International Carbon Action Partnership
ICAP

EU Emissions Trading System (EU ETS)

General Information

ETS Description

Operational since 2005, the European Union Emissions Trading System (EU ETS) is the oldest cap-and-trade system in force and the largest in terms of the trading volume and value. It remains a cornerstone instrument of the EU's policy framework to combat climate change and reduce GHG emissions cost-effectively.

Until 2023, the EU ETS covered emissions from electricity and heat generation plants, manufacturing installations in Europe, and aircraft operators flying between airports in the European Economic Area (EEA) and from the EEA to Switzerland and to the UK. In January 2024, the EU ETS was extended to cover emissions from maritime transport and in aviation, emissions from most flights to and from the EU's nine outermost regions as well as departing flights from these outermost regions to Switzerland and the UK. Overall, the EU ETS covers around 40% of the EU's total emissions.

The EU ETS is currently in its fourth trading phase (2021 to 2030). Every year, covered entities must surrender allowances for their emissions under the EU ETS. Auctioning is the main method of distributing allowances, with free allocation, based on benchmarks, used to address the risk of carbon leakage.

The EU ETS was revised in 2023 in the context of the "European Green Deal" to align the system with the EU's 2030 climate target of at least a 55% net emissions reduction compared to 1990 levels. The revision is now in force and included:

- an increased ambition and expanded scope of the EU ETS, to maritime transport, and introduced a new, separate emissions trading system for buildings, road transport and additional sectors* (ETS 2, to start in 2027 or 2028)**;
- a strengthened the Market Stability Reserve (MSR);
- an update to the EU ETS regarding aviation;
- updated rules for monitoring and reporting of emissions from maritime transport;
- the creation of the Social Climate Fund (starting in 2026) to complement the new EU ETS 2; and
- the establishment of a Carbon Border Adjustment Mechanism (CBAM) to address the risk of carbon leakage from specific sectors under the EU ETS (to gradually replace free allocation).

* Mainly industry sectors not covered under the existing EU ETS.

** See EU ETS 2 factsheet.

ETS Status

in force

Jurisdictions

Austria
Belgium
Bulgaria

Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Iceland
Ireland
Italy
Latvia
Liechtenstein
Lithuania
Luxembourg
Malta
Netherlands
Norway
Poland
Portugal
Romania
Slovakia
Slovenia
Spain
Sweden

Year in Review

The EU ETS in 2023 saw a historical year-on-year reduction in emissions. This reduction was largely driven by the power sector, where renewable electricity production (primarily from wind and solar) increased substantially, and the trend of gas replacing coal in power generation was resumed. With this development, emissions from installations at the start of 2024 were around 47.6% below 2005 levels and well on track to achieve the 2030 target of -a 62% reduction. Emissions from aviation under the EU ETS continued to increase in 2023. The emissions data for 2024 will be reported in 2025.

In 2023, the EU ETS raised EUR 43.6 billion (USD 47.2 billion) for the EU's green transition. This revenue went primarily to national budgets, but also the Innovation and Modernisation Funds as well as the Resilience and Recovery Fund, which EU Member States use to advance the clean energy transition, roll out low- and zero-carbon innovative solutions and technologies in ETS sectors, and improve energy security. Since June 2023, EU Member States are obliged to use all relevant ETS revenue (or an equivalent financial value) to support climate action and energy transformation. In 2024, the EU ETS raised EUR 183.6 billion.

Important changes to the system's ambition and scope took effect in 2024. The 2024 cap on emissions has been rebased downwards and the annual reductions in the cap from 2024 onwards have been increased. At the same time, the scope of the EU ETS was expanded:

- The scope of the EU ETS has been expanded to CO_2 emissions from maritime transport, which accounted for 3-4% of EU emissions in 2023. This extension covers all emissions occurring between two European Economic Area (EEA) ports and when ships are in EEA ports, and half of emissions from voyages starting or ending outside the EEA. Maritime operators will surrender allowances under the EU ETS for the first time in 2025.
- The scope of the EU ETS for aviation has been expanded to emissions from most flights to and from the EU's nine outermost regions as well as departing flights from these outermost regions to Switzerland and the UK. This represents an extension of carbon pricing coverage of 7%. At the same time, free allocation to aircraft operators has been reduced by 25%.
- Installations for the incineration of municipal waste must now monitor and report their emissions under the EU ETS. They are not, however, required to surrender allowances for their emissions.

Sectoral coverage

Maritime
Domestic Aviation

Industry
Power

Revenue usage

General budget, including debt reduction
Climate mitigation
Low-carbon innovation
Assistance for individuals, households, and businesses

Emissions & Targets

Overall GHG Emissions excl. LULUCF (MtCO2e)

3,374.7MtCO_2e (*2022*)*

* National emissions for the EU-27 reported to the UNFCCC and to the EU in April 2024 under the "EU Governance Regulation".

GHG reduction targets

By 2030: Reduce net emissions to at least 55% below 1990 GHG levels ("European Climate Law")

By 2050: Net-zero ("European Climate Law")

Current Allowance Price (per t/CO2e)

EUR 64.74 (USD 70.07) (average 2024 auction price)

EUR 65.23 (USD 70.60) (average secondary market price 2024)

Size & Phases

Covered emissions (2022)

40.00%

Verified ETS Emissions

1362.00MtCO_2e

GHGs covered

CO2, N2O, HFCs, PFCs

Phases

PHASE 1: Three years (2005 to 2007)

PHASE 2: Five years (2008 to 2012)

PHASE 3: Eight years (2013 to 2020)

PHASE 4: Ten years (2021 to 2030)

Cap or total emissions limit

A cap limits the total emissions allowed in the system. It is set to reduce covered sectors' emissions by 62% compared to 2005 levels by 2030.

PHASE 1 and PHASE 2: The cap was calculated bottom-up, based on the aggregation of the national allocation plans of each Member State. Phase 1 started with a cap of 2,096 MtCO_2e in 2005; Phase 2 with a cap of 2,049 MtCO_2e in 2008.

PHASE 3:

Installations: A single EU-wide cap was calculated based on emissions monitoring and set at 2,084 $MtCO_2e$ in 2013. It was reduced annually by a linear factor of 1.74% (applied to the midpoint of 2008 to 2012 baseline emissions). This translated into a year-on-year reduction of around 38 million allowances and resulted in a cap of 1,816 $MtCO_2e$ in 2020.

Aviation: Included in the EU ETS in 2012, with a cap calculated separately. Legally, the system covers all outgoing and incoming flights to the EEA. The 2012 cap for aviation amounted to 221 million $MtCO_2e$ (95% of 2004 to 2006 emissions). In 2013, however, the EU temporarily limited ETS obligations to flights within the EEA to support the development of a global market-based measure to reduce aviation emissions by the International Civil Aviation Organization (ICAO). The number of aviation allowances put into circulation in 2013 to 2016 was reduced to 38 million allowances annually. This 'stop-the-clock' limited scope of the EU ETS for aviation was extended until the end of 2026.

PHASE 4:

From Phase 4, the linear reduction factor applies annually to the overall cap. The factor is set at 2.2% per year (of 2008 to 2012 baseline emissions) for the period 2021 to 2023, 4.3% for 2024 to 2027 and 4.4% from 2028. In addition, the cap is also reduced in two steps, by 90 million allowances in 2024 and 27 million allowances in 2026.

Installations: A single EU-wide cap reduced annually. Following the 2023 ETS revision, the cap in 2024 amounted to 1,386 $MtCO_2e$. From 2021, the UK was no longer part of the EU ETS (except for electricity generators in Northern Ireland).

Maritime: The 2024 cap was increased by 78.4 million allowances based on the sector's average emissions reported for 2018 and 2019.

Aviation: The aviation cap in 2024 amounted to 27.6 $MtCO_2e$.

From Phase 4, a Member State may cancel allowances from their auction share if they take additional policy measures that result in a closure of electricity generation capacity. The quantity of allowances cancelled shall not exceed the average verified emissions of the installation from five years preceding the closure.

Sectors and thresholds

The EU ETS scope in terms of activities and GHGs is specified in Annex I and Annex II of the "ETS Directive".

PHASE 1: Power stations and other combustion installations with >20 MW thermal rated input (except hazardous or municipal waste installations), industry (various thresholds) including oil refineries, coke ovens, and iron and steel plants, as well as production of cement, glass, lime, bricks, ceramics, pulp, paper, and cardboard.

PHASE 2: Several countries included NO_x emissions from the production of nitric acid. The EU ETS also expanded to include Iceland, Liechtenstein, and Norway.

Aviation: Emissions from international aviation were included in the EU ETS in 2012 (>10,000 tCO_2/year for commercial aviation; >1,000 tCO_2/year for non-commercial aviation since 2013). However, the EU temporarily limited the scope of the EU ETS for aviation to flights within the EEA. Exemptions for operators with low emissions were introduced.

PHASE 3: Carbon capture and storage installations, production of petrochemicals, ammonia, nonferrous and ferrous metals, gypsum, aluminum, as well as nitric, adipic, and glyoxylic acid (various thresholds) were added to the scope.

Aviation: In 2017, the limited scope for aviation was extended until 2023 to support the development of a global measure for aviation emissions under ICAO. Under the "Linking Agreement" between the EU and Switzerland, from 2020, the EU ETS covers emissions from outgoing flights to Switzerland.

PHASE 4: Amendments introduced in view of the UK's departure from the EU and in the 2023 revision of the EU ETS.

Power and industry: The scope of ETS and benchmarks used for free allocation was broadened from 2024 to remove barriers for the deployment of new technologies such as green hydrogen or hydrogen-based steel.

Aviation: Under the "Trade and Cooperation Agreement" between the EU and the UK, the EU ETS applies to emissions from flights departing from the EEA to the UK from 2021 (the UK ETS applies to flights departing to EEA airports).

Emissions from most flights to and from the EU's nine outermost regions as well as from departing flights from these regions to Switzerland and the UK were added to the scope from 2024.

Maritime: From 2024, emissions from all large ships (of 5,000 gross tonnage and above) entering EU ports are covered by the EU ETS, regardless of the flag they fly, covering:

- 50% of emissions from voyages starting or ending outside the EU;
- 100% of emissions that occur between two EU ports and when ships are in EU ports.

Initially, the scope extension to maritime transport covers only CO_2 emissions. From 2026, CH_4 and N_2O emissions will also be covered.

The obligation for maritime companies to surrender allowances for their emissions is being gradually phased in.

- 2025: for 40% of emissions reported in 2024;
- 2026: for 70% of emissions reported in 2025;
- 2027 onward: for 100% of emissions reported in 2026 and later years.

To ensure environmental integrity during the phase-in, Member States will cancel the number of allowances equivalent to the difference between the surrendered allowances and the verified emissions in 2024 and in 2025.

Point of regulation

Point source

Type of entities

Installations (energy and industry); companies (aviation and maritime transport)

Number of entities

8,554 installations, 379 aircraft operators, 2251 shipping companies (2024)

Allowance Allocation & Revenue

Allowance allocation

PHASE 1: Allocation was based on Member States' national allocation plans. Allowances were allocated through grandparenting. Some Member States used auctioning and some used benchmark-based allocation.

PHASE 2:

Auctioning: Eight Member States (Germany, United Kingdom, the Netherlands, Austria, Ireland, Hungary, Czechia, and Lithuania) held auctions corresponding to ~3% of the total allowance allocation.

Free allocation: ~90% of allowances were allocated for free.

PHASE 3:

Auctioning: The main method of distributing allowances was via auction, accounting for up to 57% of the cap. Of the share of allowances to be auctioned, 88% were distributed to Member States based on verified 2005 or average 2005 to 2007 emissions; 10% were allocated between 16 lower-income Member States under the solidarity provision; and the remaining 2% were allocated between the Member States that had reduced their emissions by at least 20% compared to the applicable base year under the Kyoto Protocol.

Free allocation: A significant volume of allowances was allocated for free to address the risk of carbon leakage, based on sector-specific performance benchmarks. As the demand for free allowances exceeded the volume of allowances available, the free allocation of each installation was subject to a uniform cross-sectoral correction factor — which was revised in 2017.

Power: Auctioning, with an optional transitional free allocation for the modernisation and diversification of electricity generation in ten lower-income Member States. At the end of Phase 3, eligible Member States could decide to continue using this option in Phase 4 (2021 to 2030), monetize remaining allowances, or transfer them to the Modernisation Fund, created under the EU ETS in 2018.

Industry: Free allocation based on sector-specific performance benchmarks, which reflect an average emissions intensity per unit of product of the most efficient 10% of installations in each sector. The European Commission established 54 benchmarks in 2011, using

2007 and 2008 activity data and literature sources (when data was missing). Sectors deemed at risk of carbon leakage received free allocation at 100% of the relevant benchmark. Sub-sectors deemed not at risk of carbon leakage had free allocation reduced gradually from 80% of the respective benchmark in 2013 to 30% by 2020.

The carbon leakage risk was assessed against emissions intensity and trade exposure:

- direct and indirect cost increase >30%; or
- non-EU trade intensity >30%; or
- direct and indirect cost increase >5% and trade intensity >10%.

Cost intensity was determined by the formula:

[Carbon price × (direct emissions × auctioning factor + electricity consumption × electricity emission factor)]/ gross value added

Trade intensity was determined by the formula:

(imports + exports)/(imports + production)

New Entrants' Reserve (NER): 5% of the cap for Phase 3 was set aside to assist new installations or to cover installations whose capacity significantly increased since their free allocation had been determined. 300 million allowances from the reserve were allocated to the NER300, a large-scale funding program for innovative low-carbon energy demonstration projects.

Aviation: 15% of allowances were auctioned and 82% were allocated to aircraft operators for free. The remaining 3% constituted a special reserve for new entrants and fast-growing airlines. The number of allowances put into circulation for the aviation sectors was reduced to reflect the temporary limitation of the scope of the EU ETS to flights within the EEA.

PHASE 4:

Auctioning: The main method of distributing allowances remains auctioning, accounting for up to 57% of the cap. Of the share of allowances to be sold, 90% are distributed to Member States based on their share of verified emissions, with 10% distributed among the lower-income Member States under the solidarity provision.

Free allocation: A significant volume of allowances is allocated for free to address the risk of carbon leakage, based on sectors-specific performance benchmarks. Benchmark values are updated twice in Phase 4 to reflect technological progress in different sectors. In 2021, the European Commission updated benchmark values for the first time* and they apply for 2021 to 2025. The values are adjusted for technological progress on a yearly basis. An annual reduction rate is determined for each benchmark. For the steel sector, which faces high abatement costs and leakage risks, a fixed reduction rate applies.

The uniform cross-sectoral correction factor for the adjustment of free allocation is one for 2021 to 2025.

The Phase 4 cap includes a buffer of more than 450 million allowances, initially earmarked for auctioning, which can be made available if the initial free allocation volume is fully absorbed (thereby avoiding the need to apply the cross-sectoral correction factor).

Free allocation for 2026 to 2030 will become conditional on the implementation of energy efficiency measures (based on audits or energy management systems) and of carbon neutrality plans for the worst performing installations, in order to incentivize decarbonization.

Power: Auctioning, with an optional transitional free allocation for the modernization and diversification of electricity generation in ten lower-income Member States. Three of the eligible Member States decided to continue using this option in Phase 4, which could have been used until the end of 2024. After this time, any leftover allowances will be either added to a Member State's share of allowances to be auctioned or its share of the Modernisation Fund.

Industry: Updated benchmark values that apply for 2021 to 2025 were calculated based on activity data for installations over 2016 to 2017, supplied by Member States.

The updated values were compared to the original benchmarks to determine the reductions to be applied over the 15-year period between 2007/08 and 2022/23. Benchmarks could be reduced between 3% and 24% over this period. In total, 31 out of 54 benchmarks have been reduced by the maximum rate of 24%.

There are revised rules covering adjustments to free allocation when an installation makes a significant change to its production. These rules apply from Phase 4. The threshold for adjustments is a 15% increase or decrease in production. Adjustments to free allocation are issued based on yearly production data reports that operators submit to national competent authorities. Adjustments to the level of free allocation are made from the New Entrants' Reserve.

Carbon leakage rules: The third carbon leakage list, adopted in February 2019, applies for 2021 to 2030. The list includes a reduced number of sectors classified at risk of carbon leakage. Free allocation for other sectors will be discontinued by 2030 (except for district heating).

Carbon leakage is assessed against a composite indicator of trade intensity and emissions intensity, according to the following criteria:

Trade intensity x emissions intensity > 0.2

Trade intensity x emissions intensity > 0.15 but *< 0.2*; qualitative assessment will follow based on abatement potential, market characteristics, and profit margins.

Emissions intensity is determined by:

[direct emissions + (electricity consumption x electricity emission factor)]/ gross value added

Trade exposure is determined by:

(imports + exports)/(imports + production)

Carbon Border Adjustment Mechanism: Free allocation to specific sectors will be gradually phased out from 2026 to 2034, in parallel to the phase-in of the EU's CBAM for third-country imports. Those sectors are iron and steel, cement, aluminum, fertilizers and hydrogen. The mechanism applies equally to imports from all countries outside the EU (except Liechtenstein, Iceland and Norway as they are participating in the EU ETS; and Switzerland which has an ETS that is linked with the EU ETS).

The transitional, data-collection phase of CBAM started in October 2023, with only reporting obligations but no charges due.

The phase-out of free allocation to sectors covered by the CBAM will take place by applying a 'CBAM factor', which will decrease gradually from 97.5% in 2026, to 51.5% in 2030 and down to 14% in 2033.

The CBAM will also apply to electricity imports.

New Entrants' Reserve (NER): The initial volume of the NER at the start of Phase 4 amounted to 331.3 million allowances. This included unallocated allowances from Phase 3 and 200 million allowances from the MSR.

Aviation: Phase 3 breakdown applied until 2023. Free allocation to aviation will be phased out gradually – reduced to 75% in 2024, 50% in 2025 and eventually to 0% from 2026 onward.

* Revised benchmark values for free allocation of emission allowances for 2021 to 2025.

Auctioning share

57%

Total Revenue

EUR 184 billion* (USD 206 billion) since the beginning of the system

EUR 38.8 billion** (USD 42 billion) in 2024

* Includes revenues from Iceland, Liechtenstein, Norway, and the UK, as well as of the Innovation and Modernisation Funds funded by the EU ETS.

** Includes revenues from Iceland, Liechtenstein, Norway, and Northern Ireland, as well as of the Innovation and Modernisation Funds funded by the EU ETS.
2024

Use of Revenues

Revenue from the auctioning of allowances under the EU ETS accrues primarily to national budgets. As of June 2023, countries are required to use all ETS revenue (or an equivalent financial value) to support climate action and energy transformation, except for any revenue used as aid for electricity-intensive industries for indirect carbon costs.

EU Member States can use their ETS revenue to finance State aid to certain electricity-intensive industries to compensate for the additional electricity costs they face as a result of the carbon price pass through. They do so under State aid schemes that are approved by the European Commission. Every year, countries must publish the total compensation amounts paid out, including a breakdown by recipient sector and subsector. The overall spending under a scheme should not exceed 25% of collected ETS revenue.

EU Member States report annually to the European Commission on how they used their auction revenue in a preceding year. Of the revenue spent in 2023, Member States reported having supported projects in energy supply, grids and storage (43%), public transport and mobility (23%), social support and just transition (12%), energy efficiency, cooling and heating in buildings (10%) and industry decarbonisation (3%) as well as other purposes (9%).

A share of EU ETS allowances is auctioned to supply the Innovation and Modernisation Funds – two funds established to support decarbonization and modernisation investments in ETS sectors.

Innovation Fund: One of the world's largest funding programmes for rolling out low- and zero-carbon innovative solutions and technologies in energy, industry and net-zero mobility, funded entirely by the EU ETS. The fund provides grants for projects aimed at commercialising innovative low-carbon technologies and bringing industrial solutions to market to decarbonize Europe and support the transition to climate neutrality. It has an estimated budget of EUR 40 billion (USD 43.3 billion) until 2030 (dependent on the carbon price).

Modernisation Fund: A solidarity programme financed by the EU ETS. The fund supports lower-income Member States in financing projects that modernize energy systems, improve energy efficiency and help advance a socially just transition to climate neutrality. It has an estimated budget of EUR 56 billion (USD 60.6 billion) from 2021 to 2030 (allocated among the beneficiary Member States according to a fixed key).

Flexibility & Linking

Offset credits

PHASE 1: The use of Clean Development Mechanism (CDM) and Joint Implementation (JI) credits was allowed without limitation. In practice, no offset credits were used in Phase 1.

PHASE 2: The use of offset credits was allowed. 1,058 $MtCO_2e$ of international credits were used.

Qualitative limits: Most categories of CDM/JI credits were allowed, except for LULUCF and nuclear power. Strict requirements applied for large hydropower projects exceeding 20 MW.

Quantitative limits: In Phase 2, operators were allowed to use JI and CDM credits up to a certain percentage limit determined in the respective country's National Allocation Plan. Unused entitlements were transferred to Phase 3.

PHASE 3: The use of offset credits was allowed with strict limitations.

Qualitative limits: Newly generated international credits (post-2012) had to originate from projects in least developed countries. Credits from CDM and JI projects from other countries were eligible only if registered and implemented before the end of 2012. Projects from industrial gas credits (projects involving the destruction of HFC-23 and N_2O) were excluded regardless of the host country. Credits issued for emission reductions that occurred in the first commitment period of the Kyoto Protocol (2008 to 2012) were no longer accepted after March 2015.

Quantitative limits: The total use of credits for Phase 2 and Phase 3 was capped at 50% of the overall reduction under the EU ETS in that period (~1.6 $GtCO_2e$).

PHASE 4:

The use of offset credits is not allowed.

Banking and borrowing

Banking is allowed (since 2008).

Borrowing is not allowed.

Links with other Systems

The EU ETS and the Swiss ETS have been linked since 2020. A direct link was created between the registries of both systems. It allows regulated entities to transfer allowances from an account in one system to an account in the other system. Allowances issued in one system can be surrendered for emissions generated in either of the two systems.

Other carbon pricing instruments in the jurisdiction

Fuel ETS (national): in Austria and Germany, to be replaced by the EU ETS 2 from 2027 onward.

Carbon tax (national): in Denmark, Estonia, Finland, France, Hungary, Latvia, Netherlands, Norway, Poland, Slovenia, Spain, and Sweden.

Compliance

Compliance mechanism

Covered entities must surrender one allowance per tCO_2e emitted for their covered emissions.

Compliance Period

One calendar year.

Monitoring, Reporting, Verification (MRV)

A harmonized framework of monitoring, reporting, verification and accreditation requirements underpins the EU ETS functioning. Every year, Member States report on implementation of this framework:

- “Monitoring and Reporting Regulation (2018/2066)”
- “Accreditation and Verification Regulation (2018/2067)”
- “Monitoring and Reporting Regulation for maritime transport (2015/757)”

MONITORING: Each installation, aircraft operator and shipping company is required to have an emission monitoring plan, approved by a national competent authority. The deadline for submitting an emissions report is the end of March (for the preceding calendar year).

REPORTING: Emission reports are submitted annually using templates.

VERIFICATION: Emission reports are verified by independent accredited verifiers before the end of March of the following year. Once verified, operators must surrender the equivalent number of allowances by the end of September.

In addition to the details above, a dedicated MRV framework for non-CO_2 aviation effects has started to apply from January 2025.

Penalties and enforcement

Regulated entities must pay an excess emissions penalty of EUR 100 (USD 108.24), adjusted for inflation, for each tCO_2e emitted for which no allowance has been surrendered, in addition to buying and surrendering the equivalent number of allowances. The name of the non-compliant operator is also made public. Member States may enforce different penalties for other forms of non-compliance.

Market Regulation

Market Stability Provisions

MARKET STABILITY RESERVE (MSR)

Instrument type: Quantity-based instrument

Functioning: The MSR was created in 2015 as a long-term measure to address a growing surplus of allowances in the EU ETS. It adjusts auction volumes according to pre-defined thresholds of the total number of allowances in circulation (TNAC), fostering balance in the EU carbon market and resilience to demand shocks. The MSR started operating in 2019.

Triggers*:* The Commission publishes the TNAC communication every year.

- If the TNAC is above 1,096 million, 24% of its volume is withdrawn from future auctions and placed into the MSR over a period of 12 months.
- If the TNAC is between 833 million and 1,096 million, to mitigate threshold effects a smaller share of allowances is deducted from auction volumes and placed in the MSR.
- If the TNAC is less than 400 million allowances, 100 million allowances are released from the MSR and auctioned.

Invalidation: From 2023, allowances in the MSR above a certain threshold are invalidated annually. In 2023, the applicable threshold was the 2022 auction volume. From 2024 onward, the applicable threshold is fixed at 400 million allowances.

At the end of December 2023, the MSR contained 809 million allowances, of which 27 million were set aside for the Innovation Fund. This led to the invalidation of 382 million allowances in January 2024.

Swiss ETS allowance supply is not considered in the TNAC, and Swiss auction quotas are not

affected by the MSR.

BACKLOADING

Instrument type: Quantity-based instrument

Functioning: Implemented in Phase 3 as a short-term measure to address a growing surplus of allowances in the EU ETS. Auctioning of 900 million allowances was postponed from the period spanning 2014 to 2016 until 2019 and 2020. The allowances were eventually placed in the MSR.

Market Design

MARKET PARTICIPATION: Compliance entities and non-compliance entities.

MARKET TYPES:

Primary: Uniform price auctions with single rounds and sealed bids, conducted daily by EEX. Germany has opted out of the common auctioning platform, instead running national auctions through the EEX. Poland has also opted out but continues to participate on the common auction platform at the EEX until further notice.

Secondary: Spot, futures, options, and forward contracts are traded on the secondary markets, both on exchange and over the counter. Besides the EEX, futures are traded on ICE, ENDEX and Nasdaq.

LEGAL STATUS OF ALLOWANCES:

Classified as financial instruments. The associated derivatives can hence be traded on secondary markets.

Other Information

Institutions involved

European Commission: Responsible for establishing the regulatory framework of the EU ETS and centralized administration of the system, e.g., the EU registry.

Competent authorities of all EU Member States as well as Iceland, Liechtenstein, and Norway: implementation, e.g., verifying compliance with MRV and surrender obligations.

Regulatory Framework

Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for GHG emission allowance trading within the Community and amending Council Directive 96/61/EC.

Decision concerning the establishment and operation of a market stability reserve for the Union GHG emission trading scheme and amending Directive 2003/87/EC (6 October 2015).

Consolidated Auctioning Regulation: Commission Delegated Regulation 2023/2830 supplementing Directive 2003/87/EC

All other legislation and documentation can be found here.

Evaluation / ETS review

The European Commission publishes annual reports on the functioning of the European carbon market.*

The ETS Directive stipulates that the system is kept under review in light of the implementation of the Paris Agreement and the development of carbon markets in other major economies. Three major EU ETS reviews — before Phase 3, before Phase 4, and in the context of increasing the EU 2030 climate target — have been conducted to date.

By the end of July 2026, the European Commission will assess:

- how negative emissions (removals) could be accounted for and covered under the EU ETS;
- the feasibility of lowering the 20 MW total rated thermal input thresholds for the activities covered under the EU ETS;
- effective accounting and avoidance of double counting of CCU products under the EU ETS;
- the feasibility of including municipal waste incineration under the EU ETS; and

the functioning of the EU ETS for aviation, including the functioning of CORSIA.

* The latest report was published in 2024, on the EU ETS functioning in 2023.

Disclaimer

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