, trade data and weekly aggregated position data are made public by trading venues and investment firms.

6. Compliance

The UK ETS regulators are responsible for monitoring compliance with the UK ETS Regulations and taking any necessary enforcement action. This includes conducting operational functions such as issuing and ensuring compliance with permits for Operators and emissions monitoring plans (for Aircraft Operators).

The regulators for each of the UK nations, controlled waters, territorial sea, and the UK sector of the continental shelf are listed in article 10 of the Order and set out in Table 2 below.

Jurisdiction	Regulator
England (and Aircraft Operators registered or resident outside the UK)	Environment Agency (EA)
Scotland	Scottish Environment Protection Agency (SEPA)
Wales	Natural Resources Wales (NRW)
Northern Ireland	Northern Ireland Environment Agency (NIEA)
Offshore oil and gas	Offshore Petroleum Regulator for Environment and Decommissioning (OPRED)

Each year, Operators and Aircraft Operators covered by the scheme must surrender UKAs to cover their reportable emissions or aviation emissions respectively. Each UKA represents one tonne of CO₂ equivalent. The Order provides for an excess emissions penalty of £100 (indexed to inflation) for each UKA a participant fails to surrender by 30 April in the following year.

The UK ETS Authority published a report based on the Registry compliance status as of 1 May 2024 – available at <https://reports.view-emissions-trading-registry.service.gov.uk/ets-reports.html>. It details the cumulative surrender and emissions figures for each Operator and Aircraft Operator that participated in the 2023 scheme year. Since that date, the emissions figures may have been revised and any over or under-surrender position corrected.

Compliance statistics for the 2023 scheme year

Emissions

Emissions recorded in the third compliance year (2023) of the UK ETS were 96,757,682 tonnes of carbon dioxide equivalent greenhouse gas (tCO₂e).

This compares to 110,618,346 tCO₂e in 2022, a year-on-year decrease of 13,860,664 tCO₂e. This change was largely driven by a substantial decrease in UK ETS-covered power sector emissions from 48,193,462 tCO₂e to 37,056,676 tCO₂e. This decrease of 11,136,786 tCO₂e represents a reduction of 23 per cent of emissions in this sector, and forms 80 per cent of the overall decrease in total UK ETS emissions.

Also accounted for in 2023 were 50,900,178 tCO₂e UK ETS-covered industry emissions, a slight drop from 54,658,197 tCO₂e in 2022. In addition, aviation emissions were at 8,800,828 tCO₂ in 2023, which were up from 7,766,687 tCO₂ in 2022, representing a 13 per cent increase.

Surrender obligations

- **Installations** – Over the first three UK ETS scheme years, 295,383,970 UKAs have been surrendered against total reportable emissions of 295,206,873 tCO₂e, representing an overall compliance rate of 100.06%.

Of the 681 Operators with a 2023 surrender obligation, 679 had fully met their surrender obligations by the 30 April deadline.

- **Aviation** – Over the first three UK ETS scheme years, 20,003,928 UKAs were surrendered against total aviation emissions of 20,053,453 tCO₂, representing an overall compliance rate of 99.75%.

For 2023, there were 387 Aircraft Operators with AOHA registry accounts that were obligated to surrender UKAs. Of these, 367 surrendered UKAs equal to or greater than the aviation emissions recorded in the Registry by the surrender deadline. The 20 Aircraft Operators with an AOHA accounts that failed to surrender by the deadline, represent less than 1% of the total recorded emission obligations for aviation.

On 1 May 2024, 98% of Operators and Aircraft Operators were fully compliant with their UK ETS surrender obligations. This equates to over 99% of Operators and 95% of Aircraft Operators surrendering UKAs at least equal to their cumulative recorded emissions. This high surrender rate was assisted by the targeted messaging of the regulators to help participants prepare for this deadline. These figures are based on the total number of compliant registry accounts and doesn't include the 20 aircraft operators that did not have an AOHA registry account.

Regulators have begun the process of enforcement for non-compliance relating to failure to surrender of UKAs. Regulators publish the lists of Operators and Aircraft Operators who have been issued with a penalty as required by legislation.

7. Conclusions and outlook

The 2023 scheme year saw all 25 auctions successfully clear, and the CCM was not triggered.

On 18 December 2023, the UK ETS Authority launched a consultation seeking input on a number of proposals to develop future markets policy. The UK ETS Authority continues to work to ensure that markets policy remains fit for purpose and is effective in managing the risks faced by an established and maturing scheme. The consultation closed on 11 March 2024. The UK ETS Authority is currently considering the responses and will publish a formal response in due course.

More broadly, the UK ETS Authority has continued to develop the scheme so that it can operate effectively and drive cost-effective decarbonisation, including through consultations on free allocation policy, expansion of the scheme's scope to include waste incineration, and the potential inclusion of greenhouse gas removals in the scheme. The UK ETS Authority has also consulted stakeholders on several operational improvements to the scheme.

This publication is available from: www.gov.uk/government/publications/functioning-of-the-uk-carbon-market-2023

If you need a version of this document in a more accessible format, please email emissions.trading@energysecurity.gov.uk . Please tell us what format you need. It will help us if you say what assistive technology you use.