

March 2025

Andrew Reid || Energy Finance Analyst, Europe

The UK Emissions Trading Scheme: Leaking Value

The Polluter Doesn't Pay

- *The UK Emissions Trading Scheme is trading at prices that are too low and don't represent the real costs to society of the emissions produced.*
- *The management and issuance of free allowances shield major polluters from carbon pricing, reducing their incentive to address operational emissions.*
- *Lost revenues due to low Emissions Trading Scheme pricing limit the UK government's ability to fund climate change mitigation and support efforts to decarbonise the economy.*
- *An opportunity exists for the UK government to vastly reduce the number of free allocations from 2027-2030.*

Carbon Pricing and the UK Emissions Trading Scheme

Carbon pricing attempts to capture the external cost of greenhouse gas emissions (GHG) ultimately paid for by the public or other stakeholders because of global warming.¹ External costs include those related to damaged crops, property, economic productivity and health from heatwaves, droughts, rising sea levels and air quality.

Governments use two primary mechanisms to price carbon and apply this to polluting entities within their jurisdictions, namely carbon taxes and emissions trading schemes (ETS). The UK operates an ETS, which is a cap-and-trade scheme whereupon the host government sets a cap on the maximum amount of emissions and creates permits or allowances for each unit of emissions allowed under the cap. The cap reduces over time to align with the country's emissions reduction and ultimately net-zero goals through to 2050.

Under the scheme, emitters must obtain and surrender a permit for each unit of their GHG emissions. To do this, emitters must monitor their relevant activities and apply ETS conversion factors to calculate their annual emissions in tonnes of carbon dioxide equivalent. Those that don't have enough permits must either cut back on their emissions or buy the required amount



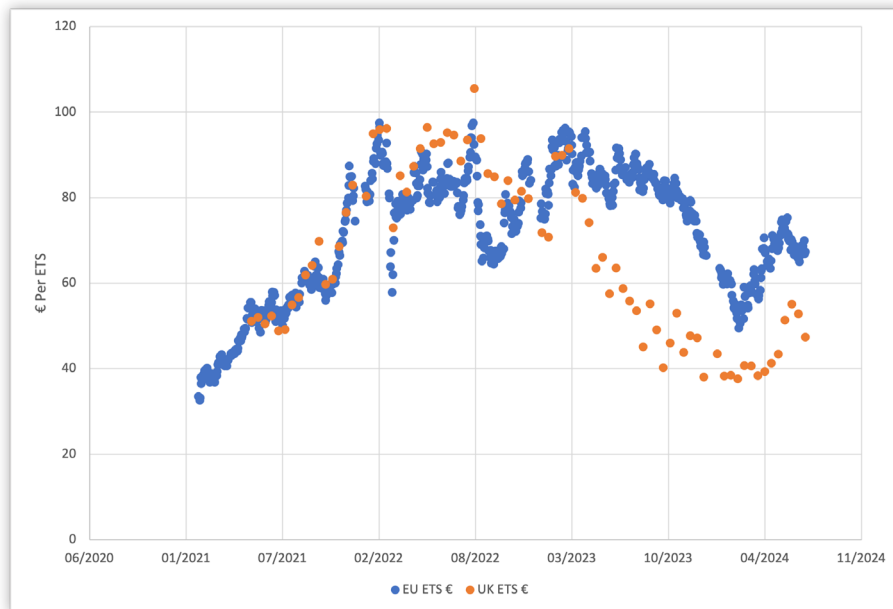
from another company or at auction. The price of these permits will increase when there is high demand and lower if demand reduces.² The rationale is that polluting firms are given a financial incentive to reduce their emissions in line with the cap while raising funds and making the “polluter pay” for the consequences of global warming. It also aims to support vulnerable businesses and households with the costs of the energy transition.

The UK ETS

The UK ETS was created in January 2021.³ It replaced the UK’s participation in the EU ETS, which has been in operation since 2005.⁴ The UK ETS maintained a similar structure to the EU equivalent to ensure continuity and linkage to the European system. The UK ETS applies to energy-intensive sectors across power, industry and aviation, which accounted for about 23% of the UK’s 423.4 million tonnes of carbon dioxide equivalent (MtCO₂e) emissions in 2023.⁵ The scheme covers more than 1,100 industrial emitters and airlines, collectively responsible for 97 MtCO₂e of emissions per year, of which 90% is attributed to industry and the power sector.⁶

A cap is set each year by the UK government, and allowances are either distributed for free to emitters or sold at fortnightly auctions through ICE Futures Europe.⁷ After the UK ETS was introduced in 2021, the value per tonne traded at a slight premium to the EU ETS due to perceived risks in the initial period of operation.⁸ During the fiscal years (FY) 2021-22 and 2022-23, UK ETS values were 3% and 7% higher, respectively. However, during the following two years there has been a much larger disconnect, with the EU ETS trading at a 51% premium in FY2023-24 and a 45% premium during FY2024-25 to date.⁹

Figure 1: UK and EU ETS Prices January 2021 to November 2024



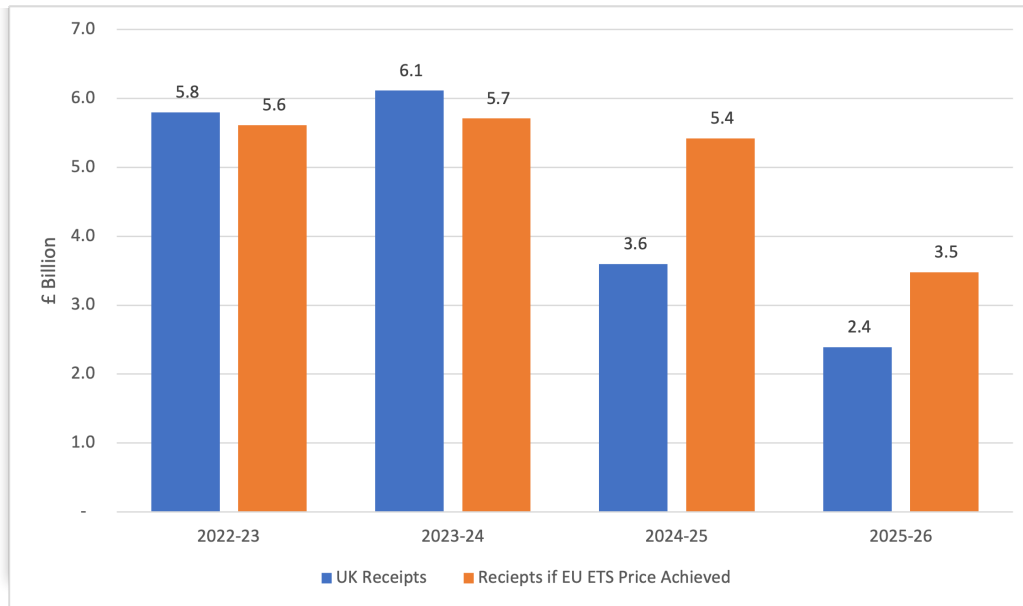
Source: International Carbon Action Partnership (ICAP)

The stark difference in pricing is in part due to UK government intervention during the summer of 2023 when it tightened the emissions cap to 931 MtCO₂e between 2021 and 2030. To reduce the financial burden of the cap reduction, 53 million unallocated allowances are being released into the market between 2024 and 2027, and the level of free allocation of allowances available to industry increased from 37% to 40%. These measures contributed to the collapse of UK carbon prices during 2023¹⁰ and created a sustained discount to the EU ETS throughout 2024.

Given the reduced value of the UK ETS, the implications for UK tax receipts are significant. The Office for Budget Responsibility (OBR) provides historical revenues and forecasts future ETS-related values in its Economic and Fiscal Outlook. In its March 2024 update, ETS receipts in FY2022-23 and FY2023-24 period were £12 billion as the UK was advantaged by higher pricing, which created a £590 million premium over EU ETS pricing and related receipts.¹¹

Figure 2: Actual and Forecast UK ETS Fiscal Receipts vs Potential EU ETS

Price Performance



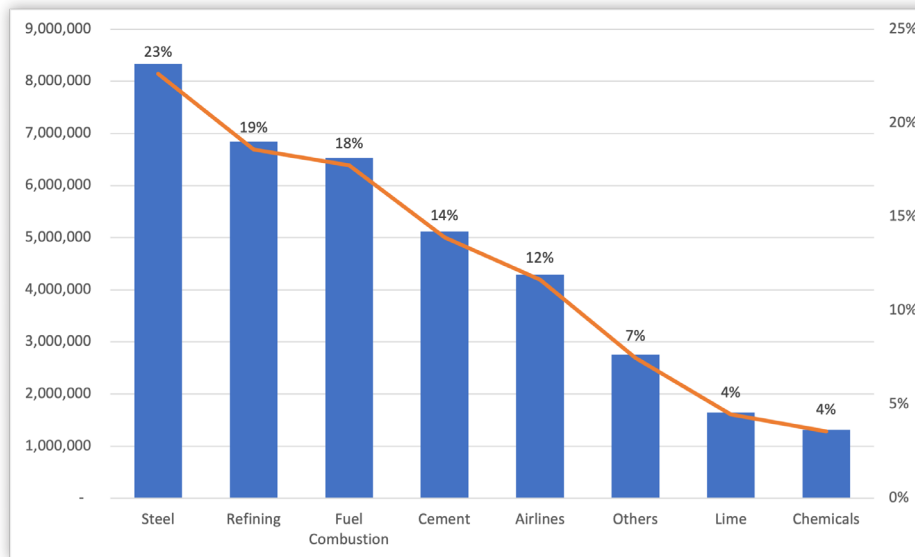
Sources: UK Office for Budget Responsibility and ICAP

The fall of UK ETS prices in 2023 and 2024 will affect the following fiscal year's receipts, due to revenues being recorded when the permits are used or surrendered, not when they are bought at auctions.¹² The OBR forecasts revenues will halve to £6 billion over FY2024-25 and FY2025-26 due to the value erosion of the UK ETS and a lower volume of allowances auctioned. Lower ETS prices are the primary contributor to reduced revenues, as allowances auctioned fell by only 6% in FY2024-25. Had the UK pegged its ETS pricing to the EU equivalent, it would have generated an additional £2.9 billion in receipts in FY2024-25 and FY2025-26.

Free Allowances

To protect industries from additional financial burden and to prevent carbon leakage, the UK government issues free allowances to emitters that fall within the ETS. During the calendar year 2023, some 38% of the 97 MtCO₂e of emissions captured under the ETS were allocated for free. The value of these free emissions, based on the average UK ETS price during 2022, was £2.8 billion.¹³

Figure 3: ETS Free Allowance Allocation by Sector 2023



Sources: UK Emissions Trading Scheme Registry, ICAP and IEEFA analysis

Not all emissions are treated equally despite the environmental damage being done. Sectors such as steel, cement and lime production received 41% of the 2023 free allocation; refining, airlines and fuel combustion, which includes operations from offshore oil and gas installations, received about half.

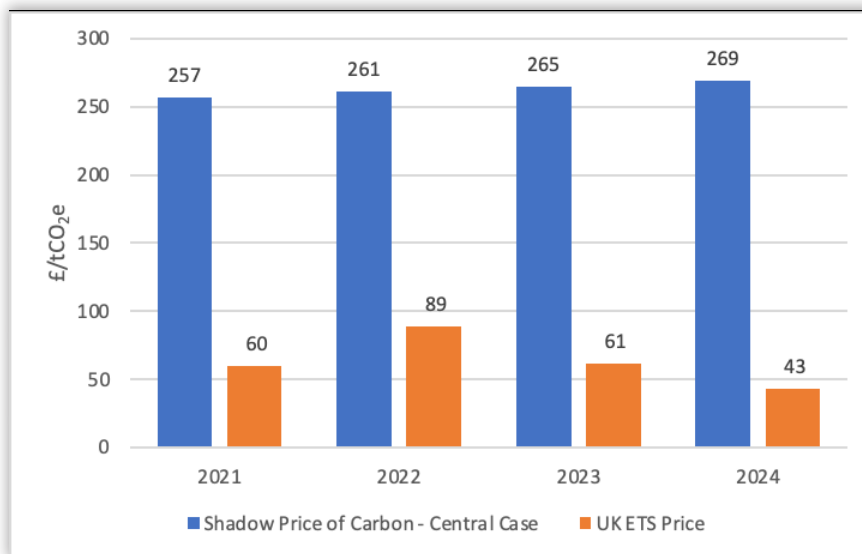
The 20 largest beneficiaries of free allowances, which include specific industrial sites and airlines, accounted for 63% of all allowances issued during 2023. Certain sectors are heavily shielded from payments. The cement and lime sectors received 99% of their ETS obligations for free, while the steel sector's ETS costs were waived for 92% of its 9 MtCO₂e 2023 emissions over two sites. Other highly polluting sectors are also being protected, including refining and airlines, which had 65% and 59% of their ETS obligations waived, respectively.

The argument for issuing free allowances – to shield industries from additional financial burdens when decarbonisation options are limited, and to prevent industry from moving to jurisdictions with lax climate policies – is valid. It is pointless to impose ETS accountability if it prompts facilities to shut down or move their emissions to other countries. Despite these arguments, the UK approach to free allowances constrains ETS pricing, which in turn protects polluters from the costs of climate change and rectification while reducing the incentive to decarbonise their operations.

The Shadow Price of Carbon

To model the value of emissions reduction within the UK, the government has developed a set of carbon values to be used in policy appraisal and evaluation. In December 2007, the approach to carbon valuation adopted the shadow price of carbon (SPC) as the basis for incorporating carbon emissions in cost-benefit analyses and impact assessments. The SPC is based on estimates of the lifetime damage and costs associated with GHG emissions, known as the social cost of carbon (SCC). The SCC attempts to measure the full cost of emissions damage over the whole of its time in the atmosphere. As the government stated: “The SCC matters because it signals what society should, in theory, be willing to pay now to avoid the future damage caused by incremental carbon emissions.”¹⁴

Figure 4: UK SPC vs UK ETS Prices 2021-24



Sources: UK Treasury Green Book, ICAP

The SPC calculations used for policy evaluation are on average more than four times the traded UK ETS value from 2021 to 2024. In effect, by having an ETS system that trades at a lower value to the SPC, other stakeholders are being burdened by the costs associated with global warming, subsidising the externalities of polluting entities for the damage they cause.

This is clearly an unintended outcome of the UK ETS. For carbon pricing to be used as an effective policy to support net-zero ambitions, changes need to be considered. The EU ETS is a case in point. In its initial trading periods from 2005, many of the allowances were issued for free, creating a drag on pricing. In the third phase from 2013-2020, 40% of allowances were auctioned; however, there remained significant free allowances within the manufacturing and aviation sectors.



Recognising the limited impact of carbon pricing to that point, reform was introduced in 2018 to better manage the number of free permits in the market. This, complemented by the Market Stability Reserve in 2019, allowed authorities to increase or decrease permits in the market to regulate the price.¹⁵ Since these interventions, the EU ETS has increased significantly from an average price of €14 during 2008-2019 to €63 from 2020-2023.¹⁶

“ An opportunity exists for the UK government to vastly reduce the number of free allocations for 2027-2030 as the risk of carbon leakage is eliminated.”

The UK government plans to extend the first free allocation period from 2021 to 2025 by a year to 2026. The second free allocation period would run from 2027-2030. This is to allow for the second period to coincide with the introduction of a UK Carbon Border Adjustment Mechanism (CBAM), which applies the UK ETS price to imports that are covered by the UK scheme.¹⁷ As such, an opportunity exists for the UK government to vastly reduce the number of free allocations for 2027-2030 as the risk of carbon leakage, a core justification for creating free allowances, is eliminated.

Conclusion

The UK ETS is trading at prices that are too low. They don't represent the real costs to society of the emissions produced, while the management and issuance of free allowances create a distortion that shields major polluters from carbon pricing. This in turn reduces the cost, and thus the incentive, for polluters to reduce their operational emissions. The lost revenues due to low ETS pricing limit the ability of the UK government, and taxpayers, to pay for mitigation of global warming and to support the energy transition to a lower GHG economy.

As it stands, the polluter doesn't pay.



Endnotes

- 1 World Bank. [Fact Sheet](#).
- 2 London School of Economics. [How do emissions trading systems work?](#) 11 June 2018.
- 3 UK government. [Participating in the UK ETS: Guidance](#). 11 November 2024.
- 4 European Commission. [What is the EU ETS?](#)
- 5 UK Department for Energy Security & Net Zero. [2023 UK greenhouse gas emissions, provisional figures](#). 28 March 2024.
- 6 UK Emissions Trading Registry. [Compliance Report – Emissions & Surrenders](#). 7 June 2024.
- 7 UK government. [UK Emissions Trading Scheme markets: Policy paper](#). 25 October 2024.
- 8 Frontier Economics. [Linking UK and EU Carbon Markets](#). 6 August 2024. Page 6.
- 9 International Carbon Action Partnership. [Allowance Price Explorer](#).
- 10 Timeria Energy. [UK carbon allowances diverged from Europe across 2023](#). 3 January 2024.
- 11 UK Office for Budget Responsibility. [Emissions Trading Scheme \(UK ETS\). Recent trends and latest forecast](#). 17 May 2024.
- 12 Ibid.
- 13 We have used the average UK ETS price over 2022 and applied this to the total emissions and free allowances figure based on the assumption that allowances purchased in 2022 are used during 2023.
- 14 UK Department for Environment, Food and Rural Affairs. [The Social Cost Of Carbon And The Shadow Price Of Carbon: What They Are, And How To Use Them In Economic Appraisal In The UK](#). December 2007. Page 2.
- 15 Clean Energy Wire. [Understanding the European Union's Emissions Trading Systems \(EU ETS\)](#). 23 May 2024.
- 16 S&P. European Long-Term ETS Carbon Price Outlook—EU ETS Planning Case. September 2023.
- 17 UK government. [UK Emissions Trading Scheme: Moving the Second UK ETS Free Allocation Period Authority Response](#). December 2024. Page 5.



About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

About the Author

Andrew Reid

Andrew Reid is a partner at NorthStone Advisers and a guest contributor at IEEFA Europe, providing research and editorial support to offshore related topics and reports. Andrew has worked for over two decades across the global upstream industry in research and consulting roles with a leading investment bank, a big four advisory firm, and an independent boutique. A graduate of both Aberdeen universities, Andrew holds an MA (hons) in Economics from the University of Aberdeen and an MBA from the Aberdeen Business School.

Disclaimer

This report is for information and educational purposes only. The Institute for Energy Economics and Financial Analysis ("IEEFA") does not provide tax, legal, investment, financial product or accounting advice. This report is not intended to provide, and should not be relied on for, tax, legal, investment, financial product or accounting advice. Nothing in this report is intended as investment or financial product advice, as an offer or solicitation of an offer to buy or sell, or as a recommendation, opinion, endorsement, or sponsorship of any financial product, class of financial products, security, company, or fund. IEEFA is not responsible for any investment or other decision made by you. You are responsible for your own investment research and investment decisions. This report is not meant as a general guide to investing, nor as a source of any specific or general recommendation or opinion in relation to any financial products. Unless attributed to others, any opinions expressed are our current opinions only. Certain information presented may have been provided by third parties. IEEFA believes that such third-party information is reliable, and has checked public records to verify it where possible, but does not guarantee its accuracy, timeliness or completeness; and it is subject to change without notice.

