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UK ETS Background and Updates

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9th December 2024

AGENDA

Background

Who does it apply to?

How to comply

The future of UK ETS

Today's Presenter

Graeme Precious, Technical Director, Carbon and Energy

Graeme has over 20 years' experience in the areas of energy and carbon management.

He has worked with UK and International organisations across a range of sectors, undertaking GHG emissions reporting and developing Net Zero Strategies.

He has experience across the range of UK climate change legislation including UK ETS, SECR and ESOS, and has presented webinars on a number of these topics to trade bodies including the Food & Drink Federation and Chemicals Industry Association.

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- Hydrology
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Background

Background

- **The EU ETS (European Union Emissions Trading System)** was introduced in **2005** and is the largest multi-country, multi-sector greenhouse gas emissions trading system in the world
- It introduced a price for carbon emissions based on a **cap and trade' scheme**; a 'cap' is set on the total greenhouse gas emissions allowed by all participants and this cap is converted into tradable allowances
- The legislation covers some specific sectors e.g.; **power stations, oil refineries, iron and steel, cement and lime, paper, glass, ceramics and chemicals**
- Other organisations, including universities and hospitals, may also be covered depending upon the **combustion capacity** of equipment at their sites
- **Aviation** operators flying into or from a European airport are also covered
- Approx **11,000** installations participate in the scheme
- The UK now operates a separate scheme the **UK Emissions Trading System (UK ETS)**

European Union Emissions Trading System (EU ETS) Phase III

Guidance for installations

How to comply with the EU ETS, including the Small Emitter and Hospital Opt-Out Scheme

February 2015

L 181/30 EN Official Journal of the European Union 12.7.2012

COMMISSION REGULATION (EU) No 601/2012

of 21 June 2012

on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council

(Text with EEA relevance)

Timeline

- **EU Emissions Trading System (EU ETS) commenced in 2005**
- **…with the UK setting up our own UK Emissions Trading Scheme (UK ETS) in 2021 (post-'Brexit')**
- **Average allowance price approx. 5-10 EURO until 2017 then increased to over 50 EURO by 2023**

EU ETS Phase 1 — 2005-7
A Pilot Phase with predominantly free allowance allocation

EU ETS Phase 2 — 2008-2012
First full phase- National allocation plans (NAP) introduced

EU ETS Phase 3 — 2013-2020
Reduction in allowance allocation – saw a significant rise in allowance price

UK ETS Phase 1 — 2021-2025
First Phase of separate UK scheme (EU scheme still runs outside of UK). Introduction of UK Allowances

UK ETS Phase 2 — 2026-2030
Potential inclusion of new sectors (Maritime and Waste to Energy), Further reductions of allowance allocation in-line with Net Zero

UK ETS

- **678** operational sites (installations) participated in UK ETS in 2022
- Just under **40 million** free allowances were allocated in 2022
- Just over **80 million** additional allowances were auctioned
- The average allowance price at auction in 2022 was just over **£75/tCO2 (generating ~£6bn revenue)**
- Just under **50%** of total free allowances were allocated to the **Top 10** sites

Site Name	Business Name	2022 Allocation
Port Talbot Steelworks	Tata Steel UK Limited	5,768,015
Scunthorpe Integrated Iron & Steel Works	British Steel Limited	4,132,569
Humber Refinery	Phillips 66 Limited	1,820,582
Esso Petroleum Company Limited	Esso Petroleum Company Limited	1,509,112
Valero, Pembroke	Valero Energy Ltd	1,392,097
Stanlow Manufacturing Complex	Essar Oil (UK) Limited	1,225,085
Grangemouth Refining	PETROINEOS Manufacturing Scotland Ltd	958,058
Lindsey Oil Refinery	Total Lindsey Oil Refinery Limited	904,135
Billingham Fertilizer Works	CF Fertilisers UK Limited	876,633
Hope Cement Works	Breedon Cement Limited	862,168

Who has to Participate

Regulated Activities

Criteria are outlined in UK ETS Order 2020 (mirrors the EU ETS qualification criteria)

- **'Annex 1'** of the EU ETS Regulations list specific activities that generate CO2 emissions which **must be reported under UK ETS 'regulated activities'**
- These have now been transferred to UK Legislation in [The Greenhouse Gas Emissions Trading Scheme Order 2020 (legislation.gov.uk)]
- These include e.g. Cement manufacture, steel, aluminium processing, paper and pulp, glass and ceramics
- ...and a number of chemical processes (see opposite)

UK ETS Regulated Activities
Refining of mineral oil
Production of coke
Production of lime or calcination of dolomite or magnesite in rotary kilns or in other furnaces with a production capacity exceeding 50 tonnes per day
Production of carbon black involving the carbonisation of organic substances such as oils, tars, cracker and distillation residues on a site where combustion units with a total rated thermal input exceeding 20 megawatts are operated
Production of nitric acid
Production of adipic acid
Production of glyoxal and glyoxylic acid
Production of ammonia
Production of bulk organic chemicals by cracking, reforming, partial or full oxidation or by similar processes, with a production capacity exceeding 100 tonnes per day
Production of hydrogen (H2) and synthesis gas by reforming or partial oxidation with a production capacity exceeding 25 tonnes per day
Production of soda ash (Na2CO3) and sodium bicarbonate (NaHCO3)

Combustion Threshold

Sites also need to report under UK ETS if they meet the <u>Combustion threshold</u>:

- '**Combustion of fuels** on a site where combustion units with a **total** rated **thermal input** exceeding **20MWth** are operated'
- This does **<u>not</u>** include:
  - Individual equipment with a rated thermal input **<3MWth**
  - units that use **only biomass** as a fuel

- Combustion means any oxidation of fuels, regardless of the way in which the heat or energy produced is used
- E.g. boilers, burners, turbines, heaters, furnaces, incinerators, kilns, ovens, fryers, dryers, engines, fuel cells

How To Comply

GHG Permit

Sites meeting the qualification criteria must apply for and operate under a GHG Permit (via the appropriate Regulator: EA, SEPA, NRW, NIEA)

- **The GHG Permit contains details of:**
  - The installation Operator
  - Site Boundary and process
  - Emission Sources
  - Fuel Sources
  - Emission Points
  - Metering Equipment
  - Approach to emissions calculation
  - A summary of ETS management procedures

- This must be accompanied by a set of site **UK ETS Operating Procedures** and **site plan** showing emission points
- A secondary set of procedures must also be produced/maintained for sites that receive a free allowance allocation – the '**Monitoring Methodology Plan (MMP)',** and accompanying site process flow diagram

Environment Agency

Greenhouse gas emissions permit

The Greenhouse Gas Emissions Trading Scheme Order 2020 (the Order)

Installation Category A

Emission Sources

Summary of emission sources which relate to the regulated activities at the installation.

Emission Source Reference	Emission Source Description
S1	No.1 Boiler
S2	No.2 Boiler
S3	No.3 Boiler
S4	Office block boiler
S5	Workshop equipment
S6	Pressure washers
S7	Portable burner
S8	Portable generator
S9	Temporary Equipment

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EP8	Portable generator
EP9	Temporary Equipment exhaust

‘Opt-outs’

Two categories of sites with lower emissions can potentially ‘Opt-out*’ of UK ETS

- Sites with **<25,000t** emissions (and **<35MWth** input) can ‘opt-out’ as a **‘small emitter’**

  - **A small emitter opt-out site** will still need to operate under a Permit and report emissions
  - …but have an emissions target set rather than having to buy/surrender allowances
  - If the target is not met, then a fine is issued (roughly equivalent to the UKA price for the CO2 emitted over the target)
    - **£64.90/tonne for 2024 emissions, £41.84/tonne for 2025 emissions**
  - There is also no requirement to have 3rd party verification of emissions – but sites can be audited by the EA, SEPA etc.
  - Any NHS Hospital site can also apply to operate as an ‘opt-out’

- If **<2,500t** annual emissions can be classified as an **‘Ultra Small Emitter (USE)’**

  - An ultra-small emitter has **NO** requirement to operate under a GHG Permit or report emissions
  - The site does however have a responsibility to monitor emissions and if they increase beyond 2,500tCO_2 may have to rejoin the scheme

***not necessarily opting out completely!**

How to Comply – Timeline

Participants in the scheme must monitor and report annual emissions and purchase and surrender UK ETS allowances (UKAs) equivalent to their annual emissions under the following timescales:

Jan-Dec

- **Monitor** emissions/fuel consumption (as per documented procedures) – report any changes on-site to the Regulator (e.g. equipment changes, meter failures)

Nov-Mar

- **Verification** – emissions must be verified by an accredited organisation

March

- **Report Emissions** - By end of March the following year submit your annual emissions (AEM) and Activity Level Reports (ALR) to the Regulator

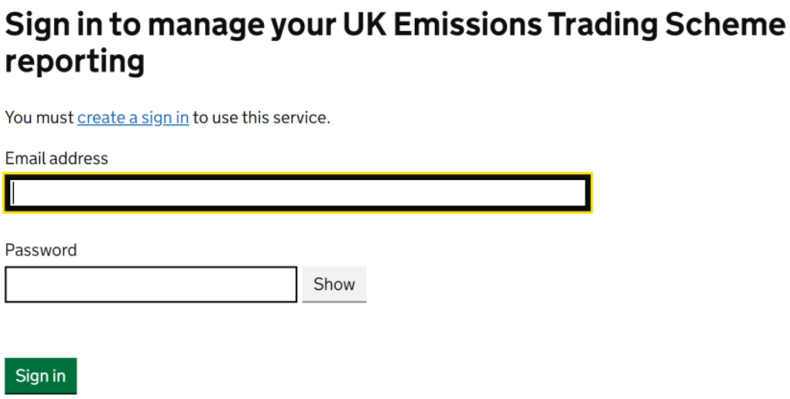
April

- **Surrender Allowances** - By end of April surrender your allowances (UKAs) – can be a combination of previous free allocation + additional purchased allowances

Emissions Reporting

Emissions and relevant fuel consumption must be monitored (Jan-December) – and an annual emissions report submitted to the Regulator by the end of March in the following year (via the METS Portal)

- The GHG Permit and monitoring plan will outline the process that has to be followed
- Data captured must be converted to emissions using the conversion factors provided for UK ETS in that year (updated annually)
- Emissions consist of direct process emissions (for specific regulated activities) and emissions from fuel combustion e.g. Natural Gas, Diesel, LPG, Kerosene, Acetylene
- Only emissions from 'stationary equipment' are reported (not e.g. road vehicles or FLTs)
- Sites receiving free allowances must also complete an **'Activity Level Report'** which (may) lead to an adjustment in free allocation – if there has been a significant change to site activity (15% threshold)
- Emissions Report must undergo **verification** prior to submission (see UKAS for accredited verifiers) [Search Accredited Organisations By Category - UKAS]



Biofuel Emissions

- *If using **bioliquids** to generate energy the fuel must meet the sustainability criteria outlined in 'RED' (EU Renewable Energy Directive) to be classified as zero emissions*
- *Solid **biomass** does not (currently) have to meet specific criteria*
- *Biofuel CO_2 emissions are calculated (using a residual factor) but reported for info only*

Allowances

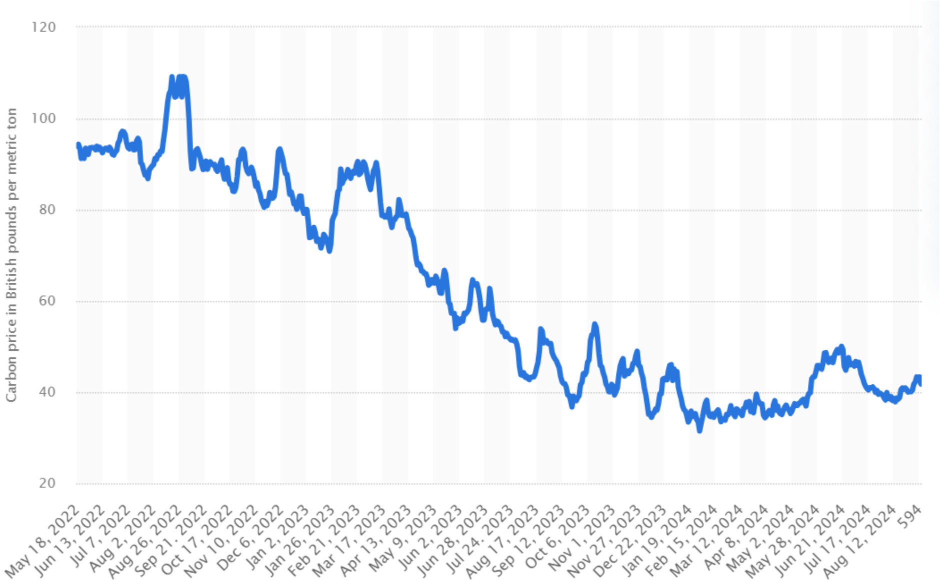
Participants must purchase and surrender allowances (UKAs) equivalent to your reported emission before the end of April

- Participants must open a **UK Registry** account (a 'bank-account' for saving and surrendering allowances
- Some allowances are **allocated free**, if these are not sufficient then additional allowances can be purchased either via a third-party trader or directly from Government auctions/via the market (need to set up a trading account)
- Free allocated is based on **carbon leakage status** and other factors e.g. usable heat [Carbon leakage (europa.eu)]
- UKAs are a tradeable commodity, and the price therefore is subject to market fluctuations (see graph opposite)
- If the UK allowance price diverges significantly from the EU allowance price (for at least 3 consecutive months) then the Government can activate **the 'Cost Containment Mechanism'** to reduce the price*
- New sites can also apply for an allocation **of free allowances** via the **'New Entrants Reserve' (NER)**

*To date this has been activated twice but the government has declined to intervene on price
Functioning of the UK carbon market for 2021 and 2022: a joint report from the UK ETS Authority (publishing.service.gov.uk)

UKA price May 2022- Aug 2024

UK ETS carbon price 2024 | Statista



Phase 1 – Period 2 (2025-2030)

The process of applying for free allowance allocation in 2026-2030 will take place in 2025

- **All installation operators** are required to submit data between **1 April and 30 June 2025**

  - All operators applying for **Free Allocation** must submit an independently verified **Baseline Data Report (BDR) and Monitoring Methodology Plan (MMP)** – unless already approved

  - **'Opt Out'** permit holders and installations with **Ultra small emitter (USE)** status – or looking to apply for an Opt Out or USE status - must submit an independently verified BDR
  - Existing USEs who wish to retain their USE status will be able to complete a separate **Ultra Small Emitter Data Collection template** containing 3 years' worth of emissions data (2021, 2022 and 2023)
  - **Existing GHGE or HSE** operators wishing to apply for **USE** status **may not need to have their reports verified** if they have already submitted annual emissions reports that have been verified
  - Operators applying for **USE** status can also make an application for Free Allocation at the same time

  - **Period 2 allocation may be pushed back to 2027 (still under consultation)**
    - But USE and 'Opt Out' status will still commence from **2026**
    - Proposed changes to the **electricity generator** classification will also come into effect in **2026**

UK ETS Future

Future of the Scheme

The UK Government has been consulting on the future of UK ETS and has recently published the response to the consultation 'Developing the UK Emissions Trading Scheme: Main Response'. Some of the key points are:

- The free **allowance allocation cap** will be aligned with the **Net Zero** strategy (see next slide)
- **Domestic maritime** sector to be included from **2026**
- **Energy from waste** and **waste incineration** will be included in **2028** (monitoring period from 2026)
- **Potential additional supply chain costs to fdf members?**
- Open to the possibility of linking with other ETSs internationally (including EU ETS)
- From 2026 operators of **CHPQA-certified plants** (for their industrial activity), will **not** have their whole installation classified as an electricity generator
- No plans at this stage to change the qualification threshold

Developing the UK Emissions Trading Scheme: main government response (publishing.service.gov.uk)


UK Government

Department of Agriculture, Environment and Rural Affairs

Scottish Government
Riaghaltas na h-Alba
gov.scot

Llywodraeth Cymru
Welsh Government

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

June 2023

Future Costs

From 2024 the allowance cap will be adjusted to align with the Governments Net Zero Trajectory (see chart opposite)

- This will lead to a **significant reduction in free allocation** (approx. **30-35%** fewer allowances being available for auction across Phase 1)
- Non-CL products will could see free allocation reduce to **zero** by 2030
- Potentially resulting in **increasing costs** for participants
- However, to ease the transition the government will release **53.5** million unallocated allowances to auction over **2024-27** (see chart opposite-below)

Future Pr… …ject EUA price bet…

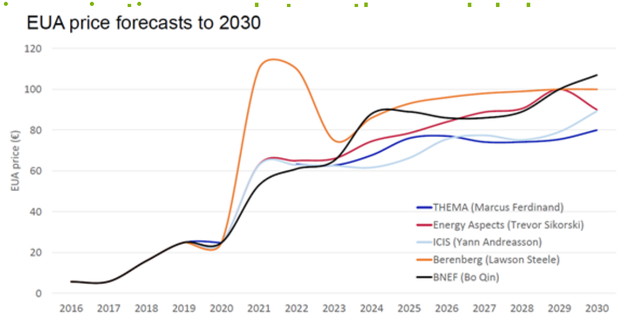


Figure 1: Chart showing the Net Zero (NZ) consistent cap against estimated allowance issuance and actual emissions (2021 – 2023)

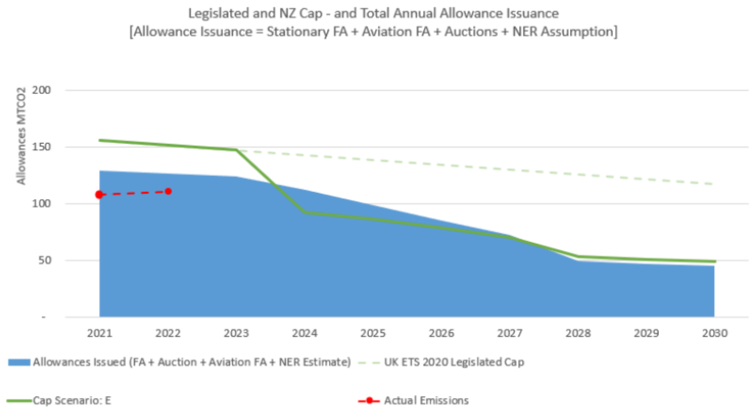
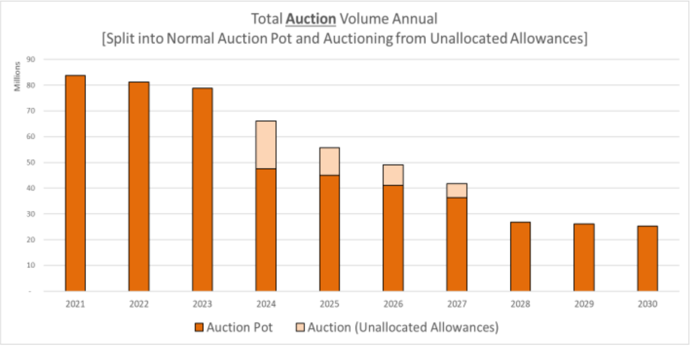


Figure 3: Chart showing the total annual auction volume, including the allowances auctioned from the unallocated stationary free allocations and flexible share



Further Information

- **Legislation** The Greenhouse Gas Emissions Trading Scheme Order 2020 (legislation.gov.uk)
- **UK Government Guidance** Participating in the UK ETS - GOV.UK (www.gov.uk)
- **UKAS ETS verifiers** Search Accredited Organisations By Category - UKAS
- **ETS Market Report** Functioning of the UK carbon market for 2021 and 2022: a joint report from the UK ETS Authority (publishing.service.gov.uk)
- **EU Renewable Energy Directive** https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0028
- **Consultation Response** Developing the UK Emissions Trading Scheme: main government response (publishing.service.gov.uk)

Do you have any questions?

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